Chapter NR 664

HAZARDOUS WASTE TREATMENT, STORAGE AND DISPOSAL FACILITY STANDARDS

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Subchapter A — General

NR 664.0001 Purpose, scope and applicability. (1) The purpose of this chapter is to establish minimum state standards which define the acceptable management of hazardous waste.

(2) The standards in this chapter apply to owners and operators of all facilities which treat, store or dispose of hazardous waste, except as specifically provided otherwise in this chapter or ch. NR 661 and s. NR 662.220.

(3) The requirements of this chapter apply to a person disposing of hazardous waste by means of ocean disposal subject to a permit issued under 33 USC 1401 to 1445.

Note: This chapter does apply to the treatment or storage of hazardous waste before it is loaded onto an ocean vessel for incineration or disposal at sea. Title 33 USC 1401 to 1445 is also known as the ocean dumping portion of the federal marine protection, research and sanctuaries act.

(4) The requirements of this chapter apply to a person disposing of hazardous waste by means of underground injection subject to a permit issued under an underground injection control (UIC) program approved or promulgated under 42 USC 300f to 300j−26 only to the extent they are required by 40 CFR 144.14.

Note: This chapter does apply to the above ground treatment or storage of hazardous waste before it is injected underground. Title 42 USC 300f to 300j−26 is also known as the federal safe drinking water act.

(5) The requirements of this chapter do not apply to the owner or operator of a POTW who treats, stores or disposes of hazardous waste in compliance with s. NR 670.001 (3) (b) 9.

(7) The requirements of this chapter do not apply to any of the following:

(a) The owner or operator of a facility licensed or registered by the department to manage either of the following:

1. Municipal or industrial solid waste, if the only hazardous waste the facility disposes of is from very small quantity generators and the facility has been approved by the department to accept hazardous waste from very small quantity generators.

2. Household and very small quantity generator waste, if the facility complies with the requirements of ch. NR 666 subch. HH.

Note: The specific requirements for solid waste landfills accepting hazardous waste from very small quantity generators are contained in s. NR 506.155. Very small quantity generators have the option of ensuring delivery of their hazardous waste to certain solid waste disposal facilities under ss. NR 662.220 (5) (e) 1. b. or 2. c. and d. or 662.220 (6) (e) 1. b. or 2. c. or d.

(b) The owner or operator of a facility managing recyclable materials described in s. NR 661.06 (1) (b), (c) and (d) (except to the extent they are referred to in subch. C, F, G or H of ch. NR 666, or ch. NR 679).

(c) A generator accumulating waste on−site in compliance with s. NR 662.034 or 662.192, or treating waste in containers or tanks, provided the requirements of s. NR 662.034, 662.192 or 662.220 are met.

(d) A farmer disposing of waste pesticides from the farmer's own use in compliance with s. NR 662.070.

(e) The owner or operator of a totally enclosed treatment facility, as defined in s. NR 660.10.

(f) The owner or operator of an elementary neutralization unit or a wastewater treatment unit as defined in s. NR 660.10, provided that if the owner or operator is diluting hazardous ignitable (D001) wastes (other than the D001 high TOC subcategory defined in s. NR 668.40, the table "Treatment Standards for Hazardous Wastes"), or reactive (D003) waste, to remove the characteristic before land disposal, the owner or operator shall comply with s. NR 664.0017 (2).

(h) 1. Except as provided in subd. 2., a person engaged in treatment or containment activities during immediate response to any of the following situations:

a. A discharge of a hazardous waste.

b. An imminent and substantial threat of a discharge of hazardous waste.

c. A discharge of a material which, when discharged, becomes a hazardous waste.

d. An immediate threat to human health, public safety, property or the environment, from the known or suspected presence of military munitions, other explosive material or an explosive device, as determined by an explosive or munitions emergency response specialist as defined in s. NR 660.10.

2. An owner or operator of a facility otherwise regulated by this chapter shall comply with all applicable requirements of subchs. C and D.

3. Any person who is covered by subd. 1. and who continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of this chapter and chs. NR 200 to 210, 212 to 214 and 216 for those activities.

4. In the case of an explosives or munitions emergency response, if a federal, state, tribal or local official acting within the scope of that person's official responsibilities, or an explosives or munitions emergency response specialist, determines that immediate removal of the material or waste is necessary to protect human health or the environment, that official or specialist may authorize the removal of the material or waste by transporters who do not have EPA identification numbers or hazardous waste transportation licenses and without the preparation of a manifest. In the case of emergencies involving military munitions, the responding military emergency response specialist's organizational unit shall retain records for 3 years identifying the dates of the response, the responsible persons responding, the type and description of material addressed and its disposition.

(i) A transporter storing manifested shipments of hazardous waste in containers meeting the requirements of s. NR 662.030 at a transfer facility for a period of 10 days or less.

(j) The addition of absorbent material to waste in a container (as defined in s. NR 660.10) or the addition of waste to absorbent material in a container, provided that these actions occur at the time waste is first placed in the container; and ss. NR 664.0017 (2), 664.0171 and 664.0172 are complied with.

(k) Universal waste handlers and universal waste transporters (as defined in s. NR 660.10) handling any of the following wastes. These handlers are regulated under ch. NR 673, when handling any of the following universal wastes:

1. Batteries as described in s. NR 673.02.

2. Pesticides as described in s. NR 673.03.

3. Thermostats as described in s. NR 673.04.

4. Lamps as described in s. NR 673.05.

(8) The requirements of this chapter apply to owners or operators of all facilities which treat, store or dispose of hazardous wastes referred to in ch. NR 668.

(9) Section NR 666.205 identifies when the requirements of this chapter apply to the storage of military munitions classified as solid waste under s. NR 666.202. The treatment and disposal of hazardous waste military munitions are subject to the applicable licensing, procedural and technical standards in chs. NR 660 to 670.

(10) The requirements of subchs. B, C and D and s. NR 664.0101 do not apply to remediation waste management sites. (However, some remediation waste management sites may be a part of a facility that is subject to a license issued under s. 291.25, Stats., and ch. NR 670 because the facility is also treating, storing or disposing of hazardous wastes that are not remediation wastes. In these cases, subchs. B, C and D, and s. NR 664.0101 do apply to the facility subject to the license.) Instead of meeting the requirements of subchs. B, C and D, owners or operators of remediation waste management sites shall do all of the following:

(a) Obtain an EPA identification number as specified in s. NR 660.07.

(b) Obtain a detailed chemical and physical analysis of a representative sample of the hazardous remediation wastes to be managed at the site. At a minimum, the analysis shall contain all of the information which must be known to treat, store or dispose of the waste according to this chapter and ch. NR 668, and shall be kept accurate and up to date.

(c) Prevent people who are unaware of the danger from entering, and minimize the possibility for unauthorized people or livestock to enter onto the active portion of the remediation waste management site, unless the owner or operator can demonstrate to the department all of the following:

1. Physical contact with the waste, structures or equipment within the active portion of the remediation waste management site will not injure people or livestock who may enter the active portion of the remediation waste management site.

2. Disturbance of the waste or equipment by people or livestock, who enter onto the active portion of the remediation waste management site, will not cause a violation of the requirements of this chapter.

(d) Inspect the remediation waste management site for malfunctions, deterioration, operator errors and discharges that may be causing, or may lead to, a release of hazardous waste constituents to the environment, or a threat to human health. The owner or operator shall conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment, and shall remedy the problem before it leads to a human health or environmental hazard. Where a hazard is imminent or has already occurred, the owner or operator shall take remedial action immediately.

(e) Provide personnel with classroom or on−the−job training on how to perform their duties in a way that ensures the remediation waste management site complies with the requirements of this chapter, and on how to respond effectively to emergencies.

(f) Take precautions to prevent accidental ignition or reaction of ignitable or reactive waste, and prevent threats to human health and the environment from ignitable, reactive and incompatible waste.

(g) For remediation waste management sites regulated under subchs. I to O and X, design, construct, operate and maintain a unit within a 100−year floodplain to prevent washout of any hazardous waste by a 100−year flood, unless the owner or operator can meet the demonstration of s. NR 664.0018 (2).

(h) Not place any non−containerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine or cave.

(i) Develop and maintain a construction quality assurance program for all surface impoundments, waste piles and landfill units that are required to comply with ss. NR 664.0221 (3) and (4), 664.0251 (3) and (4) and 664.0301 (3) and (4) at the remediation waste management site, according to the requirements of s. NR 664.0019.

(j) Develop and maintain procedures to prevent accidents and a contingency and emergency plan to control accidents that occur. These procedures shall address proper design, construction, maintenance and operation of remediation waste management units at the site. The goal of the plan shall be to minimize the possibility of, and the hazards from a fire, explosion or any unplanned sudden or non−sudden release of hazardous waste or hazardous waste constituents to air, soil or surface water that could threaten human health or the environment. The plan shall explain specifically how to treat, store and dispose of the hazardous remediation waste in question, and shall be implemented immediately whenever a fire, explosion or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment occurs.

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(k) Designate at least one employee, either on the facility premises or on call (that is, available to respond to an emergency by reaching the facility quickly), to coordinate all emergency response measures. This emergency coordinator shall be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person shall have the authority to commit the resources needed to carry out the contingency plan.

(L) Develop, maintain and implement a plan to meet the requirements in pars. (b) to (f), (i) and (j).

(m) Maintain records documenting compliance with pars. (a) to (L).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0003 Relationship to interim license standards. A facility owner or operator who has fully complied with the requirements for an interim license, as defined in s. 291.25, Stats., and s. NR 670.070, shall comply with ch. NR 665 in lieu of this chapter, until final administrative disposition of the owner or operator's operating license application is made, except as provided under subch. S.

Note: As stated in s. 291.25, Stats., the treatment, storage or disposal of hazardous waste is prohibited except according to a license. Section 291.25(4), Stats., provides for the interim licensing of an existing facility which meets certain conditions until final administrative disposition of the owner's or operator's operating license application is made.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0004 Imminent danger action. Notwithstanding any other provisions of this chapter, enforcement actions may be brought pursuant to s. 291.85, Stats.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter B — General Facility Standards

NR 664.0010 Applicability. (1) This subchapter applies to owners and operators of all hazardous waste facilities, except as provided in s. NR 664.0001 and sub. (2).

(2) Section NR 664.0018 (2) applies only to facilities regulated under subchs. I to O and X.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0011 Identification number. Every facility owner or operator shall apply to the department for an EPA identification number according to the procedures in s. NR 660.07.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0012 Required notices. (1) (a) The owner or operator of a facility that has arranged to receive hazardous waste from a foreign source shall notify the regional administrator in writing at least 4 weeks in advance of the date the waste is expected to arrive at the facility. Notice of subsequent shipments of the same waste from the same foreign source is not required.

(b) The owner or operator of a recovery facility that has arranged to receive hazardous waste subject to subch. H of ch. NR 662 shall provide a copy of the tracking document bearing all required signatures to the notifier, to the:

Office of Enforcement and Compliance Assurance
Office of Compliance; Enforcement Planning, Targeting and Data Division (2222A)
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460

and to the competent authorities of all other concerned countries within 3 working days of receipt of the shipment. The original of the signed tracking document shall be maintained at the facility for at least 3 years.

(2) The owner or operator of a facility that receives hazardous waste from an off−site source (except where the owner or operator is also the generator) shall inform the generator in writing that the owner or operator has the appropriate licenses for, and will accept the waste the generator is shipping. The owner or operator shall keep a copy of this written notice as part of the operating record.

(3) Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the long−term care period, the owner or operator shall notify the new owner or operator in writing of the requirements of this chapter and ch. NR 670.

Note: An owner's or operator's failure to notify the new owner or operator of the requirements of this chapter in no way relieves the new owner or operator of that person's obligation to comply with all applicable requirements.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0013 General waste analysis. (1) (a) Before an owner or operator treats, stores or disposes of any hazardous wastes, or nonhazardous wastes if applicable under s. NR 664.0113 (4), the owner or operator shall obtain a detailed chemical and physical analysis of a representative sample of the wastes. At a minimum, the analysis shall contain all the information which must be known to treat, store or dispose of the waste according to this chapter and ch. NR 668.

1. Chemical and physical samples shall be analyzed by a laboratory certified or registered under ch. NR 149, except for field analyses for pH, specific conductance and temperature.

(b) The analysis may include data developed under ch. NR 661 and s. NR 662.220, and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes.

Note: For example, the facility's records of analyses performed on the waste before the effective date of these rules, or studies conducted on hazardous waste generated from processes similar to that which generated the waste to be managed at the facility, may be included in the data base required to comply with par. (a). The owner or operator of an off−site facility may arrange for the generator of the hazardous waste to supply part of the information required by par. (a), except as otherwise specified in s. NR 668.07(2) and (3). If the generator does not supply the information, and the owner or operator chooses to accept a hazardous waste, the owner or operator is responsible for obtaining the information required to comply with this section.

(c) The analysis shall be repeated as necessary to ensure that it is accurate and up to date. At a minimum, the analysis shall be repeated when any of the following occurs:

1. The owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous wastes, or non−hazardous wastes if applicable under s. NR 664.0113 (4), has changed.

2. For off−site facilities, the results of the inspection required in par. (d) indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

(d) The owner or operator of an off−site facility shall inspect and, if necessary, analyze each hazardous waste movement received at the facility to determine whether it matches the identity of the waste specified on the accompanying manifest or shipping paper.

(2) The owner or operator shall develop and follow a written waste analysis plan which describes the procedures which the owner or operator will carry out to comply with sub. (1). The owner or operator shall keep this plan at the facility. At a minimum, the plan shall specify all of the following:

(a) The parameters for which each hazardous waste, or non−hazardous waste if applicable under s. NR 664.0113 (4), will be analyzed and the rationale for the selection of these parameters (i.e., how analysis for these parameters will provide sufficient information on the waste's properties to comply with sub. (1)).

(b) The test methods which will be used to test for these parameters.

(c) The sampling method which will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using one of the following:

1. One of the sampling methods described in ch. NR 661 Appendix I.

2. An equivalent sampling method.

Note: See s. NR 660.21 for related discussion.

(d) The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date.

(e) For off−site facilities, the waste analyses that hazardous waste generators have agreed to supply.

(f) Where applicable, the methods that will be used to meet the additional waste analysis requirements for specific waste management methods specified in ss. NR 664.0017, 664.0314, 664.0341, 664.1034 (4), 664.1063 (4), 664.1083 and 668.07.

(g) For surface impoundments exempted from land disposal restrictions under s. NR 668.04 (1), the procedures and schedules for all of the following:

1. The sampling of impoundment contents.

2. The analysis of test data.

3. The annual removal of residues which are not delisted under s. NR 660.22 or which exhibit a characteristic of hazardous waste and meet any of the following criteria:

a. The residues do not meet applicable treatment standards of subch. D of ch. NR 668.

b. Where no treatment standards have been established, any of the following applies:

1) The residues are prohibited from land disposal under s. NR 668.32 or 42 USC 6924(d).

2) The residues are prohibited from land disposal under s. NR 668.33.

(h) For owners and operators seeking an exemption to the air emission standards of subch. CC according to s. NR 664.1082, any of the following:

1. If direct measurement is used for the waste determination, the procedures and schedules for waste sampling and analysis, and the results of the analysis of test data to verify the exemption.

2. If knowledge of the waste is used for the waste determination, any information prepared by the facility owner or operator or by the generator of the hazardous waste, if the waste is received from off−site, that is used as the basis for knowledge of the waste.

(3) For off−site facilities, the waste analysis plan required in sub. (2) shall also specify the procedures which will be used to inspect and, if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. At a minimum, the plan shall describe all of the following:

(a) The procedures which will be used to determine the identity of each movement of waste managed at the facility.

(b) The sampling method which will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling.

Note: Note: Chapter NR 670 requires that the waste analysis plan be submitted with the feasibility and plan of operation report.

(c) The procedures that the owner or operator of an off−site landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; **correction in (2) (c) 1. made under s. 13.92 (4) (b) 7., Stats., Register March 2013 No. 687.**

NR 664.0014 Security. (1) The owner or operator shall prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility, unless the owner or operator can demonstrate to the department all of the following:

(a) Physical contact with the waste, structures, or equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility.

(b) Disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of this chapter.

Note: Chapter NR 670 requires that an owner or operator who wishes to make the demonstration referred to in pars. (a) and (b) shall do so with the feasibility report or feasibility and plan of operation report.

(2) Unless the owner or operator has made a successful demonstration under sub. (1) (a) and (b), a facility shall have any of the following:

(a) A 24−hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the active portion of the facility.

(b) All of the following:

1. An artificial or natural barrier (e.g., a fence in good repair or a fence combined with a cliff), which completely surrounds the active portion of the facility.

2. A means to control entry, at all times, through the gates or other entrances to the active portion of the facility (e.g., an attendant, television monitors, locked entrance or controlled roadway access to the facility).

Note: The requirements of sub. (2) are satisfied if the facility or plant within which the active portion is located itself has a surveillance system, or a barrier and a means to control entry, which complies with the requirements of par. (a) or (b).

(3) Unless the owner or operator has made a successful demonstration under sub. (1) (a) and (b), a sign with the legend, "Danger—Unauthorized Personnel Keep Out", shall be posted at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion. The legend shall be written in English and in any other language predominant in the area surrounding the facility, and shall be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger—Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous.

Note: See s. NR 664.0117(2) for discussion of security requirements at disposal facilities during the long−term care period.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0015 General inspection requirements. (1) The owner or operator shall inspect the facility for malfunctions and deterioration, operator errors and discharges which may be causing, or may lead to, release of hazardous waste constituents to the environment or a threat to human health. The owner or operator shall conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

(2) (a) The owner or operator shall develop and follow a written schedule for inspecting monitoring equipment, safety and emergency equipment, security devices and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting or responding to environmental or human health hazards.

(b) The owner or operator shall keep this schedule at the facility.

(c) The schedule shall identify the types of problems (e.g., malfunctions or deterioration) which are to be looked for during the inspection (e.g., inoperative sump pump, leaking fitting, eroding dike, etc.).

Note: Chapter NR 670 requires the inspection schedule to be submitted with the feasibility and plan of operation report. The department shall evaluate the schedule along with the rest of the report to ensure that it adequately protects human health and the environment. As part of this review, the department may modify or amend the schedule as may be necessary.

(d) The frequency of inspection may vary for the items on the schedule. However, the frequency should be based on the rate of

deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, shall be inspected daily when in use. At a minimum, the inspection schedule shall include the items and frequencies called for in ss. NR 664.0174, 664.0193, 664.0195, 664.0226, 664.0254, 664.0303, 664.0347, 664.0602, 664.1033, 664.1052, 664.1053, 664.1058 and 664.1083 to 664.1089, where applicable.

(3) The owner or operator shall remedy any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action shall be taken immediately.

(4) The owner or operator shall record inspections in an inspection log or summary and shall keep these records for at least 3 years from the date of inspection. At a minimum, these records shall include the date and time of the inspection, the name of the inspector, a notation of the observations made and the date and nature of any repairs or other remedial actions.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0016 Personnel training. (1) (a) Facility personnel shall successfully complete a program of classroom instruction or on−the−job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this chapter. The owner or operator shall ensure that this program includes all the elements described in the document required under sub. (4) (c).

Note: Chapter NR 670 requires that owners and operators submit with the feasibility and plan of operation report, an outline of the training program used (or to be used) at the facility and a brief description of how the training program is designed to meet actual job tasks.

(b) This program shall be directed by a person trained in hazardous waste management procedures, and shall include instruction which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.

(c) At a minimum, the training program shall be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment and emergency systems, including, where applicable, all of the following:

1. Procedures for using, inspecting, repairing and replacing facility emergency and monitoring equipment.
2. Key parameters for automatic waste feed cut−off systems.
3. Communications or alarm systems.
4. Response to fires or explosions.
5. Response to groundwater contamination incidents.
6. Shutdown of operations.

(2) Facility personnel shall successfully complete the program required in sub. (1) within 6 months after August 1, 2006 or 6 months after the date of their employment or assignment to a facility, or to a new position at a facility, whichever is later. Employees hired after August 1, 2006 may not work in unsupervised positions until they have completed the training requirements of sub. (1).

(3) Facility personnel shall take part in an annual review of the initial training required in sub. (1).

(4) The owner or operator shall maintain all of the following documents and records at the facility:

(a) The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job.

(b) A written job description for each position listed under par. (a). This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but shall include the requisite skill, education or other qualifications, and duties of employees assigned to each position.

(c) A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under par. (a).

(d) Records that document that the training or job experience required under subs. (1), (2) and (3) has been given to, and completed by, facility personnel.

(5) Training records on current personnel shall be kept until closure of the facility. Training records on former employees shall be kept for at least 3 years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0017 General requirements for ignitable, reactive or incompatible wastes. (1) The owner or operator shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste shall be separated and protected from sources of ignition or reaction including, but not limited to, open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical or mechanical), spontaneous ignition (e.g., from heat−producing chemical reactions) and radiant heat. While ignitable or reactive waste is being handled, the owner or operator shall confine smoking and open flame to specially designated locations. "No Smoking" signs shall be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

(2) Where specifically required by other sections of this chapter, the owner or operator of a facility that treats, stores or disposes ignitable or reactive waste, or mixes incompatible waste or incompatible wastes and other materials, shall take precautions to prevent reactions which do any of the following:

(a) Generate extreme heat or pressure, fire or explosions or violent reactions.

(b) Produce uncontrolled toxic mists, fumes, dusts or gases in sufficient quantities to threaten human health or the environment.

(c) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions.

(d) Damage the structural integrity of the device or facility.

(e) Through other like means threaten human health or the environment.

(3) When required to comply with sub. (1) or (2), the owner or operator shall document that compliance. This documentation may be based on references to published scientific or engineering literature, data from trial tests (e.g., bench scale or pilot scale tests), waste analyses (as specified in s. NR 664.0013), or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0018 Location standards.

Note: There is no location standard for seismic considerations in Wisconsin. See appendix VI of 40 CFR part 264 for more information.

(2) FLOODPLAINS. (a) A facility located in a 100−year floodplain shall be designed, constructed, operated and maintained to prevent washout of any hazardous waste by a 100−year flood, unless the owner or operator can demonstrate any of the following to the department's satisfaction:

1. Procedures are in effect which will cause the waste to be removed safely, before flood waters can reach the facility, to a location where the wastes will not be vulnerable to flood waters.

2. For existing surface impoundments, waste piles, landfills and miscellaneous units, no adverse effects on human health or the environment will result if washout occurs, considering all of the following:

a. The volume and physical and chemical characteristics of the waste in the facility.

b. The concentration of hazardous constituents that would potentially affect surface waters as a result of washout.

c. The impact of the concentrations on the current or potential uses of and water quality standards established for the affected surface waters.

d. The impact of hazardous constituents on the sediments of affected surface waters or the soils of the 100−year floodplain that could result from washout.

Note: The location where wastes are moved must be a facility which is either licensed by the department under ch. NR 670, authorized to manage hazardous waste by a state with a hazardous waste management program authorized under 40 CFR part 271, or interim licensed under chs. NR 665 and 670.

(b) As used in par. (a):

1. "100−year floodplain" means any land area which is subject to a one percent or greater chance of flooding in any given year from any source.

2. "Washout" means the movement of hazardous waste from the active portion of the facility as a result of flooding.

3. "100−year flood" means a flood that has a one percent chance of being equaled or exceeded in any given year.

(3) SALT DOME FORMATIONS, SALT BED FORMATIONS, UNDERGROUND MINES AND CAVES. The placement of any noncontainerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine or cave is prohibited.

(4) WETLAND. A hazardous waste facility may not be located in a wetland.

(5) CRITICAL HABITAT. A hazardous waste facility may not be located in a critical habitat.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0019 Construction quality assurance program. (1) CQA PROGRAM. (a) A construction quality assurance (CQA) program is required for all surface impoundment, waste pile and landfill units that are required to comply with ss. NR 664.0221 (3) and (4), 664.0251 (3) and (4) and 664.0301 (3) and (4). The program shall ensure that the constructed unit meets or exceeds all design criteria and specifications in the approved feasibility and plan of operation report. The program shall be developed and implemented under the direction of a CQA officer who is a registered professional engineer.

(b) The CQA program shall address all of the following physical components, where applicable:

1. Foundations.

2. Dikes.

3. Low−permeability soil liners.

4. Geomembranes (flexible membrane liners).

5. Leachate collection and removal systems and leak detection systems.

6. Final cover systems.

(2) WRITTEN CQA PLAN. The owner or operator of units subject to the CQA program under sub. (1) shall develop and implement a written CQA plan. The plan shall identify steps that will be used to monitor and document the quality of materials and the condition and manner of their installation. The CQA plan shall include all of the following:

(a) Identification of applicable units, and a description of how they will be constructed.

(b) Identification of key personnel in the development and implementation of the CQA plan, and CQA officer qualifications.

(c) A description of inspection and sampling activities for all unit components identified in sub. (1) (b), including observations and tests that will be used before, during and after construction to ensure that the construction materials and the installed unit components meet the design specifications. The description shall cover sampling size and locations, frequency of testing, data evaluation procedures, acceptance and rejection criteria for construction materials, plans for implementing corrective measures and data or other information to be recorded and retained in the operating record under s. NR 664.0073.

(3) CONTENTS OF PROGRAM. (a) The CQA program shall include observations, inspections, tests and measurements sufficient to ensure all of the following:

1. Structural stability and integrity of all components of the unit identified in sub. (1) (b).

2. Proper construction of all components of the liners, leachate collection and removal system, leak detection system and final cover system, according to approved feasibility and plan of operation report specifications and good engineering practices, and proper installation of all components (e.g., pipes) according to design specifications.

3. Conformity of all materials used with design and other material specifications under ss. NR 664.0221, 664.0251 and 664.0301.

(b) The CQA program shall include test fills for compacted soil liners, using the same compaction methods as in the full scale unit, to ensure that the liners are constructed to meet the hydraulic conductivity requirements of ss. NR 664.0221 (3) (a) 1. b., 664.0251 (3) (a) 1. b. and 664.0301 (3) (a) 1. b. in the field. Compliance with the hydraulic conductivity requirements shall be verified by using in−situ testing on the constructed test fill. The department may accept an alternative demonstration, in lieu of a test fill, where data are sufficient to show that a constructed soil liner will meet the hydraulic conductivity requirements of ss. NR 664.0221 (3) (a) 1. b., 664.0251 (3) (a) 1. b. and 664.0301 (3) (a) 1. b. in the field.

(4) CERTIFICATION. Waste may not be received in a unit subject to s. NR 664.0019 until the owner or operator has submitted to the department by certified mail or hand delivery a certification signed by the CQA officer that the approved CQA plan has been successfully carried out and that the unit meets the requirements of s. NR 664.0221 (3) or (4), 664.0251 (3) or (4) or 664.0301 (3) or (4); and the procedure in s. NR 670.030 (12) (b) 2. has been completed. Documentation supporting the CQA officer's certification shall be furnished to the department upon request. The department may choose to perform a site inspection after reviewing the CQA documentation. An inspection by the department or the submittal of additional information is subject to the fees stated in ch. NR 670 Appendix II.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; correction in (4) made under s. 13.92 (4) (b) 7., Stats., Register March 2013 No. 687.

NR 664.0025 Construction certification for a new facility. Owners and operators of all newly constructed treatment or storage facilities shall submit a written statement to the department, within 15 days after the construction is completed, certifying that the facility was constructed in substantial compliance with the approved feasibility and plan of operation report.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter C — Preparedness and Prevention

NR 664.0030 Applicability. This subchapter applies to owners and operators of all hazardous waste facilities, except as s. NR 664.0001 provides otherwise.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0031 Design and operation of facility. Facilities shall be designed, constructed, maintained and operated to minimize the possibility of a fire, explosion or any unplanned sudden or non−sudden release of hazardous waste or hazardous waste constituents to air, soil or surface water which could threaten human health or the environment.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0032 Required equipment. All facilities shall be equipped with all of the following, unless it can be demonstrated to the department that none of the hazards posed by waste handled at the facility could require any of the following particular kinds of equipment:

(1) An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel.

(2) A device, such as a telephone (immediately available at the scene of operations) or a hand−held 2−way radio, capable of summoning emergency assistance from local police departments, fire departments or state or local emergency response teams.

(3) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas or dry chemicals), spill control equipment and decontamination equipment.

(4) Water at adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers or water spray systems.

Note: Chapter NR 670 requires that an owner or operator who wishes to make the demonstration referred to in this section shall do so with the feasibility and plan of operation report.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0033 Testing and maintenance of equipment. All facility communications or alarm systems, fire protection equipment, spill control equipment and decontamination equipment, where required, shall be tested and maintained as necessary to assure its proper operation in time of emergency.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0034 Access to communications or alarm system. (1) Whenever hazardous waste is being poured, mixed, spread or otherwise handled, all personnel involved in the operation shall have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless the department has ruled that such a device is not required under s. NR 664.0032.

(2) If there is ever just one employee on the premises while the facility is operating, that employee shall have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand−held 2−way radio, capable of summoning external emergency assistance, unless the department has ruled that such a device is not required under s. NR 664.0032.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0035 Required aisle space. The owner or operator shall maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment and decontamination equipment to any area of facility operation in an emergency, unless it can be demonstrated to the department that aisle space is not needed for any of these purposes.

Note: Chapter NR 670 requires that an owner or operator who wishes to make the demonstration referred to in this section must do so with the feasibility and plan of operation report.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0037 Arrangements with local authorities. (1) The owner or operator shall attempt to make all of the following arrangements, as appropriate for the type of waste handled at the facility and the potential need for the services of these organizations:

(a) Arrangements to familiarize police, fire departments and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility and possible evacuation routes.

(b) Where more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority.

(c) Agreements with state emergency response teams, emergency response contractors and equipment suppliers.

(d) Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions or releases at the facility.

(2) Where state or local authorities decline to enter into these arrangements, the owner or operator shall document the refusal in the operating record.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter D — Contingency Plan and Emergency Procedures

NR 664.0050 Applicability. This subchapter applies to owners and operators of all hazardous waste facilities, except as s. NR 664.0001 provides otherwise.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0051 Purpose and implementation of contingency plan. (1) The owner or operator shall have a contingency plan for the facility. The contingency plan shall be designed to minimize hazards to human health or the environment from fires, explosions or any unplanned sudden or non−sudden release of hazardous waste or hazardous waste constituents to air, soil or surface water.

(2) The provisions of the plan shall be carried out immediately whenever there is a fire, explosion or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0052 Content of contingency plan. (1) The contingency plan shall describe the actions facility personnel shall take to comply with ss. NR 664.0051 and 664.0056 in response to fires, explosions or any unplanned sudden or non−sudden release of hazardous waste or hazardous waste constituents to air, soil or surface water at the facility.

(2) If the owner or operator has already prepared a spill prevention, control and countermeasures (SPCC) plan according to 40 CFR part 112 or 300, or some other emergency or contingency plan, the owner or operator need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this chapter.

(3) The plan shall describe arrangements agreed to by local police departments, fire departments, hospitals, contractors and state and local emergency response teams to coordinate emergency services, pursuant to s. NR 664.0037.

(4) The plan shall list names, addresses and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see s. NR 664.0055), and this list shall be kept up to date. Where more than one person is listed, one shall be named as primary emergency coordinator and others shall be listed in the order in which they will assume responsibility as alternates. For new facilities, this information shall be supplied to the department at the time of certification, rather than at the time of feasibility and plan of operation report submittal.

(5) The plan shall include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external) and decontamination equipment), where this equipment is required. This list shall be kept up to date. In addition, the plan

shall include the location and a physical description of each item on the list, and a brief outline of its capabilities.

(6) The plan shall include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan shall describe the signal or signals to be used to begin evacuation, evacuation routes and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0053 Copies of contingency plan. A copy of the contingency plan and all revisions to the plan shall be:

(1) Maintained at the facility.

(2) Submitted to all local police departments, fire departments, hospitals and state and local emergency response teams that may be called upon to provide emergency services.

Note: The contingency plan shall be submitted to the department with the feasibility and plan of operation report under ch. NR 670 and, after modification or approval, will become a condition of any approval or modification issued.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0054 Amendment of contingency plan. The contingency plan shall be reviewed, and immediately amended, if necessary, whenever any of the following occurs:

(1) The facility license is revised.

(2) The plan fails in an emergency.

(3) The facility changes—in its design, construction, operation, maintenance or other circumstances—in a way that materially increases the potential for fires, explosions or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency.

(4) The list of emergency coordinators changes.

(5) The list of emergency equipment changes.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0055 Emergency coordinator. At all times, there shall be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator shall be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility and the facility layout. In addition, this person shall have the authority to commit the resources needed to carry out the contingency plan.

Note: The emergency coordinator's responsibilities are more fully spelled out in s. NR 664.0056. Applicable responsibilities for the emergency coordinator vary, depending on factors such as type and variety of wastes handled by the facility, and type and complexity of the facility.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0056 Emergency procedures. (1) Whenever there is an imminent or actual emergency situation, the emergency coordinator (or a designee when the emergency coordinator is on call) shall immediately do all of the following:

(a) Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel.

(b) Notify appropriate state or local agencies with designated response roles if their help is needed.

(2) Whenever there is a release, fire or explosion, the emergency coordinator shall immediately identify the character, exact source, amount and areal extent of any released materials. The emergency coordinator may do this by observation or review of facility records or manifests and, if necessary, by chemical analysis.

(3) Concurrently, the emergency coordinator shall assess possible hazards to human health or the environment that may result from the release, fire or explosion. This assessment shall consider both direct and indirect effects of the release, fire or explosion (e.g., the effects of any toxic, irritating or asphyxiating gases that are generated, or the effects of any hazardous surface water run−off from water or chemical agents used to control fire and heat−induced explosions).

(4) If the emergency coordinator determines that the facility has had a release, fire or explosion which could threaten human health, or the environment, outside the facility, that person shall report the findings according to all of the following:

(a) If the emergency coordinator's assessment indicates that evacuation of local areas may be advisable, the emergency coordinator shall immediately notify appropriate local authorities. The emergency coordinator shall be available to help appropriate officials decide whether local areas should be evacuated.

(b) The emergency coordinator shall immediately notify either the government official designated as the on−scene coordinator for that geographical area (in the applicable regional contingency plan under 40 CFR part 300), or the national response center (using its 24−hour toll free number 800/424−8802) and the division of emergency government (using its 24−hour toll free number 800/943−0003). The report shall include all of the following:

1. Name and telephone number of reporter.
2. Name and address of facility.
3. Time and type of incident (e.g., release, fire).
4. Name and quantity of materials involved, to the extent known.
5. The extent of injuries, if any.
6. The possible hazards to human health, or the environment, outside the facility.

(5) During an emergency, the emergency coordinator shall take all reasonable measures necessary to ensure that fires, explosions and releases do not occur, recur or spread to other hazardous waste at the facility. These measures shall include, where applicable, stopping processes and operations, collecting and containing released waste and removing or isolating containers.

(6) If the facility stops operations in response to a fire, explosion or release, the emergency coordinator shall monitor for leaks, pressure buildup, gas generation or ruptures in valves, pipes or other equipment, wherever this is appropriate.

(7) Immediately after an emergency, the emergency coordinator shall provide for treating, storing or disposing of recovered waste, contaminated soil or surface water or any other material that results from a release, fire or explosion at the facility.

Note: Unless the owner or operator can demonstrate, according to s. NR 661.03(3) or (4), that the recovered material is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it according to all applicable requirements of chs. NR 662 and 663 and this chapter.

(8) The emergency coordinator shall ensure all of the following, in the affected areas of the facility:

(a) No waste that may be incompatible with the released material is treated, stored or disposed of until cleanup procedures are completed.

(b) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

(9) The owner or operator shall notify the department, and appropriate state and local authorities, that the facility is in compliance with sub. (8) before operations are resumed in the affected areas of the facility.

(10) The owner or operator shall note in the operating record the time, date and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, the owner or operator shall submit a written report on the incident to the department. The report shall include all of the following:

(a) Name, address and telephone number of the owner or operator.

(b) Name, address and telephone number of the facility.

(c) Date, time and type of incident (e.g., fire, explosion).

(d) Name and quantity of materials involved.

(e) The extent of injuries, if any.

(f) An assessment of actual or potential hazards to human health or the environment, where this is applicable.

(g) Estimated quantity and disposition of recovered material that resulted from the incident.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter E — Manifest System, Recordkeeping and Reporting

NR 664.0070 Applicability. This subchapter applies to owners and operators of both on−site and off−site facilities, except as s. NR 664.0001 provides otherwise. Sections NR 664.0071, 664.0072 and 664.0076 do not apply to owners and operators of on−site facilities that do not receive any hazardous waste from off−site sources, and to owners and operators of off−site facilities with respect to waste military munitions exempted from manifest requirements under s. NR 666.203 (1). Section NR 664.0073 (2) only applies to licensees who treat, store or dispose of hazardous wastes on−site where the wastes were generated.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; CR 06−102: am. Register March 2007 No. 615, eff. 4−1−07.

NR 664.0071 Use of manifest system. (1) (a) If a facility receives hazardous waste accompanied by a manifest, the owner or operator, or an agent, shall sign and date each copy of the manifest as indicated in par. (b) to certify that the hazardous waste covered by the manifest was received, that the hazardous waste was received except as noted in the discrepancy space of the manifest, or that the hazardous waste was rejected as noted in the manifest discrepancy space.

(b) If a facility receives a hazardous waste shipment accompanied by a manifest, the owner, operator or an agent shall do all of the following:

1. Sign and date, by hand, each copy of the manifest.

2. Note any discrepancies, as defined in s. NR 664.0072 (1), on each copy of the manifest.

3. Immediately give the transporter at least one copy of the manifest.

4. Within 30 days of delivery, send a copy of the manifest to the generator and, within 45 days, send one copy of the manifest to the department in an electronic format specified by the department.

5. Retain at the facility a copy of each manifest for at least 3 years from the date of delivery.

6. Pay a manifest fee for each manifest submitted as designated in ch. NR 670 Appendix II. The department will bill each facility annually for accumulated manifest review fees.

(c) If a facility receives hazardous waste imported from a foreign source, the owner or operator of the receiving facility shall mail a copy of the manifest to the following address within 30 days of delivery: International Compliance Assurance Division, OFA/OECA (2254A), U.S. Environmental Protection Agency, Ariel Rios Building, 1200 Pennsylvania Avenue, NW., Washington, DC 20460.

(2) If a facility receives, from a rail or water (bulk shipment) transporter, hazardous waste which is accompanied by a shipping paper containing all the information required on the manifest (excluding the EPA identification numbers, generator's certification, and signatures), the owner or operator, or an agent, shall do all of the following:

(a) Sign and date each copy of the manifest or shipping paper (if the manifest has not been received) to certify that the hazardous waste covered by the manifest or shipping paper was received.

(b) Note any significant discrepancies (as defined in s. NR 664.0072 (1)) in the manifest or shipping paper (if the manifest has not been received) on each copy of the manifest or shipping paper.

Note: The department does not intend that the owner or operator of a facility whose procedures under s. NR 664.0013 (3) include waste analysis shall perform that analysis before signing the shipping paper and giving it to the transporter. Section NR 664.0072 (2), however, requires reporting an unreconciled discrepancy discovered during later analysis.

(c) Immediately give the rail or water (bulk shipment) transporter at least one copy of the manifest or shipping paper (if the manifest has not been received).

(d) Within 30 days after the delivery, send one copy of the signed and dated manifest or a signed and dated copy of the shipping paper (if the manifest has not been received within 30 days after delivery) to the generator and, within 45 days, send one copy of the manifest to the department in an electronic format specified by the department.

Note: Section NR 662.023 (3) requires the generator to send 3 copies of the manifest to the facility when hazardous waste is sent by rail or water (bulk shipment).

(e) Retain at the facility a copy of the manifest and shipping paper (if signed in lieu of the manifest at the time of delivery) for at least 3 years from the date of delivery.

(f) Pay a manifest fee for each manifest submitted as designated in ch. NR 670 Appendix II. The department will bill each facility annually for accumulated manifest review fees.

(3) Whenever a shipment of hazardous waste is initiated from a facility, the owner or operator of that facility shall comply with the requirements of ch. NR 662.

Note: The provisions of s. NR 662.034 or 662.192 are applicable to the on−site accumulation of hazardous wastes by generators. Therefore, the provisions of s. NR 662.034 or 662.192 only apply to owners or operators who are shipping hazardous waste which they generated at that facility.

(4) Within 3 working days of the receipt of a shipment subject to subch. H of ch. NR 662, the owner or operator of the facility shall provide a copy of the tracking document bearing all required signatures to the notifier, to the Office of Enforcement and Compliance Assurance, Office of Compliance, Enforcement Planning, Targeting and Data Division (2222A), U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., N.W., Washington, DC 20460, and to competent authorities of all other concerned countries. The original copy of the tracking document shall be maintained at the facility for at least 3 years from the date of signature.

(5) The owner or operator of a facility shall determine whether the consignment state for a shipment regulates any additional wastes (beyond those regulated federally) as hazardous wastes under its state hazardous waste program. The owner or operator of a facility shall also determine whether the consignment state or generator state requires the facility to submit any copies of the manifest to these states.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; CR 06−102: am. Register March 2007 No. 615, eff. 4−1−07; **corrections in (1) (b) 6., (2) (f) made under s. 13.92 (4) (b) 7., Stats., Register March 2013 No. 687.**

NR 664.0072 Manifest discrepancies. (1) Manifest discrepancies are any of the following:

(a) Significant differences, as defined by sub. (2), between the quantity or type of hazardous waste designated on the manifest or shipping paper, and the quantity or type of hazardous waste a facility actually receives.

(b) Rejected wastes, which may be a full or partial shipment of hazardous waste that the treatment, storage or disposal facility cannot accept.

(c) Container residues, which are residues that exceed the quantity limits for empty containers set forth in s. NR 661.07 (2).

(2) Significant discrepancies in quantity are, for bulk waste, variations greater than 10% in weight, and for batch waste, any variation in piece count, such as a discrepancy of one drum in a truckload. Significant discrepancies in type are obvious differences which can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid or toxic constituents not reported on the manifest or shipping paper.

(3) Upon discovering a significant discrepancy, the owner or operator shall attempt to reconcile the discrepancy with the waste generator or transporter (e.g., with telephone conversations). If the discrepancy is not resolved within 15 days after receiving the waste, the owner or operator shall immediately submit to the department a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipping paper at issue.

(4) (a) Upon rejecting waste or identifying a container residue that exceeds the quantity limits for empty containers set forth in s. NR 661.07 (2), the facility owner or operator shall consult with the generator prior to forwarding the waste to another facility that can manage the waste. If it is impossible to locate an alternative facility that can receive the waste, the facility owner or operator may return the rejected waste or residue to the generator. The facility owner or operator shall send the waste to the alternative facility or to the generator within 60 days of the rejection or the container residue identification.

(b) While the facility owner or operator is making arrangements for forwarding rejected wastes or residues to another facility under this section, it shall ensure that either the delivering transporter retains custody of the waste, or the facility owner or operator shall provide for secure, temporary custody of the waste, pending delivery of the waste to the first transporter designated on the manifest prepared under sub. (5) or (6).

(5) Except as provided in par. (g), for full or partial load rejections and residues that are to be sent off−site to an alternate facility, the facility owner or operator shall prepare a new manifest in accordance with s. NR 662.020 (1) and the following instructions:

(a) Write the generator's EPA ID number in Item 1 of the new manifest. Write the generator's name and mailing address in Item 5 of the new manifest. If the mailing address is different from the generator's site address, then write the generator's site address in the designated space for Item 5.

(b) Write the name of the alternate designated facility and the facility's EPA ID number in the designated facility block (Item 8) of the new manifest.

(c) Copy the manifest tracking number found in Item 4 of the old manifest to the special handling and additional information block of the new manifest, and indicate that the shipment is a residue or rejected waste from the previous shipment.

(d) Copy the manifest tracking number found in Item 4 of the new manifest to the manifest reference number line in the discrepancy block of the old manifest (Item 18a).

(e) Write the DOT description for the rejected load or the residue in Item 9 (U.S. DOT description) of the new manifest and write the container types, quantity and volume of waste.

(f) Sign the generator's or offeror's certification to certify, as the offeror of the shipment, that the waste has been properly packaged, marked and labeled and is in proper condition for transportation.

(g) For full load rejections that are made while the transporter remains present at the facility, the facility owner or operator may forward the rejected shipment to the alternate facility by completing Item 18b of the original manifest and supplying the information on the next destination facility in the alternate facility space. The facility owner or operator shall retain a copy of this manifest for its records, and then give the remaining copies of the manifest to the transporter to accompany the shipment. If the original manifest is not used, then the facility owner or operator shall use a new manifest and comply with pars. (a) to (f).

(6) Except as provided in par. (g), for rejected wastes and residues that must be sent back to the generator, the facility owner or operator shall prepare a new manifest in accordance with s. NR 662.020 (1) and the following instructions:

(a) Write the facility's EPA ID number in Item 1 of the new manifest. Write the generator's name and mailing address in Item 5 of the new manifest. If the mailing address is different from the generator's site address, then write the generator's site address in the designated space for Item 5.

(b) Write the name of the initial generator and the generator's EPA ID number in the designated facility block (Item 8) of the new manifest.

(c) Copy the manifest tracking number found in Item 4 of the old manifest to the special handling and additional information block of the new manifest, and indicate that the shipment is a residue or rejected waste from the previous shipment.

(d) Copy the manifest tracking number found in Item 4 of the new manifest to the manifest reference number line in the discrepancy block of the old manifest (Item 18a).

(e) Write the DOT description for the rejected load or the residue in Item 9 (U.S. DOT Description) of the new manifest and write the container types, quantity and volume of waste.

(f) Sign the generator's or offeror's certification to certify, as offeror of the shipment, that the waste has been properly packaged, marked and labeled and is in proper condition for transportation.

(g) For full load rejections that are made while the transporter remains at the facility, the facility owner or operator may return the shipment to the generator with the original manifest by completing Item 18a and 18b of the manifest and supplying the generator's information in the alternate facility space. The facility owner or operator shall retain a copy for its records and then give the remaining copies of the manifest to the transporter to accompany the shipment. If the original manifest is not used, then the facility owner or operator shall use a new manifest and comply with pars. (a) to (f).

(7) If a facility owner or operator rejects a waste or identifies a container residue that exceeds the quantity limits for empty containers set forth in s. NR 661.07 (2) after it has signed, dated and returned a copy of the manifest to the delivering transporter or to the generator, the facility owner or operator shall amend its copy of the manifest to indicate the rejected wastes or residues in the discrepancy space of the amended manifest. The facility owner or operator shall also copy the manifest tracking number from Item 4 of the new manifest to the discrepancy space of the amended manifest, and shall re−sign and date the manifest to certify to the information as amended. The facility owner or operator shall retain the amended manifest for at least 3 years from the date of amendment and shall, within 30 days, send a copy of the amended manifest to the transporter and generator that received copies prior to their being amended. Within 45 days, the facility owner or operator shall also send one copy of the amended manifest to the department in an electronic format specified by the department.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; CR 06−102: am. Register March 2007 No. 615, eff. 4−1−07.

NR 664.0073 Operating record. (1) The owner or operator shall keep a written operating record at the facility.

(2) All of the following information shall be recorded, as it becomes available, and maintained in the operating record until closure of the facility:

(a) A description and the quantity of each hazardous waste received, and the methods and dates of its treatment, storage or disposal at the facility as required by ch. NR 664 Appendix I.

(b) The location of each hazardous waste within the facility and the quantity at each location. For disposal facilities, the location and quantity of each hazardous waste shall be recorded on a map or diagram of each cell or disposal area. For all facilities, this information shall include cross−references to specific manifest document numbers, if the waste was accompanied by a manifest.

Note: See s. NR 664.0119 for related requirements.

(c) Records and results of waste analyses and waste determinations performed as specified in ss. NR 664.0013, 664.0017,

664.0314, 664.0341, 664.1034, 664.1063, 664.1083, 668.04 (1) and 668.07.

(d) Summary reports and details of all incidents that require implementing the contingency plan as specified in s. NR 664.0056 (10).

(e) Records and results of inspections as required by s. NR 664.0015 (4) (except these data need be kept only 3 years).

(f) Monitoring, testing or analytical data, and corrective action where required by subch. F and ss. NR 664.0019, 664.0191, 664.0193, 664.0195, 664.0222, 664.0223, 664.0226, 664.0252 to 664.0254, 664.0302 to 664.0304, 664.0309, 664.0347, 664.0602, 664.1034 (3) to (6), 664.1035, 664.1063 (4) to (9), 664.1064 and 664.1082 to 664.1090.

(g) For off−site facilities, notices to generators as specified in s. NR 664.0012 (2).

(h) All closure cost estimates under s. NR 664.0142, and, for disposal facilities, all long−term care cost estimates under s. NR 664.0144.

(i) A certification by the licensee no less often than annually, that the licensee has a program in place to reduce the volume and toxicity of hazardous waste generated at the facility to the degree determined by the licensee to be economically practicable; and the proposed method of treatment, storage or disposal is that practicable method currently available to the licensee which minimizes the present and future threat to human health and the environment.

(j) Records of the quantities (and date of placement) for each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted pursuant to s. NR 668.05 or a petition pursuant to s. NR 668.06, and the applicable notice required by a generator under s. NR 668.07 (1).

(k) For an off−site treatment facility, a copy of the notice required by the generator or the owner or operator under s. NR 668.07.

(L) For an on−site treatment facility, the information contained in the notice (except the manifest number) required by the generator or the owner or operator under s. NR 668.07.

(m) For an off−site land disposal facility, a copy of the notice required by the generator or the owner or operator of a treatment facility under s. NR 668.07.

(n) For an on−site land disposal facility, the information contained in the notice required by the generator or owner or operator of a treatment facility under s. NR 668.07, except for the manifest number.

(o) For an off−site storage facility, a copy of the notice required by the generator or the owner or operator under s. NR 668.07.

(p) For an on−site storage facility, the information contained in the notice (except the manifest number) required by the generator or the owner or operator under s. NR 668.07.

(q) Any records required under s. NR 664.0001 (10) (m).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; **correction in (2) (a) made under s. 13.92 (4) (b) 7., Stats., Register March 2013 No. 687.**

NR 664.0074 Availability, retention and disposition of records. (1) All records, including plans, required under this chapter shall be furnished upon request, and made available at all reasonable times for inspection, by any officer, employee or representative of the department.

(2) The retention period for all records required under this chapter is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the department.

(3) A copy of records of waste disposal locations and quantities under s. NR 664.0073 (2) (b) shall be submitted to the department and local land authority upon closure of the facility.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0075 Annual report. The owner or operator shall prepare and submit a single copy of an annual report to the department by March 1 of each year. The annual report shall be submitted on department forms, shall cover facility activities during the previous calendar year and shall, at a minimum, include all of the following:

(1) The EPA identification number, name and address of the facility.

(2) The calendar year covered by the report.

(3) For off−site facilities, the EPA identification number of each hazardous waste generator from which the facility received a hazardous waste during the year. For imported shipments, the report shall give the name and address of the foreign generator.

(4) A description and the quantity of each hazardous waste the facility received during the year. For off−site facilities, this information shall be listed by EPA identification number of each generator.

(5) The method of treatment, storage or disposal for each hazardous waste.

(7) The most recent closure cost estimate under s. NR 664.0142, and, for disposal facilities, the most recent long−term care cost estimate under s. NR 664.0144.

(8) For generators who treat, store or dispose of hazardous waste on−site, a description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated.

(9) For generators who treat, store or dispose of hazardous waste on−site, a description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent the information is available for the years prior to 1984.

(10) The certification signed by the owner or operator of the facility or an authorized representative.

Note: Information on annual reporting is available at: http://dnr.wi.gov/topic/Waste/AnnualReport.html.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0076 Unmanifested waste report. (1) If a facility accepts for treatment, storage or disposal any hazardous waste from an off−site source without an accompanying manifest, or without an accompanying shipping paper as described in s. NR 663.20 (5), and if the waste is not excluded from the manifest requirement by chs. NR 660 to 679, then the owner or operator shall prepare and submit a report to the department within 15 days after receiving the waste. The unmanifested waste report shall contain all of the following information:

(a) The EPA identification number, name and address of the facility.

(b) The date the facility received the waste.

(c) The EPA identification number, name and address of the generator and the transporter, if available.

(d) A description and the quantity of each unmanifested hazardous waste the facility received.

(e) The method of treatment, storage or disposal for each hazardous waste.

(f) The certification signed by the owner or operator of the facility or an authorized representative.

(g) A brief explanation of why the waste was unmanifested, if known.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; CR 06−102: am. Register March 2007 No. 615, eff. 4−1−07.

NR 664.0077 Additional reports. In addition to submitting the annual reports and unmanifested waste reports described in ss. NR 664.0075 and 664.0076, the owner or operator shall also report all of the following to the department:

(1) Releases, fires and explosions as specified in s. NR 664.0056 (10).

(2) Facility closures specified in s. NR 664.0115.

(3) Other information as required by subchs. F, K to N, AA, BB and CC.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter F —Releases From Solid Waste Management Units

NR 664.0090 Applicability.

Note: Groundwater monitoring requirements in chs. NR 140 and 141 also apply.

(1) (a) Except as provided in sub. (2), this subchapter applies to owners or operators of facilities that treat, store or dispose of hazardous waste. The owner or operator shall satisfy the requirements identified in par. (b) for all wastes (or constituents thereof) contained in solid waste management units at the facility, regardless of the time at which waste was placed in the units.

(b) All solid waste management units shall comply with the requirements in s. NR 664.0101. A surface impoundment or waste pile unit or landfill that receives hazardous waste after July 26, 1982 (in this subchapter, referred to as a "regulated unit") shall comply with the requirements of ss. NR 664.0091 to 664.0100 in lieu of s. NR 664.0101 for purposes of detecting, characterizing and responding to releases to the uppermost aquifer. The financial responsibility requirements of s. NR 664.0101 apply to regulated units.

(2) The owner or operator's regulated unit or units are not regulated for releases into the uppermost aquifer under this subchapter if any of the following apply:

(a) The owner or operator is exempted under s. NR 664.0001.

(b) The owner or operator operates a unit which the department finds meets all of the following conditions:

1. Is an engineered structure.

2. Does not receive or contain liquid waste or waste containing free liquids.

3. Is designed and operated to exclude liquid, precipitation and other run−on and run−off.

4. Has both inner and outer layers of containment enclosing the waste.

5. Has a leak detection system built into each containment layer.

6. The owner or operator shall provide continuing operation and maintenance of these leak detection systems during the active life of the unit and the closure and long−term care periods.

7. To a reasonable degree of certainty, shall not allow hazardous constituents to migrate beyond the outer containment layer prior to the end of the long−term care period.

(d) The department finds that there is no potential for migration of liquid from a regulated unit to the uppermost aquifer during the active life of the regulated unit (including the closure period) and the long−term care period specified under s. NR 664.0117. A qualified geologist or geotechnical engineer shall certify this demonstration. In order to provide an adequate margin of safety in the prediction of potential migration of liquid, the owner or operator shall base any predictions made under this paragraph on assumptions that maximize the rate of liquid migration.

(e) The owner or operator designs and operates a pile in compliance with s. NR 664.0250 (3).

(3) This subchapter applies during the active life of the regulated unit (including the closure period). After closure of the regulated unit, this subchapter:

(a) Does not apply if all waste, waste residues, contaminated containment system components and contaminated subsoils are removed or decontaminated at closure.

(b) Applies during the long−term care period under s. NR 664.0117 if the owner or operator is conducting a detection monitoring program under s. NR 664.0098.

(c) Applies during the compliance period under s. NR 664.0096 if the owner or operator is conducting a compliance monitoring program under s. NR 664.0099 or a corrective action program under s. NR 664.0100.

(4) This subchapter may apply to miscellaneous units when necessary to comply with ss. NR 664.0601 to 664.0603.

(5) This subchapter applies to all owners and operators subject to s. NR 670.001 (3) (g), when the department issues either a long−term care license or an enforceable document (as defined in s. NR 670.001 (3) (g)) at the facility. When the department issues an enforceable document, references in this subchapter to "in the license" mean "in the enforceable document".

(6) The department may replace all or part of the requirements of ss. NR 664.0091 to 664.0100 applying to a regulated unit with alternative requirements for groundwater monitoring and corrective action for releases to groundwater set out in the license (or in an enforceable document) (as defined in s. NR 670.001 (3) (g)) where the department determines that all of the following apply:

(a) The regulated unit is situated among solid waste management units (or areas of concern), a release has occurred and both the regulated unit and one or more solid waste management units (or areas of concern) are likely to have contributed to the release.

(b) It is not necessary to apply the groundwater monitoring and corrective action requirements of ss. NR 664.0091 to 664.0100 because alternative requirements will protect human health and the environment.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0091 Required programs. (1) Owners and operators subject to this subchapter shall conduct a monitoring and response program according to the following:

(a) Whenever hazardous constituents under s. NR 664.0093 from a regulated unit are detected at a point of standards application under s. NR 664.0095, the owner or operator shall institute a compliance monitoring program under s. NR 664.0099. Detected is defined as statistically significant evidence of contamination as described in s. NR 664.0098 (6).

(b) Whenever the groundwater protection standard under s. NR 664.0092 is exceeded, the owner or operator shall institute a corrective action program under s. NR 664.0100. Exceeded is defined as statistically significant evidence of increased contamination as described in s. NR 664.0099 (4).

(c) Whenever hazardous constituents under s. NR 664.0093 from a regulated unit exceed concentration limits under s. NR 664.0094 in groundwater between the point of standards application under s. NR 664.0095 and the downgradient facility property boundary, the owner or operator shall institute a corrective action program under s. NR 664.0100.

(d) In all other cases, the owner or operator shall institute a detection monitoring program under s. NR 664.0098.

(e) Chemical and physical samples shall be analyzed by a laboratory certified or registered under ch. NR 149, except for field analyses for pH, specific conductance and temperature.

(2) The department shall specify in the facility license the specific elements of the monitoring and response program. The department may include one or more of the programs identified in sub. (1) in the facility license as may be necessary to protect human health and the environment and shall specify the circumstances under which each of the programs will be required. In deciding whether to require the owner or operator to be prepared to institute a particular program, the department shall consider the potential adverse effects on human health and the environment that might occur before final administrative action on an application to modify the license to incorporate such a program could be taken.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0092 Groundwater protection standard. The owner or operator shall comply with conditions specified in the facility license that are designed to ensure that hazardous constitu-

ents under s. NR 664.0093 detected in the groundwater from a regulated unit do not exceed the concentration limits under s. NR 664.0094 or the enforcement standards listed in ch. NR 140, whichever are more stringent, in the uppermost aquifer underlying the waste management area beyond the point of standards application under s. NR 664.0095 during the compliance period under s. NR 664.0096. The department shall establish this groundwater protection standard in the license when hazardous constituents have been detected in the groundwater.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0093 Hazardous constituents. (1) The department shall specify in the facility license the hazardous constituents to which the groundwater protection standard of s. NR 664.0092 applies. Hazardous constituents are constituents identified in ch. NR 661 Appendix VIII, that have been detected in groundwater in the uppermost aquifer underlying a regulated unit and that are reasonably expected to be in or derived from waste contained in a regulated unit, unless the department has excluded them under sub. (2).

(2) The department shall exclude a ch. NR 661 Appendix VIII constituent from the list of hazardous constituents specified in the license if it finds that the constituent is not capable of posing a substantial present or potential hazard to human health or the environment. In deciding whether to grant an exemption, the department shall consider all of the following:

(a) Potential adverse effects on groundwater quality, considering all of the following:

1. The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration.

2. The hydrogeological characteristics of the facility and surrounding land.

3. The quantity of groundwater and the direction of groundwater flow.

4. The proximity and withdrawal rates of groundwater users.

5. The current and future uses of groundwater in the area.

6. The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater quality.

7. The potential for health risks caused by human exposure to waste constituents.

8. The potential damage to wildlife, crops, vegetation and physical structures caused by exposure to waste constituents.

9. The persistence and permanence of the potential adverse effects.

(b) Potential adverse effects on hydraulically−connected surface water quality, considering all of the following:

1. The volume and physical and chemical characteristics of the waste in the regulated unit.

2. The hydrogeological characteristics of the facility and surrounding land.

3. The quantity and quality of groundwater, and the direction of groundwater flow.

4. The patterns of rainfall in the region.

5. The proximity of the regulated unit to surface waters.

6. The current and future uses of surface waters in the area and any water quality standards established for those surface waters.

7. The existing quality of surface water, including other sources of contamination and the cumulative impact on surface−water quality.

8. The potential for health risks caused by human exposure to waste constituents.

9. The potential damage to wildlife, crops, vegetation and physical structures caused by exposure to waste constituents.

10. The persistence and permanence of the potential adverse effects.

(2m) The department may not grant an exclusion under sub. (2) that would allow a violation of ch. NR 140 enforcement standards, except as provided by s. NR 140.28.

(3) In making any determination under sub. (2) about the use of groundwater in the area around the facility, the department shall consider any identification of underground sources of drinking water and exempted aquifers made under 40 CFR 144.7.

Note: There are no exempted aquifers in Wisconsin.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0094 Concentration limits. (1) The department shall specify in the facility license concentration limits in the groundwater for hazardous constituents established under s. NR 664.0093. The concentration that is specified for a hazardous constituent shall meet the following conditions:

(a) May not exceed the background level of that constituent in the groundwater at the time that the limit is specified in the license.

(b) For any of the constituents listed in Table 1, may not exceed the respective value given in that table if the background level of the constituent is below the value given in Table 1.

Table 1
Maximum Concentration of Constituents for Groundwater Protection

Constituent	Maximum concentration[1]
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Lead	0.05
Mercury	0.002
Selenium	0.01
Silver	0.05
Endrin (1,2,3,4,10,10−Hexachloro−1,7−epoxy 1,4,4a,5,6,7,8,9a−octahydro−1,4−endo, endo−5,8−dimethanonaphthalene)	0.0002
Lindane (1,2,3,4,5,6−Hexachlorocyclohexane, gamma isomer)	0.004
Methoxychlor (1,1,1−Trichloro−2,2−bis (p−methoxyphenylethane)	0.1
Toxaphene ($C_{10}H_{10}Cl_8$, Technical chlorinated camphene, 67−69 percent chlorine)	0.005
2,4−D (2,4−Dichlorophenoxyacetic acid)	0.1
2,4,5−TP Silvex (2,4,5−Trichlorophenoxypropionic acid)	0.01

[1] Milligrams per liter.

(c) May not exceed an alternate limit established by the department under sub. (2).

(d) May not exceed the enforcement standards established under ch. NR 140, except as provided by s. NR 140.28.

(2) The department shall establish an alternate concentration limit for a hazardous constituent if it finds that the constituent will not pose a substantial present or potential hazard to human health or the environment as long as the alternate concentration limit is not exceeded. In establishing alternate concentration limits, the department shall consider all of the following factors:

(a) Potential adverse effects on groundwater quality, considering all of the following:

1. The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration.

2. The hydrogeological characteristics of the facility and surrounding land.

3. The quantity of groundwater and the direction of groundwater flow.

4. The proximity and withdrawal rates of groundwater users.

5. The current and future uses of groundwater in the area.

6. The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater quality.

7. The potential for health risks caused by human exposure to waste constituents.

8. The potential damage to wildlife, crops, vegetation and physical structures caused by exposure to waste constituents.

9. The persistence and permanence of the potential adverse effects.

(b) Potential adverse effects on hydraulically−connected surface−water quality, considering all of the following:

1. The volume and physical and chemical characteristics of the waste in the regulated unit.

2. The hydrogeological characteristics of the facility and surrounding land.

3. The quantity and quality of groundwater, and the direction of groundwater flow.

4. The patterns of rainfall in the region.

5. The proximity of the regulated unit to surface waters.

6. The current and future uses of surface waters in the area and any water quality standards established for those surface waters.

7. The existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality.

8. The potential for health risks caused by human exposure to waste constituents.

9. The potential damage to wildlife, crops, vegetation and physical structures caused by exposure to waste constituents.

10. The persistence and permanence of the potential adverse effects.

(2m) The department may not establish an alternate concentration limit under sub. (2) that is inconsistent with ch. NR 140.

(3) In making any determination under sub. (2) about the use of groundwater in the area around the facility the department shall consider any identification of underground sources of drinking water and exempted aquifers made under 40 CFR 144.7.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0095 Point of standards application. (1) The department shall specify in the facility license the point of standards application at which the groundwater protection standard of s. NR 664.0092 applies and at which monitoring shall be conducted. The point of standards application is a vertical surface located at the hydraulically downgradient limit of the waste management area that extends down into the uppermost aquifer underlying the regulated units.

(2) The waste management area is the limit projected in the horizontal plane of the area on which waste will be placed during the active life of a regulated unit.

(a) The waste management area includes horizontal space taken up by any liner, dike or other barrier designed to contain waste in a regulated unit.

(b) If the facility contains more than one regulated unit, an imaginary line circumscribing the several regulated units describes the waste management area.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0096 Compliance period. (1) The department shall specify in the facility license the compliance period during which the groundwater protection standard of s. NR 664.0092 applies. The compliance period is the number of years equal to the active life of the waste management area (including any waste management activity prior to licensing, and the closure period.)

(2) The compliance period begins when the owner or operator initiates a compliance monitoring program meeting the requirements of s. NR 664.0099.

(3) If the owner or operator is engaged in a corrective action program at the end of the compliance period specified in sub. (1), the compliance period is extended until the owner or operator can demonstrate that the groundwater protection standard of s. NR 664.0092 has not been exceeded for a period of 3 consecutive years.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0097 General groundwater monitoring requirements. The owner or operator shall comply with the following requirements for any groundwater monitoring program developed to satisfy s. NR 664.0098, 664.0099 or 664.0100:

(1) The groundwater monitoring system shall consist of a sufficient number of wells, installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that do all of the following:

(a) Represent the quality of background water that has not been affected by leakage from a regulated unit. A determination of background quality may include sampling of wells that are not hydraulically upgradient of the waste management area where all of the following conditions are met:

1. Hydrogeologic conditions do not allow the owner or operator to determine what wells are hydraulically upgradient.

2. Sampling at other wells shall provide an indication of background groundwater quality that is representative or more representative than that provided by the upgradient wells.

(b) Represent the quality of groundwater passing the point of standards application.

(c) Allow for the detection of contamination when hazardous waste or hazardous constituents have migrated from the waste management area to the uppermost aquifer.

(2) If a facility contains more than one regulated unit, separate groundwater monitoring systems are not required for each regulated unit provided that provisions for sampling the groundwater in the uppermost aquifer will enable detection and measurement at the point of standards application of hazardous constituents from the regulated units that have entered the groundwater in the uppermost aquifer.

(3) All monitoring wells shall be cased in a manner that maintains the integrity of the monitoring−well bore hole. This casing shall be screened or perforated and packed with gravel or sand, where necessary, to enable collection of groundwater samples. The annular space (i.e., the space between the bore hole and well casing) above the sampling depth shall be sealed to prevent contamination of samples and the groundwater.

(4) The groundwater monitoring program shall include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide a reliable indication of groundwater quality below the waste management area. At a minimum the program shall include procedures and techniques for all of the following:

(a) Sample collection.

(b) Sample preservation and shipment.

(c) Analytical procedures.

(d) Chain of custody control.

(5) The groundwater monitoring program shall include sampling and analytical methods that are appropriate for groundwater sampling and that accurately measure hazardous constituents in groundwater samples.

(6) The groundwater monitoring program shall include a determination of the groundwater surface elevation each time groundwater is sampled.

(7) In detection monitoring or where appropriate in compliance monitoring, data on each hazardous constituent specified

in the license shall be collected from background wells and wells at the points of standards applications. The number and kinds of samples collected to establish background shall be appropriate for the form of statistical test employed, following generally accepted statistical principles. The sample size shall be as large as necessary to ensure with reasonable confidence that a contaminant release to groundwater from a facility will be detected. The owner or operator shall determine an appropriate sampling procedure and interval for each hazardous constituent listed in the facility license which shall be specified in the unit license upon approval by the department. This sampling procedure shall be any of the following:

(a) A sequence of at least 4 samples, taken at an interval that assures, to the greatest extent technically feasible, that an independent sample is obtained, by reference to the uppermost aquifer's effective porosity, hydraulic conductivity and hydraulic gradient, and the fate and transport characteristics of the potential contaminants.

(b) An alternate sampling procedure proposed by the owner or operator and approved by the department.

(8) The owner or operator shall specify one of the following statistical methods to be used in evaluating groundwater monitoring data for each hazardous constituent which, upon approval by the department, shall be specified in the unit license. The statistical test chosen shall be conducted separately for each hazardous constituent in each well. Where practical quantification limits (pql's) are used in any of the following statistical procedures to comply with sub. (9) (e), the pql shall be proposed by the owner or operator and approved by the department. Use of any of the following statistical methods shall be protective of human health and the environment and shall comply with the performance standards outlined in sub. (9).

(a) A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method shall include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent.

(b) An analysis of variance (ANOVA) based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method shall include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent.

(c) A tolerance or prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit.

(d) A control chart approach that gives control limits for each constituent.

(e) Another statistical test method submitted by the owner or operator and approved by the department.

(9) Any statistical method chosen under sub. (8) for specification in the unit license shall comply with all of the following performance standards, as appropriate:

(a) The statistical method used to evaluate groundwater monitoring data shall be appropriate for the distribution of chemical parameters or hazardous constituents. If the distribution of the chemical parameters or hazardous constituents is shown by the owner or operator to be inappropriate for a normal theory test, then the data should be transformed or a distribution−free theory test should be used. If the distributions for the constituents differ, more than one statistical method may be needed.

(b) If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a groundwater protection standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I experiment wise error rate for each testing period shall be no less than 0.05; however, the Type I error of no less than 0.01 for individual well comparisons shall be maintained. This performance standard does not apply to tolerance intervals, prediction intervals or control charts.

(c) If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter values shall be proposed by the owner or operator and approved by the department if it finds them to be protective of human health and the environment.

(d) If a tolerance interval or a prediction interval is used to evaluate groundwater monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval must contain, shall be proposed by the owner or operator and approved by the department if it finds these parameters to be protective of human health and the environment. These parameters shall be determined after considering the number of samples in the background database, the data distribution and the range of the concentration values for each constituent of concern.

(e) The statistical method shall account for data below the limit of detection with one or more statistical procedures that are protective of human health and the environment. Any practical quantification limit (pql) approved by the department under sub. (8) that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.

(f) If necessary, the statistical method shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

(10) Groundwater monitoring data collected in accordance with sub. (7) including actual levels of constituents shall be maintained in the facility operating record. The department shall specify in the license when the data must be submitted for review.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0098 Detection monitoring program. An owner or operator required to establish a detection monitoring program under this subchapter shall, at a minimum, discharge all of the following responsibilities:

(1) The owner or operator shall monitor for indicator parameters (e.g., specific conductance, total organic carbon or total organic halogen), waste constituents or reaction products that provide a reliable indication of the presence of hazardous constituents in groundwater. The department shall specify the parameters or constituents to be monitored in the facility license, after considering all of the following factors:

(a) The types, quantities and concentrations of constituents in wastes managed at the regulated unit.

(b) The mobility, stability and persistence of waste constituents or their reaction products in the unsaturated zone beneath the waste management area.

(c) The detectability of indicator parameters, waste constituents and reaction products in groundwater.

(d) The concentrations or values and coefficients of variation of proposed monitoring parameters or constituents in the groundwater background.

(2) The owner or operator shall install a groundwater monitoring system at the point of standards application as specified under s. NR 664.0095. The groundwater monitoring system shall comply with s. NR 664.0097 (1) (b), (2) and (3).

(3) The owner or operator shall conduct a groundwater monitoring program for each chemical parameter and hazardous constituent specified in the license pursuant to sub. (1) in accordance with s. NR 664.0097 (7). The owner or operator shall maintain a record of groundwater analytical data as measured and in a form necessary for the determination of statistical significance under s. NR 664.0097 (8).

(4) The department shall specify the frequencies for collecting samples and conducting statistical tests to determine whether there is statistically significant evidence of contamination for any parameter or hazardous constituent specified in the license under sub. (1) in accordance with s. NR 664.0097 (7). A sequence of at least 4 samples from each well (background and compliance wells) shall be collected at least semi−annually during detection monitoring.

(5) The owner or operator shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually.

(6) The owner or operator shall determine whether there is statistically significant evidence of contamination for any chemical parameter or hazardous constituent specified in the license pursuant to sub. (1) at a frequency specified under sub. (4).

(a) In determining whether statistically significant evidence of contamination exists, the owner or operator shall use the methods specified in the license under s. NR 664.0097 (8). These methods shall compare data collected at the points of standards applications to the background groundwater quality data.

(b) The owner or operator shall determine whether there is statistically significant evidence of contamination at each monitoring well at the point of standards application within a reasonable period of time after completion of sampling. The department shall specify in the facility license what period of time is reasonable, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of groundwater samples.

(7) If the owner or operator determines pursuant to sub. (6) that there is statistically significant evidence of contamination for chemical parameters or hazardous constituents specified pursuant to sub. (1) at any monitoring well at the point of standards application, the owner or operator shall do all of the following:

(a) Notify the department of this finding in writing within 7 days. The notification shall indicate what chemical parameters or hazardous constituents have shown statistically significant evidence of contamination.

(b) Immediately sample the groundwater in all monitoring wells and determine whether constituents in the list of ch. NR 664 Appendix IX are present, and if so, in what concentration.

(c) For any ch. NR 664 Appendix IX compounds found in the analysis pursuant to par. (b), the owner or operator may resample within one month and repeat the analysis for those compounds detected. If the results of the second analysis confirm the initial results, then these constituents will form the basis for compliance monitoring. If the owner or operator does not resample for the compounds found pursuant to par. (b), the hazardous constituents found during this initial ch. NR 664 Appendix IX analysis will form the basis for compliance monitoring.

(d) Within 90 days, submit to the department an application to modify the license to establish a compliance monitoring program meeting the requirements of s. NR 664.0099. The application shall include all of the following information:

1. An identification of the concentration of any ch. NR 664 Appendix IX constituent detected in the groundwater at each monitoring well at the point of standards application.

2. Any proposed changes to the groundwater monitoring system at the facility necessary to meet the requirements of s. NR 664.0099.

3. Any proposed additions or changes to the monitoring frequency, sampling and analysis procedures or methods, or statistical methods used at the facility necessary to meet the requirements of s. NR 664.0099.

4. For each hazardous constituent detected at the point of standards application, a proposed concentration limit under s. NR 664.0094 (1) (a) or (b), or a notice of intent to seek an alternate concentration limit under s. NR 664.0094 (2).

(e) Within 180 days, submit to the department all of the following:

1. All data necessary to justify an alternate concentration limit sought under s. NR 664.0094 (2).

2. An engineering feasibility plan for a corrective action program necessary to meet the requirement of s. NR 664.0100, unless any of the following conditions are met:

a. All hazardous constituents identified under par. (b) are listed in s. NR 664.0094, Table 1, and their concentrations do not exceed the respective values given in that table.

b. The owner or operator has sought an alternate concentration limit under s. NR 664.0094 (2) for every hazardous constituent identified under par. (b).

(f) If the owner or operator determines, pursuant to sub. (6), that there is a statistically significant difference for chemical parameters or hazardous constituents specified pursuant to sub. (1) at any monitoring well at the point of standards application, owner or operator may demonstrate that a source other than a regulated unit caused the contamination or that the detection is an artifact caused by an error in sampling, analysis or statistical evaluation or natural variation in the groundwater. The owner or operator may make a demonstration under this paragraph in addition to, or in lieu of, submitting an application to modify the license under par. (d); however, the owner or operator is not relieved of the requirement to submit an application to modify the license within the time specified in par. (d) unless the demonstration made under this paragraph successfully shows that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis or evaluation. In making a demonstration under this paragraph, the owner or operator shall do all of the following:

1. Notify the department in writing within 7 days of determining statistically significant evidence of contamination at the point of standards application that the owner or operator intends to make a demonstration under this paragraph.

2. Within 90 days, submit a report to the department which demonstrates that a source other than a regulated unit caused the contamination or that the contamination resulted from error in sampling, analysis or evaluation.

3. Within 90 days, submit to the department an application to modify the license to make any appropriate changes to the detection monitoring program for the facility.

4. Continue to monitor in accordance with the detection monitoring program established under this section.

(8) If the owner or operator determines that the detection monitoring program no longer satisfies the requirements of this section, owner or operator shall, within 90 days, submit an application to modify the license to make any appropriate changes to the program.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; **corrections in (7) (b), (c), (d) 1. made under s. 13.92 (4) (b) 7., Stats., Register March 2013 No. 687.**

NR 664.0099 Compliance monitoring program. An owner or operator required to establish a compliance monitoring program under this subchapter shall, at a minimum, do all of the following:

(1) The owner or operator shall monitor the groundwater to determine whether regulated units are in compliance with the groundwater protection standard under s. NR 664.0092. The department shall specify the groundwater protection standard in the facility license, including all of the following:

(a) A list of the hazardous constituents identified under s. NR 664.0093.

(b) Concentration limits under s. NR 664.0094 for each of those hazardous constituents.

(c) The point of standards application under s. NR 664.0095.

(d) The compliance period under s. NR 664.0096.

(2) The owner or operator shall install a groundwater monitoring system at the point of standards application as specified under s. NR 664.0095. The groundwater monitoring system shall comply with s. NR 664.0097 (1) (b), (2) and (3).

(3) The department shall specify the sampling procedures and statistical methods appropriate for the constituents and the facility, consistent with s. NR 664.0097 (7) and (8).

(a) The owner or operator shall conduct a sampling program for each chemical parameter or hazardous constituent in accordance with s. NR 664.0097 (7).

(b) The owner or operator shall record groundwater analytical data as measured and in form necessary for the determination of statistical significance under s. NR 664.0097 (8) for the compliance period of the facility.

(4) The owner or operator shall determine whether there is statistically significant evidence of increased contamination for any chemical parameter or hazardous constituent specified in the license, pursuant to sub. (1), at a frequency specified under sub. (6).

(a) In determining whether statistically significant evidence of increased contamination exists, the owner or operator shall use the methods specified in the license under s. NR 664.0097 (8). The methods shall compare data collected at the points of standards applications to a concentration limit developed in accordance with s. NR 664.0094.

(b) The owner or operator shall determine whether there is statistically significant evidence of increased contamination at each monitoring well at the point of standards application within a reasonable time period after completion of sampling. The department shall specify that time period in the facility license, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of groundwater samples.

(5) The owner or operator shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually.

(6) The department shall specify the frequencies for collecting samples and conducting statistical tests to determine statistically significant evidence of increased contamination in accordance with s. NR 664.0097 (7). A sequence of at least 4 samples from each well (background and compliance wells) shall be collected at least semi−annually during the compliance period of the facility.

(7) The owner or operator shall analyze samples from all monitoring wells at the point of standards application for all constituents contained in ch. NR 664 Appendix IX at least annually to determine whether additional hazardous constituents are present in the uppermost aquifer and, if so, at what concentration, pursuant to procedures in s. NR 664.0098 (6). If the owner or operator finds ch. NR 664 Appendix IX constituents in the groundwater that are not already identified in the license as monitoring constituents, the owner or operator may resample within one month and repeat the ch. NR 664 Appendix IX analysis. If the second analysis confirms the presence of new constituents, the owner or operator shall report the concentration of these additional constituents to the department within 7 days after the completion of the second analysis and add them to the monitoring list. If the owner or operator chooses not to resample, then the owner or operator shall report the concentrations of these additional constituents to the department within 7 days after completion of the initial analysis and add them to the monitoring list.

(8) If the owner or operator determines pursuant to sub. (4) that any concentration limits under s. NR 664.0094 are being exceeded at any monitoring well at the point of standards application the owner or operator shall do all of the following:

(a) Notify the department of this finding in writing within 7 days. The notification shall indicate what concentration limits have been exceeded.

(b) Submit to the department an application to modify the license to establish a corrective action program meeting the requirements of s. NR 664.0100 within 180 days, or within 90 days if an engineering feasibility study has been previously submitted to the department under s. NR 664.0098 (7) (e). The application shall at a minimum include all of the following information:

1. A detailed description of corrective actions that will achieve compliance with the groundwater protection standard specified in the license under sub. (1).

2. A plan for a groundwater monitoring program that will demonstrate the effectiveness of the corrective action. Such a groundwater monitoring program may be based on a compliance monitoring program developed to meet the requirements of this section.

(9) If the owner or operator determines, pursuant to sub. (4), that the groundwater concentration limits under this section are being exceeded at any monitoring well at the point of standards application, the owner or operator may demonstrate that a source other than a regulated unit caused the contamination or that the detection is an artifact caused by an error in sampling, analysis or statistical evaluation or natural variation in the groundwater. In making a demonstration under this subsection, the owner or operator shall do all of the following:

(a) Notify the department in writing within 7 days that the owner or operator intends to make a demonstration under this subsection.

(b) Within 90 days, submit a report to the department which demonstrates that a source other than a regulated unit caused the standard to be exceeded or that the apparent noncompliance with the standards resulted from error in sampling, analysis or evaluation.

(c) Within 90 days, submit to the department an application to modify the license to make any appropriate changes to the compliance monitoring program at the facility.

(d) Continue to monitor in accord with the compliance monitoring program established under this section.

(10) If the owner or operator determines that the compliance monitoring program no longer satisfies the requirements of this section, the owner or operator shall, within 90 days, submit an application to modify the license to make any appropriate changes to the program.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; **correction in (7) made under s. 13.92 (4) (b) 7., Stats., Register March 2013 No. 687.**

NR 664.0100 Corrective action program. An owner or operator required to establish a corrective action program under this subchapter shall, at a minimum, do all of the following:

(1) The owner or operator shall take corrective action to ensure that regulated units are in compliance with the groundwater protection standard under s. NR 664.0092. The department shall specify the groundwater protection standard in the facility license, including all of the following:

(a) A list of the hazardous constituents identified under s. NR 664.0093.

(b) Concentration limits under s. NR 664.0094 for each of those hazardous constituents.

(c) The point of standards application under s. NR 664.0095.

(d) The compliance period under s. NR 664.0096.

(2) The owner or operator shall implement a corrective action program that prevents hazardous constituents from exceeding their respective concentration limits at the point of standards application by removing the hazardous waste constituents or

treating them in place. The license shall specify the specific measures that will be taken.

(3) The owner or operator shall begin corrective action within a reasonable time period after the groundwater protection standard is exceeded. The department shall specify that time period in the facility license. If a facility license includes a corrective action program in addition to a compliance monitoring program, the license shall specify when the corrective action will begin and such a requirement shall operate in lieu of s. NR 664.0099 (8) (b).

(4) In conjunction with a corrective action program, the owner or operator shall establish and implement a groundwater monitoring program to demonstrate the effectiveness of the corrective action program. Such a monitoring program may be based on the requirements for a compliance monitoring program under s. NR 664.0099 and shall be as effective as that program in determining compliance with the groundwater protection standard under s. NR 664.0092 and in determining the success of a corrective action program under sub. (5), where appropriate.

(5) In addition to the other requirements of this section, the owner or operator shall conduct a corrective action program to remove or treat in place any hazardous constituents under s. NR 664.0093 that exceed concentration limits under s. NR 664.0094 in groundwater at all of the following locations:

(a) Between the point of standards application under s. NR 664.0095 and the downgradient property boundary.

(b) Beyond the facility boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the satisfaction of the department that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake that action. The owner or operator is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off−site access is denied. On−site measures to address the releases shall be determined on a case−by−case basis.

(c) Corrective action measures under this subsection shall be initiated and completed within a reasonable period of time considering the extent of contamination.

(d) Corrective action measures under this subsection may be terminated once the concentration of hazardous constituents under s. NR 664.0093 is reduced to levels below their respective concentration limits under s. NR 664.0094.

(6) The owner or operator shall continue corrective action measures during the compliance period to the extent necessary to ensure that the groundwater protection standard is not exceeded. If the owner or operator is conducting corrective action at the end of the compliance period, the owner or operator shall continue that corrective action for as long as necessary to achieve compliance with the groundwater protection standard. The owner or operator may terminate corrective action measures taken beyond the period equal to the active life of the waste management area (including the closure period) if the owner or operator can demonstrate, based on data from the groundwater monitoring program under sub. (4), that the groundwater protection standard of s. NR 664.0092 has not been exceeded for a period of 3 consecutive years.

(7) The owner or operator shall report in writing to the department on the effectiveness of the corrective action program. The owner or operator shall submit these reports semi−annually.

(8) If the owner or operator determines that the corrective action program no longer satisfies the requirements of this section, the owner or operator shall, within 90 days, submit an application to modify the license to make any appropriate changes to the program.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0101 Corrective action for solid waste management units. (1) The owner or operator of a facility seeking a license for the treatment, storage or disposal of hazardous waste shall institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in the unit.

(2) Corrective action shall be specified in the license in accordance with this section and subch. S. The license shall contain schedules of compliance for the corrective action (where the corrective action cannot be completed prior to issuance of the license) and assurances of financial responsibility for completing the corrective action.

(3) The owner or operator shall implement corrective actions beyond the facility property boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the satisfaction of the department that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake the actions. The owner or operator is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off−site access is denied. On−site measures to address the releases shall be determined on a case−by−case basis. Assurances of financial responsibility for the corrective action shall be provided.

(4) The requirements of this section do not apply to remediation waste management sites unless they are part of a facility subject to a license for treating, storing or disposing of hazardous wastes that are not remediation wastes.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter G — Closure and Long−Term Care

NR 664.0110 Applicability. Except as s. NR 664.0001 provides otherwise:

(1) Sections NR 664.0111 to 664.0115 (which concern closure) apply to the owners and operators of all hazardous waste management facilities.

(2) Sections NR 664.0116 to 664.0120 (which concern long−term care) apply to the owners and operators of all of the following:

(a) All hazardous waste disposal facilities.

(b) Waste piles and surface impoundments from which the owner or operator intends to remove the wastes at closure to the extent that these sections are made applicable to the facilities in s. NR 664.0228 or 664.0258.

(c) Tank systems that are required under s. NR 664.0197 to meet the requirements for landfills.

(d) Containment buildings that are required under s. NR 664.1102 to meet the requirements for landfills.

(3) The department may replace all or part of the requirements of this subchapter (and the unit−specific standards referenced in s. NR 664.0111 (3) applying to a regulated unit), with alternative requirements set out in an operating license or in an enforceable document (as defined in s. NR 670.001 (3) (g)), where the department determines that both of the following conditions are met:

(a) The regulated unit is situated among solid waste management units (or areas of concern), a release has occurred and both the regulated unit and one or more solid waste management units (or areas of concern) are likely to have contributed to the release.

(b) It is not necessary to apply the closure requirements of this subchapter (and those referenced in this subchapter) because the alternative requirements will protect human health and the environment and will satisfy the closure performance standard of s. NR 664.0111 (1) and (2).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0111 Closure performance standard. The owner or operator shall close the facility in a manner that does all of the following:

(1) Minimizes the need for further maintenance.

(2) Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post−closure escape of hazardous waste, hazardous constituents, leachate, contaminated run−off or hazardous waste decomposition products to the ground or surface waters or to the atmosphere.

(3) Complies with the closure requirements of this subchapter, including, but not limited to, the requirements of ss. NR 664.0178, 664.0197, 664.0228, 664.0258, 664.0310, 664.0351, 664.0601 to 664.0603 and 664.1102.

(4) Meets, in the case of a landfill or surface impoundment, applicable requirements in ch. NR 140 and applicable soil cleanup standards in ch. NR 720 or meets the applicable closure requirements of sub. (2) or (3), whichever are more stringent.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0112 Closure plan; amendment of plan. **(1)** WRITTEN PLAN. (a) The owner or operator of a hazardous waste management facility shall have a written closure plan. In addition, certain surface impoundments and waste piles from which the owner or operator intends to remove or decontaminate the hazardous waste at partial or final closure are required by ss. NR 664.0228 (3) (a) 1. and 664.0258 (3) (a) 1. to have contingent closure plans. The plan shall be submitted with the feasibility and plan of operation report, in accordance with s. NR 670.014 (2) (m), and approved by the department as part of the operating license issuance procedures under subchs. L and M of ch. NR 670. In accordance with s. NR 670.032, the approved closure plan will become a condition of any hazardous waste operating license.

(b) The department's approval of the plan shall ensure that the approved closure plan is consistent with s. NR 664.0111, this section and ss. NR 664.0113 to 664.0115 and the applicable requirements of subch. F, ss. NR 664.0178, 664.0197, 664.0228, 664.0258, 664.0310, 664.0351, 664.0601 and 664.1102. Until final closure is completed and certified in accordance with s. NR 664.0115, a copy of the approved plan and all approved revisions shall be furnished to the department upon request, including requests by mail.

(2) CONTENT OF PLAN. The plan shall identify steps necessary to perform partial or final closure of the facility, or both, at any point during its active life. The closure plan shall include at least all of the following:

(a) A description of how each hazardous waste management unit at the facility will be closed in accordance with s. NR 664.0111.

(b) A description of how final closure of the facility will be conducted in accordance with s. NR 664.0111. The description shall identify the maximum extent of the operations which will be unclosed during the active life of the facility.

(c) An estimate of the maximum inventory of hazardous wastes ever on−site over the active life of the facility and a detailed description of the methods to be used during partial closures and final closure, including, but not limited to, methods for removing, transporting, treating, storing or disposing of all hazardous wastes, and identification of the types of the off−site hazardous waste management units to be used, if applicable.

(d) A detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures and soils during partial and final closure, including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils and criteria for determining the extent of decontamination required to satisfy the closure performance standard.

(e) A detailed description of other activities necessary during the closure period to ensure that all partial closures and final closure satisfy the closure performance standards, including, but not limited to, groundwater monitoring, leachate collection and run−on and run−off control.

(f) A schedule for closure of each hazardous waste management unit and for final closure of the facility. The schedule shall include, at a minimum, the total time required to close each hazardous waste management unit and the time required for intervening closure activities which will allow tracking of the progress of partial and final closure. (For example, in the case of a landfill unit, estimates of the time required to treat or dispose of all hazardous waste inventory and of the time required to place a final cover shall be included.)

(g) For facilities that use trust funds to establish financial assurance under s. NR 664.0143 or 664.0145 and that are expected to close prior to the expiration of the operating license, an estimate of the expected year of final closure.

(h) For facilities where the department has applied alternative requirements at a regulated unit under s. NR 664.0090 (6), 664.0110 (3) or 664.0140 (4), either the alternative requirements applying to the regulated unit, or a reference to the enforceable document containing those alternative requirements.

(3) AMENDMENT OF PLAN. The owner or operator shall submit a written notification of or request for an operating license modification to authorize a change in operating plans, facility design or the approved closure plan in accordance with the applicable procedures in ch. NR 670. The written notification or request shall include a copy of the amended closure plan for review or approval by the department.

(a) The owner or operator may submit a written notification or request to the department for an operating license modification to amend the closure plan at any time prior to the notification of partial or final closure of the facility.

(b) The owner or operator shall submit a written notification of or request for an operating license modification to authorize a change in the approved closure plan under any of the following circumstances:

1. Changes in operating plans or facility design affect the closure plan.

2. There is a change in the expected year of closure, if applicable.

3. In conducting partial or final closure activities, unexpected events require a modification of the approved closure plan.

4. The owner or operator requests the department to apply alternative requirements to a regulated unit under s. NR 664.0090 (6), 664.0110 (3) or 664.0140 (4).

(c) The owner or operator shall submit a written request for an operating license modification including a copy of the amended closure plan for approval at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the closure plan. If an unexpected event occurs during the partial or final closure period, the owner or operator shall request an operating license modification no later than 30 days after the unexpected event. An owner or operator of a surface impoundment or waste pile that intends to remove all hazardous waste at closure and is not otherwise required to prepare a contingent closure plan under s. NR 664.0228 (3) (a) 1. or 664.0258 (3) (a) 1., shall submit an amended closure plan to the department no later than 60 days from the date that the owner or operator or department determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of s. NR 664.0310, or no later than 30 days from that date if the determination is made during partial or final closure. The department will approve, disapprove or modify this amended plan in accordance with the procedures in ch. NR 670. In accordance with s. NR 670.032, the approved closure plan will become a condition of any hazardous waste operating license issued.

(d) The department may request modifications to the plan under the conditions described in par. (b). The owner or operator shall submit the modified plan within 60 days of the department's request, or within 30 days if the change in facility conditions

occurs during partial or final closure. Any modifications requested by the department will be approved in accordance with the procedures in ch. NR 670.

(4) NOTIFICATION OF PARTIAL CLOSURE AND FINAL CLOSURE. (a) The owner or operator shall notify the department in writing of the intent to close the facility at least 180 days prior to the partial or final closure of a hazardous waste facility.

(b) The date when the owner or operator "expects to begin closure" shall be either of the following:

1. No later than 30 days after the date on which any hazardous waste management unit receives the known final volume of hazardous wastes, or if there is a reasonable possibility that the hazardous waste management unit will receive additional hazardous wastes, no later than one year after the date on which the unit received the most recent volume of hazardous wastes. If the owner or operator of a hazardous waste management unit can demonstrate to the department that the hazardous waste management unit or facility has the capacity to receive additional hazardous wastes and the owner or operator has taken all steps to prevent threats to human health and the environment, including compliance with all applicable operating license requirements, the department may approve an extension to this one−year limit.

2. For units meeting the requirements of s. NR 664.0113 (4), no later than 30 days after the date on which the hazardous waste management unit receives the known final volume of non−hazardous wastes, or if there is a reasonable possibility that the hazardous waste management unit will receive additional non−hazardous wastes, no later than one year after the date on which the unit received the most recent volume of non−hazardous wastes. If the owner or operator can demonstrate to the department that the hazardous waste management unit has the capacity to receive additional non−hazardous wastes and the owner or operator has taken, and will continue to take, all steps to prevent threats to human health and the environment, including compliance with all applicable operating license requirements, the department may approve an extension to this one−year limit.

(c) If the facility's operating license is denied, suspended or revoked, or if the facility is otherwise ordered, by judicial decree or by the department, to cease receiving hazardous wastes or to close, then the requirements of this subsection do not apply. However, the owner or operator shall close the facility in accordance with the deadlines established in s. NR 664.0113.

(5) REMOVAL OF WASTES AND DECONTAMINATION OR DISMANTLING OF EQUIPMENT. Nothing in this section shall preclude the owner or operator from removing hazardous wastes and decontaminating or dismantling equipment in accordance with the approved partial or final closure plan at any time before or after notification of partial or final closure.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0113 Closure; time allowed for closure. **(1)** Within 90 days after receiving the final volume of hazardous wastes, or the final volume of non−hazardous wastes if the owner or operator complies with all applicable requirements in subs. (4) and (5), at a hazardous waste management unit or facility, the owner or operator shall treat, remove from the unit or facility or dispose of on−site, all hazardous wastes in accordance with the approved closure plan. The department may approve a longer period if the owner or operator complies with all applicable requirements for requesting a modification to the operating license and demonstrates that the conditions in pars. (a) and (b) are met:

(a) Either of the following applies:

1. The activities required to comply with this subsection will, of necessity, take longer than 90 days to complete.

2. All of the following apply:

a. The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes, or has the capacity to receive non−hazardous wastes if the owner or operator complies with subs. (4) and (5).

b. There is a reasonable likelihood that the owner or operator or another person will recommence operation of the hazardous waste management unit or the facility within one year.

c. Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site.

(b) The owner or operator has taken and will continue to take all steps to prevent threats to human health and the environment, including compliance with all applicable operating license requirements.

(2) The owner or operator shall complete partial and final closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of hazardous wastes, or the final volume of non−hazardous wastes if the owner or operator complies with all applicable requirements in subs. (4) and (5), at the hazardous waste management unit or facility. The department may approve an extension to the closure period if the owner or operator complies with all applicable requirements for requesting a modification to the operating license and demonstrates that the conditions in pars. (a) and (b) are met:

(a) Either of the following applies:

1. The partial or final closure activities will, of necessity, take longer than 180 days to complete.

2. All of the following apply:

a. The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes, or has the capacity to receive non−hazardous wastes if the owner or operator complies with subs. (4) and (5).

b. There is reasonable likelihood that the owner or operator or another person will recommence operation of the hazardous waste management unit or the facility within one year.

c. Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site.

(b) The owner or operator has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but not operating hazardous waste management unit or facility, including compliance with all applicable operating license requirements.

(3) The demonstrations referred to in subs. (1) (a) and (2) (a) shall be made as follows:

(a) The demonstrations in sub. (1) (a) shall be made at least 30 days prior to the expiration of the 90−day period in sub. (1).

(b) The demonstration in sub. (2) (a) shall be made at least 30 days prior to the expiration of the 180−day period in sub. (2), unless the owner or operator is otherwise subject to the deadlines in sub. (4).

(4) The department may allow an owner or operator to receive only non−hazardous wastes in a landfill or surface impoundment unit after the final receipt of hazardous wastes at that unit if all the following conditions are met:

(a) The owner or operator requests an operating license modification in compliance with all applicable requirements in ch. NR 670 and in the license modification request demonstrates that all the following criteria are met:

1. The unit has the existing design capacity as indicated on the part A application to receive non−hazardous wastes.

2. There is a reasonable likelihood that the owner or operator or another person will receive non−hazardous wastes in the unit within one year after the final receipt of hazardous wastes.

3. The non−hazardous wastes will not be incompatible with any remaining wastes in the unit, or with the facility design and operating requirements of the unit or facility under this chapter.

4. Closure of the hazardous waste management unit would be incompatible with continued operation of the unit or facility.

5. The owner or operator is operating and will continue to operate in compliance with all applicable operating license requirements.

(b) The request to modify the operating license includes an amended waste analysis plan, groundwater monitoring and response program, human exposure assessment required under 42 USC 6939a and closure and long−term care plans, and updated cost estimates and demonstrations of financial assurance for closure and long−term care as necessary and appropriate, to reflect any changes due to the presence of hazardous constituents in the non−hazardous wastes, and changes in closure activities, including the expected year of closure if applicable under s. NR 664.0112 (2) (g), as a result of the receipt of non−hazardous wastes following the final receipt of hazardous wastes.

(c) The request to modify the operating license includes revisions, as necessary and appropriate, to affected conditions of the license to account for the receipt of non−hazardous wastes following receipt of the final volume of hazardous wastes.

(d) The request to modify the operating license and the demonstrations referred to in pars. (a) and (b) are submitted to the department no later than 120 days prior to the date on which the owner or operator of the facility receives the known final volume of hazardous wastes at the unit, or no later than 90 days after August 1, 2006, whichever is later.

(5) In addition to the requirements in sub. (4), an owner or operator of a hazardous waste surface impoundment that is not in compliance with the liner and leachate collection system requirements in 42 USC 6924(o)(1) and 6925(j)(1) or 42 USC 6924(o)(2) or (3) or 6925(j)(2), (3), (4) or (13) shall do all of the following:

(a) Submit with the request to modify the operating license both of the following:

1. A contingent corrective measures plan, unless a corrective action plan has already been submitted under s. NR 664.0099.

2. A plan for removing hazardous wastes in compliance with par. (b).

(b) Remove all hazardous wastes from the unit by removing all hazardous liquids, and removing all hazardous sludges to the extent practicable without impairing the integrity of the liners, if any.

(c) Removal of hazardous wastes shall be completed no later than 90 days after the final receipt of hazardous wastes. The department may approve an extension to this deadline if the owner or operator demonstrates that the removal of hazardous wastes will, of necessity, take longer than the allotted period to complete and that an extension will not pose a threat to human health and the environment.

(d) If a release that is a statistically significant increase (or decrease in the case of pH) over background values for detection monitoring parameters or constituents specified in the operating license or that exceeds the facility's groundwater protection standard at the point of standards application, if applicable, is detected in accordance with the requirements in subch. F, the owner or operator of the unit:

1. Shall implement corrective measures in accordance with the approved contingent corrective measures plan required by par. (a) no later than one year after detection of the release, or approval of the contingent corrective measures plan, whichever is later.

2. May continue to receive wastes at the unit following detection of the release only if the approved corrective measures plan includes a demonstration that continued receipt of wastes will not impede corrective action.

3. May be required by the department to implement corrective measures in less than one year or to cease the receipt of wastes until corrective measures have been implemented if necessary to protect human health and the environment.

(e) During the period of corrective action, the owner or operator shall provide semi−annual reports to the department that describe the progress of the corrective action program, compile all groundwater monitoring data and evaluate the effect of the continued receipt of non−hazardous wastes on the effectiveness of the corrective action.

(f) The department may require the owner or operator to commence closure of the unit if the owner or operator fails to implement corrective action measures in accordance with the approved contingent corrective measures plan within one year as required in par. (d), or fails to make substantial progress in implementing corrective action and achieving the facility's groundwater protection standard or background levels if the facility has not yet established a groundwater protection standard.

(g) If the owner or operator fails to implement corrective measures as required in par. (d), or if the department determines that substantial progress has not been made pursuant to par. (f), the department shall:

1. Notify the owner or operator in writing that the owner or operator shall begin closure in accordance with the deadlines in subs. (1) and (2) and provide a detailed statement of reasons for this determination.

2. Provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments on the decision no later than 20 days after the date of the notice.

3. If the department receives no written comments, the decision will become final 5 days after the close of the comment period. The department will notify the owner or operator that the decision is final, and that a revised closure plan, if necessary, shall be submitted within 15 days of the final notice and that closure shall begin in accordance with the deadlines in subs. (1) and (2).

4. If the department receives written comments on the decision, it shall make a final decision within 30 days after the end of the comment period, and provide the owner or operator in writing and the public through a newspaper notice, a detailed statement of reasons for the final decision. If the department determines that substantial progress has not been made, closure shall be initiated in accordance with the deadlines in subs. (1) and (2).

5. The final determinations made by the department under subds. 3. and 4. are not subject to administrative appeal.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0114 Disposal or decontamination of equipment, structures and soils. During the partial and final closure periods, all contaminated equipment, structures and soils shall be properly disposed of or decontaminated unless otherwise specified in s. NR 664.0197, 664.0228, 664.0258 or 664.0310, or under the authority of ss. NR 664.0601 and 664.0603. By removing any hazardous wastes or hazardous constituents during partial and final closure, the owner or operator may become a generator of hazardous waste and shall handle that waste in accordance with all applicable requirements of ch. NR 662.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0115 Certification of closure. Within 60 days of completion of closure of each hazardous waste surface impoundment, waste pile and landfill unit, and within 60 days of the completion of final closure, the owner or operator shall submit to the department, by registered mail, a certification that the hazardous waste management unit or facility, as applicable, has been closed in accordance with the specifications in the approved closure plan. The certification shall be signed by the owner or operator and by an independent registered professional engineer. Documentation supporting the independent registered professional engineer's certification shall be furnished to the department upon request until the department releases the owner or operator from the financial assurance requirements for closure under s. NR 664.0143 (11).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

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NR 664.0116 Survey plat. No later than the submission of the certification of closure of each hazardous waste disposal unit, the owner or operator shall submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the department, a survey plat indicating the location and dimensions of landfill cells or other hazardous waste disposal units with respect to permanently surveyed benchmarks. This plat shall be prepared and certified by a professional land surveyor. The plat filed with the local zoning authority, or the authority with jurisdiction over local land use, shall contain a note, prominently displayed, which states the owner's or operator's obligation to restrict disturbance of the hazardous waste disposal unit according to the applicable rules of this subchapter.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0117 Long−term care and use of property. (1) (a) Long−term care for each hazardous waste management unit subject to the requirements of this section and ss. NR 664.0118 to 664.0120 shall begin after completion of closure of the unit and continue for a minimum of 40 years after that date and shall consist of at least both of the following:

1. Monitoring and reporting in accordance with the requirements of subchs. F, K, L, N and X.

2. Maintenance and monitoring of waste containment systems in accordance with the requirements of subchs. F, K, L, N and X.

(b) Any time preceding partial closure of a hazardous waste management unit subject to long−term care requirements or final closure, or any time during the long−term care period for a particular unit, the department may, in accordance with the operating license modification procedures in ch. NR 670 extend the long−term care period applicable to the hazardous waste management unit or facility if the department finds that the extended period is necessary to protect human health and the environment (e.g., leachate or groundwater monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment).

(2) The department may require, at partial and final closure, continuation of any of the security requirements of s. NR 664.0014 during part or all of the long−term care period under either of the following circumstances:

(a) Hazardous wastes may remain exposed after completion of partial or final closure.

(b) Access by the public or domestic livestock may pose a hazard to human health.

(3) Post−closure use of property on or in which hazardous wastes remain after partial or final closure may never be allowed to disturb the integrity of the final cover, liners or any other components of the containment system, or the function of the facility's monitoring systems, unless the department finds that either of the following applies:

(a) The disturbance is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment.

(b) The disturbance is necessary to reduce a threat to human health or the environment.

(4) All long−term care activities shall be in accordance with the provisions of the approved long−term care plan as specified in s. NR 664.0118.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0118 Long−term care plan; amendment of plan. (1) WRITTEN PLAN. The owner or operator of a hazardous waste disposal unit shall have a written long−term care plan. In addition, certain surface impoundments and waste piles from which the owner or operator intends to remove or decontaminate the hazardous wastes at partial or final closure are required by ss. NR 664.0228 (3) (a) 2. and 664.0258 (3) (a) 2. to have contingent long−term care plans. Owners or operators of surface impoundments and waste piles not otherwise required to prepare contingent long−term care plans under ss. NR 664.0228 (3) (a) 2. and 664.0258 (3) (a) 2. shall submit a long−term care plan to the department within 90 days from the date that the owner or operator or department determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of s. NR 664.0117, this section, ss. NR 664.0119 and 664.0120. The plan shall be submitted with the feasibility and plan of operation report, in accordance with s. NR 670.014 (2) (m), and approved by the department as part of the operating license issuance procedures under subchs. L and M of ch. NR 670. In accordance with s. NR 670.032, the approved long−term care plan will become a condition of any hazardous waste operating license issued.

(2) CONTENT OF PLAN. For each hazardous waste management unit subject to the requirements of this section, the long−term care plan shall identify the activities that will be carried on after closure of each disposal unit and the frequency of these activities, and include at least all of the following:

(a) A description of the planned monitoring activities and frequencies at which they will be performed to comply with subchs. F, K, L, N and X during the long−term care period.

(b) A description of the planned maintenance activities, and frequencies at which they will be performed, to ensure both of the following:

1. The integrity of the cap and final cover or other containment systems in accordance with the requirements of subchs. F, K, L, N and X.

2. The function of the monitoring equipment in accordance with the requirements of subchs. F, K, L, N and X.

(c) The name, address and phone number of the person or office to contact about the hazardous waste disposal unit or facility during the long−term care period.

(d) For facilities where the department has applied alternative requirements at a regulated unit under s. NR 664.0090 (6), 664.0110 (3) or 664.0140 (4), either the alternative requirements that apply to the regulated unit, or a reference to the enforceable document containing those requirements.

(3) AVAILABILITY OF PLAN. Until final closure of the facility, a copy of the approved long−term care plan shall be furnished to the department upon request, including request by mail. After final closure has been certified, the person or office specified in sub. (2) (c) shall keep the approved long−term care plan during the remainder of the long−term care period.

(4) AMENDMENT OF PLAN. The owner or operator shall submit a written notification of or request for an operating license modification to authorize a change in the approved long−term care plan in accordance with the applicable requirements in ch. NR 670. The written notification or request shall include a copy of the amended long−term care plan for review or approval by the department.

(a) The owner or operator may submit a written notification or request to the department for an operating license modification to amend the long−term care plan at any time during the active life of the facility or during the long−term care period.

(b) The owner or operator shall submit a written notification of or request for an operating license modification to authorize a change in the approved long−term care plan whenever any of the following occurs:

1. Changes in operating plans or facility design affect the approved long−term care plan.

2. There is a change in the expected year of final closure, if applicable.

3. Events which occur during the active life of the facility, including partial and final closures, affect the approved long−term care plan.

4. The owner or operator requests the department to apply alternative requirements to a regulated unit under s. NR 664.0090 (6), 664.0110 (3) or 664.0140 (4).

(c) The owner or operator shall submit a written request for an operating license modification at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the long−term care plan. An owner or operator of a surface impoundment or waste pile that intends to remove all hazardous waste at closure and is not otherwise required to submit a contingent long−term care plan under ss. NR 664.0228 (3) (a) 2. and 664.0258 (3) (a) 2. shall submit a long−term care plan to the department no later than 90 days after the date that the owner or operator or department determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of s. NR 664.0310. The department will approve, disapprove or modify this plan in accordance with the procedures in ch. NR 670. In accordance with s. NR 670.032, the approved long−term care plan will become an operating license condition.

(d) The department may request modifications to the plan under the conditions described in par. (b). The owner or operator shall submit the modified plan no later than 60 days after the department's request, or no later than 90 days if the unit is a surface impoundment or waste pile not previously required to prepare a contingent long−term care plan. Any modifications requested by the department will be approved, disapproved or modified in accordance with the procedures in ch. NR 670.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0119 Long−term care notices. (1) No later than 60 days after certification of closure of each hazardous waste disposal unit, the owner or operator shall submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the department a record of the type, location and quantity of hazardous wastes disposed of within each cell or other disposal unit of the facility. For hazardous wastes disposed of before July 1, 1985, the owner or operator shall identify the type, location and quantity of the hazardous wastes to the best of the owner's or operator's knowledge and in accordance with any records the owner or operator has kept.

(2) Within 60 days of certification of closure of the first hazardous waste disposal unit and within 60 days of certification of closure of the last hazardous waste disposal unit, the owner or operator shall do both of the following:

(a) Record, in accordance with ch. 706, Stats., a notation on the deed to the facility property, or on some other instrument which is normally examined during title search, that will in perpetuity notify any potential purchaser of the property of all of the following:

1. The land has been used to manage hazardous wastes.

2. Its use is restricted under this subchapter.

3. The survey plat and record of the type, location and quantity of hazardous wastes disposed of within each cell or other hazardous waste disposal unit of the facility required by s. NR 664.0116 and sub. (1) have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the department.

(b) Submit a certification, signed by the owner or operator, that the owner or operator has recorded the notation specified in par. (a), including a copy of the document in which the notation has been placed, to the department.

(3) If the owner or operator or any subsequent owner or operator of the land upon which a hazardous waste disposal unit is located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any, or contaminated soils, the owner or operator shall request a modification to the long−term care license in accordance with the applicable requirements in ch. NR 670. The owner or operator shall demonstrate that the removal of hazardous wastes will satisfy the criteria of s. NR 664.0117 (3). By removing hazardous waste, the owner or operator may become a generator of hazardous waste and shall manage it in accordance with all applicable requirements of chs. NR 660 to 673. If the owner or operator is granted a license modification or otherwise granted approval to conduct the removal activities, the owner or operator may request that the department approve either of the following:

(a) The removal of the notation on the deed to the facility property or other instrument normally examined during title search.

(b) The addition of a notation to the deed or instrument indicating the removal of the hazardous waste.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0120 Certification of completion of long−term care. No later than 60 days after completion of the established long−term care period for each hazardous waste disposal unit, the owner or operator shall submit to the department, by registered mail, a certification that the long−term care period for the hazardous waste disposal unit was performed in accordance with the specifications in the approved long−term care plan. The owner or operator and an independent registered professional engineer shall sign the certification. Documentation supporting the independent registered professional engineer's certification shall be furnished to the department upon request until the department releases the owner or operator from the financial assurance requirements for long−term care under s. NR 664.0145 (11).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter H — Financial Requirements

NR 664.0140 Applicability. (1) The requirements of ss. NR 664.0142, 664.0143 and 664.0147 to 664.0151 apply to owners and operators of all hazardous waste facilities, except as provided otherwise in this section or in s. NR 664.0001.

(2) The requirements of ss. NR 664.0144 and 664.0145 apply only to owners and operators of one or more of the following:

(a) Disposal facilities.

(b) Piles and surface impoundments from which the owner or operator intends to remove the wastes at closure, to the extent that these sections are made applicable to the facilities in ss. NR 664.0228 and 664.0258.

(c) Tank systems that are required under s. NR 664.0197 to meet the requirements for landfills.

(d) Containment buildings that are required under s. NR 664.1102 to meet the requirements for landfills.

(3) States and the federal government are exempt from the requirements of s. NR 664.0147.

(4) The department may replace all or part of the requirements of this subchapter applying to a regulated unit with alternative requirements for financial assurance set out in the license or in an enforceable document (as defined in s. NR 670.001 (3) (g)), where the department does all of the following:

(a) Prescribes alternative requirements for the regulated unit under s. NR 664.0090 (6) or 664.0110 (3) or both.

(b) Determines that it is not necessary to apply the requirements of this subchapter because the alternative financial assurance requirements will protect human health and the environment.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0141 Definitions. When used in this subchapter, the following terms have the meanings given below.

(1) "Captive insurance company" means a closely−held company owned by one or more organizations, parents, whose original purpose was and may continue to be, to insure some or all of the risks of shareholders or affiliated organizations.

(2) "Closure plan" means the plan for closure prepared in accordance with the requirements of s. NR 664.0112.

(3) "Current closure cost estimate" means the most recent of the estimates prepared in accordance with s. NR 664.0142 (1) to (3).

(4) "Current long−term care cost estimate" means the most recent of the estimates prepared in accordance with s. NR 664.0144 (1) to (3).

(5) "Parent corporation" means a corporation which directly owns at least 50% of the voting stock of the corporation which is the facility owner or operator; the latter corporation is deemed a "subsidiary" of the parent corporation.

(6) "Long−term care plan" means the plan for long−term care prepared in accordance with the requirements of ss. NR 664.0117 to 664.0120.

(7) The following terms are used in the specifications for the financial tests for liability coverage. The definitions are intended to assist in the understanding of this chapter and are not intended to limit the meanings of terms in a way that conflicts with generally accepted accounting practices.

(a) "Assets" means all existing and all probable future economic benefits obtained or controlled by a particular entity.

(b) "Current assets" means cash or other assets or resources commonly identified as those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business.

(c) "Current liabilities" means obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities.

(d) "Current plugging and abandonment cost estimate" means the most recent of the estimates prepared in accordance with ch. NR 815.

(e) "Independently audited" refers to an audit performed by an independent certified public accountant in accordance with generally accepted auditing standards.

(f) "Liabilities" means probable future sacrifices of economic benefits arising from present obligations to transfer assets or provide services to other entities in the future as a result of past transactions or events.

(g) "Net working capital" means current assets minus current liabilities.

(h) "Net worth" has the meaning given in s. 289.41 (1) (c), Stats.

(i) "Tangible net worth" means the tangible assets that remain after deducting liabilities. The assets would not include intangibles such as goodwill and rights to patents or royalties.

(8) In the liability insurance requirements the terms "bodily injury" and "property damage" shall have the meanings given these terms by applicable state law. However, these terms do not include those liabilities which, consistent with standard industry practices, are excluded from coverage in liability policies for bodily injury and property damage. The department intends the meanings of other terms used in the liability insurance requirements to be consistent with their common meanings within the insurance industry. The definitions given below of several of the terms are intended to assist in the understanding of this chapter and are not intended to limit their meanings in a way that conflicts with general insurance industry usage.

(a) "Accidental occurrence" means an accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage neither expected nor intended from the standpoint of the insured.

(b) "Legal defense costs" means any expenses that an insurer incurs in defending against claims of third parties brought under the terms and conditions of an insurance policy.

(c) "Nonsudden accidental occurrence" means an occurrence which takes place over time and involves continuous or repeated exposure.

(d) "Sudden accidental occurrence" means an occurrence which is not continuous or repeated in nature.

(9) "Substantial business relationship" means the extent of a business relationship necessary under applicable state law to make a guarantee contract issued incident to that relationship valid and enforceable. A substantial business relationship shall arise from a pattern of recent or ongoing business transactions, in addition to the guarantee itself, such that a currently existing business relationship between the guarantor and the owner or operator is demonstrated to the satisfaction of the department.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0142 Cost estimate for closure. (1) The owner or operator shall have a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with the requirements in ss. NR 664.0111 to 664.0115 and applicable closure requirements in ss. NR 664.0178, 664.0197, 664.0228, 664.0258, 664.0310, 664.0351, 664.0601 to 664.0603 and 664.1102.

(a) The estimate shall equal the cost of final closure at the point in the facility's active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan (see s. NR 664.0112 (2)).

(b) The closure cost estimate shall be based on the costs to the owner or operator of hiring a third party to close the facility. A third party is a party who is neither a parent corporation nor a subsidiary of the owner or operator. The owner or operator may use costs for on−site disposal if the owner or operator can demonstrate that on−site disposal capacity will exist at all times over the life of the facility.

(c) The closure cost estimate may not incorporate any salvage value that may be realized with the sale of hazardous wastes, or non−hazardous wastes if applicable under s. NR 664.0113 (4), facility structures or equipment, land or other assets associated with the facility at the time of partial or final closure.

(d) The owner or operator may not incorporate a zero cost for hazardous wastes, or non−hazardous wastes if applicable under s. NR 664.0113 (4), that might have economic value.

(2) During the active life of the facility, the owner or operator shall adjust the closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with s. NR 664.0143. For owners and operators of disposal facilities using the net worth test, the closure cost estimate shall be updated for inflation as specified in s. 289.41 (5) (d), Stats. The adjustment may be made by recalculating the maximum costs of closure in current dollars, or by using an inflation factor derived from the most recent implicit price deflator for gross domestic product published by the U.S. department of commerce in its *Survey of Current Business,* as specified in pars. (a) and (b). The inflation factor is the result of dividing the latest published annual deflator by the deflator for the previous year.

(a) The first adjustment shall be made by multiplying the closure cost estimate by the inflation factor. The result is the adjusted closure cost estimate.

(b) Subsequent adjustments shall be made by multiplying the latest adjusted closure cost estimate by the latest inflation factor.

(3) During the active life of the facility, the owner or operator shall revise the closure cost estimate no later than 30 days after the department has approved the request to modify the closure plan, if the change in the closure plan increases the cost of closure. The revised closure cost estimate shall be adjusted for inflation as specified in sub. (2).

(4) The owner or operator shall keep the following at the facility during the operating life of the facility: The latest closure cost estimate prepared in accordance with subs. (1) and (3) and, when this estimate has been adjusted in accordance with sub. (2), the latest adjusted closure cost estimate.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0143 Financial assurance for closure. An owner or operator of each facility shall establish financial assurance for closure of the facility. The owner or operator shall choose from the options as specified in subs. (1) to (8).

(1) CLOSURE TRUST FUND. (a) An owner or operator may satisfy the requirements of this section by establishing a closure trust fund which conforms to the requirements of this subsection and submitting an originally signed duplicate of the trust agreement to the department. An owner or operator of a new facility shall submit the originally signed duplicate of the trust agreement to the department at least 60 days before the date on which hazardous waste is first received for treatment, storage or disposal. The trustee shall be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

(b) The wording of the trust agreement shall be identical to the wording on the department form specified in s. NR 664.0151 (1) (a) and the trust agreement shall be accompanied by a formal certification of acknowledgment as specified in s. NR 664.0151 (1) (b). Schedule A of the trust agreement shall be updated within 60 days after a change in the amount of the current closure cost estimate covered by the agreement.

(c) Payments into the trust fund shall be made annually by the owner or operator over the term of the initial license or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter. For the purposes of this section, this period is referred to as the "pay−in period." The payments into the closure trust fund shall be made as follows:

1. For a new facility, the first payment shall be made before the initial receipt of hazardous waste for treatment, storage or disposal. A receipt from the trustee for this payment shall be submitted by the owner or operator to the department before this initial receipt of hazardous waste. The first payment shall be at least equal to the current closure cost estimate, except as provided in sub. (9), divided by the number of years in the pay−in period. Subsequent payments shall be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment shall be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current closure cost estimate, CV is the current value of the trust fund and Y is the number of years remaining in the pay−in period.

2. If an owner or operator establishes a trust fund as specified in this subsection, and the value of that trust fund is less than the current closure cost estimate when a license is awarded for the facility, the amount of the current closure cost estimate still to be paid into the trust fund shall be paid in over the pay−in period as defined in par. (c)(intro). Payments shall continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to ch. NR 665. The amount of each payment shall be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current closure cost estimate, CV is the current value of the trust fund and Y is the number of years remaining in the pay−in period.

(d) The owner or operator may accelerate payments into the trust fund or may deposit the full amount of the current closure cost estimate at the time the fund is established. However, the owner or operator shall maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in par. (c).

(e) If the owner or operator establishes a closure trust fund after having used one or more alternate mechanisms specified in this section or in s. NR 665.0143, the first payment shall be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of this subsection and s. NR 665.0143 (1), as applicable.

(f) After the pay−in period is completed, whenever the current closure cost estimate changes, the owner or operator shall compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, shall either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current closure cost estimate, or obtain other financial assurance as specified in this section to cover the difference.

(g) If the value of the trust fund is greater than the total amount of the current closure cost estimate, the owner or operator may submit a written request to the department for release of the amount in excess of the current closure cost estimate.

(h) If an owner or operator substitutes other financial assurance as specified in this section for all or part of the trust fund, the owner or operator may submit a written request to the department for release of the amount in excess of the current closure cost estimate covered by the trust fund.

(i) Within 60 days after receiving a request from the owner or operator for release of funds as specified in par. (g) or (h), the department will instruct the trustee to release to the owner or operator funds as the department specifies in writing.

(j) After beginning partial or final closure, an owner or operator or another person authorized to conduct partial or final closure may request reimbursements for partial or final closure expenditures by submitting itemized bills to the department. The owner or operator may request reimbursements for partial closure only if sufficient funds are remaining in the trust fund to cover the maximum costs of closing the facility over its remaining operating life. Within 60 days after receiving bills for partial or final closure activities, the department will instruct the trustee to make reimbursements in those amounts as the department specifies in writing, if the department determines that the partial or final closure expenditures are in accordance with the approved closure plan, or otherwise justified. If the department has reason to believe that the maximum cost of closure over the remaining life of the facility will be significantly greater than the value of the trust fund, the department may withhold reimbursements of amounts as the department deems prudent until the department determines, in accordance with sub. (11) that the owner or operator is no longer required to maintain financial assurance for final closure of the facility. If the department does not instruct the trustee to make the reimbursements, the department will provide the owner or operator with a detailed written statement of reasons.

(k) The department will agree to termination of the trust when one of the following applies:

1. An owner or operator substitutes alternate financial assurance as specified in this section.

2. The department releases the owner or operator from the requirements of this section in accordance with sub. (11).

(2) SURETY BOND GUARANTEEING PAYMENT INTO A CLOSURE TRUST FUND. (a) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this subsection and submitting the bond to the department. An owner or operator of a new facility shall submit the bond to the department at least 60 days before the date on

which hazardous waste is first received for treatment, storage or disposal. The bond shall be effective before this initial receipt of hazardous waste. The surety company issuing the bond shall, at a minimum, be among those listed as acceptable sureties on federal bonds in Circular 570 of the U.S. department of the treasury.

(b) The wording of the surety bond shall be identical to the wording on the department form specified in s. NR 664.0151 (2).

(c) The owner or operator who uses a surety bond to satisfy the requirements of this section shall also establish a standby trust fund. Under the terms of the bond, all payments made shall be deposited by the surety directly into the standby trust fund in accordance with instructions from the department. This standby trust fund must meet the requirements specified in sub. (1) except for all of the following:

1. An originally signed duplicate of the trust agreement must be submitted to the department with the surety bond.

2. Until the standby trust fund is funded pursuant to the requirements of this section, all of the following are not required:

a. Payments into the trust fund as specified in sub. (1).

b. Updating of Schedule A of the trust agreement (see Form 4430−022) to show current closure cost estimates.

c. Annual valuations as required by the trust agreement.

d. Notices of nonpayment as required by the trust agreement.

(d) The bond must guarantee that the owner or operator shall do any of the following:

1. Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility.

2. Fund the standby trust fund in an amount equal to the penal sum within 15 days after an administrative order to begin final closure issued by the department becomes final or within 15 days after an order to begin final closure is issued.

3. Provide alternate financial assurance as specified in this section, and obtain the department's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the department of a notice of cancellation of the bond from the surety.

(e) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(f) The penal sum of the bond shall be in an amount at least equal to the current closure cost estimate, except as provided in sub. (9).

(g) Whenever the current closure cost estimate increases to an amount greater then the penal sum, the owner or operator, within 60 days after the increase, shall either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of the increase to the department, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the department.

(h) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the department. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the department, as evidence by the return receipts. Not less than 30 days prior to the expiration of the 120 day notice period, the owner shall deliver to the department a replacement bond or other proof of financial responsibility under this section, in the absence of which all storage, treatment or disposal operations shall immediately cease and the bond shall remain in effect as long as any obligation of the owner remains for closure.

(i) The owner or operator may cancel the bond if the department has given prior written consent based on the department's receipt of evidence of alternate financial assurance as specified in this section.

(3) SURETY BOND GUARANTEEING PERFORMANCE OF CLOSURE. (a) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this subsection and submitting the bond to the department. An owner or operator of a new facility shall submit the bond to the department at least 60 days before the date on which hazardous waste is first received for treatment, storage or disposal. The bond shall be effective before this initial receipt of hazardous waste. The surety company issuing the bond shall, at a minimum, be among those listed as acceptable sureties on federal bonds in Circular 570 of the U.S. department of the treasury.

(b) The wording of the surety bond shall be identical to the wording on the department form specified in s. NR 664.0151 (3).

(d) The bond shall guarantee that the owner or operator will do one of the following:

1. Perform final closure in accordance with the closure plan and other requirements of the license for the facility whenever required to do so.

2. Provide alternate financial assurance as specified in this section, and obtain the department's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the department of a notice of cancellation of the bond from the surety.

(e) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination by the department that the owner or operator has failed to perform final closure in accordance with the approved closure plan and other license requirements when required to do so, under the terms of the bond the surety will perform final closure as guaranteed by the bond or shall pay the penal sum of the bond to the department.

(f) The penal sum of the bond shall be in an amount at least equal to the current closure cost estimate.

(g) Whenever the current closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, shall either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of the increase to the department, or obtain other financial assurance as specified in this section. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the department.

(h) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the department. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the department, as evidenced by the return receipts. Not less than 30 days prior to the expiration of the 120−day notice period, the owner shall deliver to the department a replacement bond or other proof of financial responsibility under this section, in the absence of which all storage, treatment or disposal operations shall immediately cease and the bond shall remain in effect as long as any obligation of the owner remains for closure.

(i) The owner or operator may cancel the bond if the department has given prior written consent. The department will provide written consent when any of the following apply:

1. An owner or operator substitutes alternate financial assurance as specified in this section.

2. The department releases the owner or operator from the requirements of this section in accordance with sub. (11).

(j) The surety will not be liable for deficiencies in the performance of closure by the owner or operator after the department

releases the owner or operator from the requirements of this section in accordance with sub. (11).

(4) CLOSURE LETTER OF CREDIT. (a) An owner or operator may satisfy the requirements of this section by obtaining an irrevocable letter of credit which conforms to the requirements of this subsection and submitting the letter to the department. An owner or operator of a new facility shall submit the letter of credit to the department at least 60 days before the date on which hazardous waste is first received for treatment, storage or disposal. The letter of credit shall be effective before this initial receipt of hazardous waste. The issuing institution shall be an entity which has the authority to issue letters of credit and whose letter−of−credit operations are regulated and examined by a federal or state agency.

(b) The wording of the letter of credit shall be identical to the wording on the department form specified in s. NR 664.0151 (4).

(d) The letter of credit shall be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution and date, and providing the following information: the EPA identification number, name and address of the facility, and the amount of funds assured for closure of the facility by the letter of credit.

(e) The letter of credit shall be irrevocable and issued for a period of at least one year. The letter of credit shall provide that the expiration date will be automatically extended for a period of at least one year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the department by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the department have received the notice, as evidenced by the return receipts.

(f) The letter of credit shall be issued in an amount at least equal to the current closure cost estimate, except as provided in sub. (9).

(g) Whenever the current closure cost estimate increases to an amount greater than the amount of the credit, the owner or operator, within 60 days after the increase, shall either cause the amount of the credit to be increased so that it at least equals the current closure cost estimate and submit evidence of the increase to the department, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current closure cost estimate decreases, the amount of the credit may be reduced to the amount of the current closure cost estimate following written approval by the department.

(h) Following a determination by the department that the owner or operator has failed to perform final closure in accordance with the closure plan and other license requirements when required to do so, the department may draw on the letter of credit.

(i) If the owner or operator does not establish alternate financial assurance as specified in this section and obtain written approval of the alternate assurance from the department within 90 days after receipt by both the owner or operator and the department of a notice from issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the department will draw on the letter of credit. The department may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any extension the department will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this section and obtain written approval of the assurance from the department.

(j) The department will authorize the release of the letter of credit when any of the following apply:

1. An owner or operator substitutes alternate financial assurance as specified in this section.

2. The department releases the owner or operator from the requirements of this section in accordance with sub. (11).

(5) CLOSURE INSURANCE. (a) An owner or operator may satisfy the requirements of this section by obtaining closure insurance which conforms to the requirements of this subsection and submitting a certificate of the insurance to the department. An owner or operator of a new facility shall submit the certificate of insurance to the department at least 60 days before the date on which hazardous waste is first received for treatment, storage or disposal. The insurance shall be effective before this initial receipt of hazardous waste. At a minimum, the insurer shall be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states. The department, after conferring with the Wisconsin insurance commissioner, shall determine the acceptability of a surplus lines or captive insurance company to provide coverage for proof of financial responsibility. The department shall ask the insurance commissioner to provide a financial analysis of the insurer including a recommendation as to the insurer's ability to provide the required coverage. The department may require a periodic review of the acceptability of a surplus lines or captive insurance company.

(b) The wording of the certificate of insurance shall be identical to the wording on the department form specified in s. NR 664.0151 (5).

(c) The closure insurance policy shall be issued for a face amount at least equal to the current closure cost estimate, except as provided in sub. (9). The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

(d) The closure insurance policy shall guarantee that funds will be available to close the facility whenever final closure occurs. The policy shall also guarantee that once final closure begins, the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the department, to the party or parties as the department specifies.

(e) After beginning partial or final closure, an owner or operator or any other person authorized to conduct closure may request reimbursements for closure expenditures by submitting itemized bills to the department. The owner or operator may request reimbursements for partial closure only if the remaining value of the policy is sufficient to cover the maximum costs of closing the facility over its remaining operating life. Within 60 days after receiving bills for closure activities, the department will instruct the insurer to make reimbursements in the amounts as the department specifies in writing, if the department determines that the partial or final closure expenditures are in accordance with the approved closure plan or otherwise justified. If the department has reason to believe that the maximum cost of closure over the remaining life of the facility will be significantly greater than the face amount of the policy, the department may withhold reimbursements of the amounts as the department deems prudent until the department determines, in accordance with sub. (11), that the owner or operator is no longer required to maintain financial assurance for final closure of the facility. If the department does not instruct the insurer to make the reimbursements, the department will provide the owner or operator with a detailed written statement of reasons.

(f) The owner or operator shall maintain the policy in full force and effect until the department consents to termination of the policy by the owner or operator as specified in par. (j). Failure to pay the premium, without substitution of alternate financial assurance as specified in this section, will constitute a significant violation of this chapter, warranting a remedy as the department deems necessary. The violation will be deemed to begin upon receipt by the department of a notice of future cancellation, termination or

failure to renew due to nonpayment of the premium, rather than upon the date of expiration.

(g) Each policy shall contain a provision allowing assignment of the policy to a successor owner or operator. The assignment may be conditional upon consent of the insurer, provided the consent is not unreasonably refused.

(h) The policy shall provide that the insurer may not cancel, terminate or fail to renew the policy unless a replacement insurance policy or other proof of financial responsibility under this section is provided to the department by the owner or operator. The automatic renewal of the policy shall, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If the insurer elects to cancel, terminate or fail to renew the policy, the insurer shall provide notice by certified mail to the owner or operator and the department not less than 120 days prior to the proposed cancellation date. Cancellation, termination or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the department and the owner or operator, as evidenced by the return receipts. Cancellation, termination or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration any of the following apply:

1. The department deems the facility abandoned.

2. The license is denied, suspended or revoked or a new license is denied.

3. Closure is ordered by the department or a U.S. district court or other court of competent jurisdiction.

4. The owner or operator is named as debtor in a voluntary or involuntary bankruptcy proceeding under 11 USC.

5. The premium due is paid.

(i) Whenever the current closure cost estimate increases to an amount greater than the face amount of the policy, the owner or operator, within 60 days after the increase, shall either cause the face amount to be increased to an amount at least equal to the current closure cost estimate and submit evidence of the increase to the department, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current closure cost estimate decreases, the face amount may be reduced to the amount of the current closure cost estimate following written approval by the department.

(j) The department will give written consent to the owner or operator that the owner or operator may terminate the insurance policy when any of the following apply:

1. An owner or operator substitutes alternate financial assurance as specified in this section.

2. The department releases the owner or operator from the requirements of this section in accordance with sub. (11).

(6) NET WORTH TEST FOR CLOSURE. (a) An owner or operator of a disposal facility may use the net worth test to provide financial responsibility if all of the following are met:

1. Only a company that meets the definition in s. 289.41 (1) (b), Stats., may use the net worth method of providing proof of financial responsibility.

2. The owner or operator shall comply with the net worth test requirements of s. 289.41 (4), (6) and (7), Stats., and the minimum security requirements of s. 289.41 (9), Stats., whichever are applicable.

(b) For companies with more than one facility, the total cost of compliance for all facilities shall be used to determine the net worth to closure and long−term care cost ratio.

(7) CLOSURE DEPOSIT WITH THE DEPARTMENT. An owner may deposit cash, certificates of deposit or U.S. government securities with the department. The deposit must be accompanied by a signed duplicate original of Form 4430−028 as specified in s. NR 664.0151 (14). The amount of the deposit shall be determined according to s. NR 664.0142. Cash deposits placed with the department shall be segregated and invested in an interest bearing account. All interest payments shall be accumulated in the account. The department shall have the right to use part or all of the funds to carry out the closure requirements of the approved closure plan or the applicable requirements in s. NR 664.0112 if the owner fails to do so.

(8) CLOSURE ESCROW ACCOUNT. (a) An owner or operator may satisfy the requirements of this section by establishing a closure escrow account which conforms to the requirements of this subsection and submitting an originally signed duplicate of the escrow agreement to the department. An owner or operator of a new facility shall submit the originally signed duplicate of the escrow agreement to the department at least 60 days before the date on which hazardous waste is first received for treatment, storage or disposal. The escrow agent shall be an entity which has the authority to act as an escrow agent, and the escrow account shall be established with a bank or financial institution which is examined and regulated by the state or a federal agency.

(b) The wording of the escrow agreement shall be identical to the wording on the department form specified in s. NR 664.0151 (6) (a), and the escrow agreement shall be accompanied by a formal certification of acknowledgment as specified in s. NR 664.0151 (6) (b). Schedule A of the escrow agreement shall be updated within 60 days after a change in the amount of the current closure cost estimate covered by the agreement.

(c) Payments into the escrow account shall be made annually by the owner or operator over the term of the initial license or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter. For the purposes of this section, this period is referred to as the "pay−in period." The payments into the closure escrow account shall be made as follows:

1. For a new facility, the first payment shall be made before the initial receipt of hazardous waste for treatment, storage or disposal. A receipt from the escrow agent for this payment shall be submitted by the owner or operator to the department before this initial receipt of hazardous waste. The first payment shall be at least equal to the current closure cost estimate, except as provided in sub. (9), divided by the number of years in the pay−in period. Subsequent payments shall be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment shall be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current closure cost estimate, CV is the current value of the escrow account and Y is the number of years remaining in the pay−in period.

2. If an owner or operator establishes a escrow account as specified in this subsection, and the value of that escrow account is less than the current closure cost estimate when a license is awarded for the facility, the amount of the current closure cost estimate still to be paid into the escrow account shall be paid in over the pay−in period as defined in the introduction to this paragraph. Payments shall continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to ch. NR 665. The amount of each payment shall be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current closure cost estimate, CV is the current value of the escrow account and Y is the number of years remaining in the pay−in period.

(d) The owner or operator may accelerate payments into the escrow account or may deposit the full amount of the current closure cost estimate at the time the account is established. However,

the owner or operator shall maintain the value of the account at no less than the value that the account would have if annual payments were made as specified in par. (c).

(e) If the owner or operator establishes a closure escrow account after having used one or more alternate mechanisms specified in this section or in s. NR 665.0143, the first payment shall be in at least the amount that the account would contain if the escrow account were established initially and annual payments were made according to the specifications of this subsection and s. NR 665.0143 (7), as applicable.

(f) After the pay−in period is completed, whenever the current closure cost estimate changes, the owner or operator shall compare the new estimate with the escrow agent's most recent annual valuation of the escrow account. If the value of the account is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, shall either deposit an amount into the account so that its value after this deposit at least equals the amount of the current closure cost estimate, or obtain other financial assurance as specified in this section to cover the difference.

(g) If the value of the escrow account is greater than the total amount of the current closure cost estimate, the owner or operator may submit a written request to the department for release of the amount in excess of the current closure cost estimate.

(h) If an owner or operator substitutes other financial assurance as specified in this section for all or part of the escrow account, the owner or operator may submit a written request to the department for release of the amount in excess of the current closure cost estimate covered by the escrow account.

(i) Within 60 days after receiving a request from the owner or operator for release of funds as specified in par. (g) or (h), the department will instruct the escrow agent to release to the owner or operator funds as the department specifies in writing.

(j) After beginning partial or final closure, an owner or operator or another person authorized to conduct partial or final closure may request reimbursements for partial or final closure expenditures by submitting itemized bills to the department. The owner or operator may request reimbursements for partial closure only if sufficient funds are remaining in the escrow account to cover the maximum costs of closing the facility over its remaining operating life. Within 60 days after receiving bills for partial or final closure activities, the department will instruct the escrow agent to make reimbursements in those amounts as the department specifies in writing, if the department determines that the partial or final closure expenditures are in accordance with the approved closure plan, or otherwise justified. If the department has reason to believe that the maximum cost of closure over the remaining life of the facility will be significantly greater than the value of the escrow account, the department may withhold reimbursements of amounts as the department deems prudent until the department determines, in accordance with sub. (11) that the owner or operator is no longer required to maintain financial assurance for final closure of the facility. If the department does not instruct the escrow agent to make the reimbursements, the department will provide the owner or operator with a detailed written statement of reasons.

(k) The department will agree to termination of the escrow account when one of the following applies:

1. An owner or operator substitutes alternate financial assurance as specified in this section.

2. The department releases the owner or operator from the requirements of this section in accordance with sub. (11).

(9) USE OF MULTIPLE FINANCIAL MECHANISMS. An owner or operator may satisfy the requirements of this section by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, deposits with the department, surety bonds guaranteeing payment, escrow accounts, letters of credit and insurance. The mechanisms shall be as specified in subs. (1), (2), (4), (5), (7) and (8), except that it is the combination of mechanisms, rather than the single mechanism, which shall provide financial assurance for an amount at least equal to the current closure cost estimate. The department may use any or all of the mechanisms to provide for closure of the facility.

(10) USE OF A FINANCIAL MECHANISM FOR MULTIPLE FACILITIES. An owner or operator may use a financial assurance mechanism specified in this section to meet the requirements of this section for more than one facility. Evidence of financial assurance submitted to the department shall include a list showing, for each facility, the EPA identification number, name, address and the amount of funds for closure assured by the mechanism. If the facilities covered by the mechanism are in more than one state, identical evidence of financial assurance shall be submitted to and maintained with the state agency regulating hazardous waste or with the appropriate U.S. EPA regional administrator if the facility is located in unauthorized states. The amount of funds available through the mechanism shall be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for closure of any of the facilities covered by the mechanism, the department may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

(11) RELEASE OF THE OWNER OR OPERATOR FROM THE REQUIREMENTS OF THIS SECTION. Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that final closure has been completed in accordance with the approved closure plan, the department will notify the owner or operator in writing that the owner or operator is no longer required by this section to maintain financial assurance for final closure of the facility, unless the department has reason to believe that final closure has not been in accordance with the approved closure plan. The department shall provide the owner or operator a detailed written statement of any reason to believe that closure has not been in accordance with the approved closure plan.

Note: The department may consider other financial commitments as allowed by s. 289.41(3)(a)5., Stats.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0144 Cost estimate for long−term care. (1) The owner or operator of a disposal surface impoundment, disposal miscellaneous unit or landfill unit, or of a surface impoundment or waste pile required under ss. NR 664.0228 and 664.0258 to prepare a contingent closure and long−term care plan, shall have a detailed written estimate, in current dollars, of the annual cost of long−term care monitoring and maintenance of the facility according to the applicable long−term care rules in ss. NR 664.0117 to 664.0120, 664.0228, 664.0258, 664.0310 and 664.0603.

(a) The long−term care cost estimate shall be based on the costs to the owner or operator of hiring a third party to conduct long−term care activities. A third party is a party who is neither a parent corporation nor a subsidiary of the owner or operator.

(b) The long−term care cost estimate is calculated by multiplying the annual long−term care cost estimate by the number of years of long−term care required under s. NR 664.0117.

(2) During the active life of the facility, the owner or operator shall adjust the long−term care cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument or instruments used to comply with s. NR 664.0145. For owners or operators of disposal facilities using the net worth test, the long−term care cost estimate shall be updated for inflation as specified in s. 289.41 (5) (d), Stats. The adjustment may be made by recalculating the long−term care cost estimate in current dollars or by using an inflation factor derived from the most recent implicit price deflator for gross domestic product pub-

lished by the U.S. department of commerce in its *Survey of Current Business* as specified in s. NR 664.0145 (2) (a) and (b). The inflation factor is the result of dividing the latest published annual deflator by the deflator for the previous year.

(a) The first adjustment is made by multiplying the long−term care cost estimate by the inflation factor. The result is the adjusted long−term care cost estimate.

(b) Subsequent adjustments are made by multiplying the latest adjusted long−term care cost estimate by the latest inflation factor.

(3) During the active life of the facility, the owner or operator shall revise the long−term care cost estimate within 30 days after the department has approved the request to modify the long−term care plan, if the change in the long−term care plan increases the cost of long−term care. The revised long−term care cost estimate shall be adjusted for inflation as specified in sub. (2).

(4) The owner or operator shall keep the following at the facility during the operating life of the facility: The latest long−term care cost estimate prepared in accordance with subs. (1) and (3) and, when this estimate has been adjusted in accordance with sub. (2), the latest adjusted long−term care cost estimate.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0145 Financial assurance for long−term care. The owner or operator of a hazardous waste management unit subject to s. NR 664.0144 shall establish financial assurance for long−term care according to the approved long−term care plan for the facility 60 days prior to the initial receipt of hazardous waste or the effective date of the rule, whichever is later. The owner or operator shall choose from the following options:

(1) LONG−TERM CARE TRUST FUND. (a) An owner or operator may satisfy the requirements of this section by establishing a long−term care trust fund which conforms to the requirements of this subsection and submitting an originally signed duplicate of the trust agreement to the department. An owner or operator of a new facility shall submit the originally signed duplicate of the trust agreement to the department at least 60 days before the date on which hazardous waste is first received for disposal. The trustee shall be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

(b) The wording of the trust agreement shall be identical to the wording on the department form specified in s. NR 664.0151 (1) (a) and the trust agreement shall be accompanied by a formal certification of acknowledgment as specified in s. NR 664.0151 (1) (b). Schedule A of the trust agreement shall be updated within 60 days after a change in the amount of the current long−term care cost estimate covered by the agreement.

(c) Payments into the trust fund shall be made annually by the owner or operator over the term of the initial license or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter. For the purposes of this section, this period is referred to as the "pay−in period." The payments into the long−term care trust fund shall be made as follows:

1. For a new facility, the first payment shall be made before the initial receipt of hazardous waste for disposal. A receipt from the trustee for this payment shall be submitted by the owner or operator to the department before this initial receipt of hazardous waste. The first payment shall be at least equal to the current long−term care cost estimate, except as provided in sub. (9), divided by the number of years in the pay−in period. Subsequent payments shall be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment shall be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current long−term care cost estimate, CV is the current value of the trust fund and Y is the number of years remaining in the pay−in period.

2. If an owner or operator establishes a trust fund as specified in this subsection, and the value of that trust fund is less than the current long−term care cost estimate when a license is awarded for the facility, the amount of the current long−term care cost estimate still to be paid into the fund shall be paid in over the pay−in period as defined in par. (c) (intro). Payments shall continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to ch. NR 665. The amount of each payment shall be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current long−term care cost estimate, CV is the current value of the trust fund and Y is the number of years remaining in the pay−in period.

(d) The owner or operator may accelerate payments into the trust fund or may deposit the full amount of the current long−term care cost estimate at the time the fund is established. However, the owner or operator shall maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in par. (c).

(e) If the owner or operator establishes a long−term care trust fund after having used one or more alternate mechanisms specified in this section or in s. NR 665.0145, the first payment shall be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of this subsection and s. NR 665.0145 (1), as applicable.

(f) After the pay−in period is completed, whenever the current long−term care cost estimate changes during the operating life of the facility, the owner or operator shall compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, shall either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current long−term care cost estimate, or obtain other financial assurance as specified in this section to cover the difference.

(g) During the operating life of the facility, if the value of the trust fund is greater than the total amount of the current long−term care cost estimate, the owner or operator may submit a written request to the department for release of the amount in excess of the current long−term care cost estimate.

(h) If an owner or operator substitutes other financial assurance as specified in this section for all or part of the trust fund, the owner or operator may submit a written request to the department for release of the amount in excess of the current long−term care cost estimate covered by the trust fund.

(i) Within 60 days after receiving a request from the owner or operator for release of funds as specified in par. (g) or (h), the department will instruct the trustee to release to the owner or operator funds as the department specifies in writing.

(j) During the period of long−term care, the department may approve a release of funds if the owner or operator demonstrates to the department that the value of the trust fund exceeds the remaining cost of long−term care.

(k) An owner or operator or any other person authorized to conduct long−term care may request reimbursements for long−term care expenditures by submitting itemized bills to the department. Within 60 days after receiving bills for long−term care activities, the department will instruct the trustee to make reimbursements in those amounts as the department specifies in writing, if the department determines that the long−term care expendi-

tures are in accordance with the approved long−term care plan or otherwise justified. If the department does not instruct the trustee to make the reimbursements, the department will provide the owner or operator with a detailed written statement of reasons.

(L) The department will agree to termination of the trust when one of the following applies:

1. An owner or operator substitutes alternate financial assurance as specified in this section.

2. The department releases the owner or operator from the requirements of this section in accordance with sub. (11).

(2) SURETY BOND GUARANTEEING PAYMENT INTO A LONG−TERM CARE TRUST FUND. (a) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this subsection and submitting the bond to the department. An owner or operator of a new facility shall submit the bond to the department at least 60 days before the date on which hazardous waste is first received for disposal. The bond shall be effective before this initial receipt of hazardous waste. The surety company issuing the bond shall, at a minimum, be among those listed as acceptable sureties on federal bonds in Circular 570 of the U.S. department of the treasury.

(b) The wording of the surety bond shall be identical to the wording on the department form specified in s. NR 664.0151 (2).

(c) The owner or operator who uses a surety bond to satisfy the requirements of this section shall also establish a standby trust fund. Under the terms of the bond, all payments made shall be deposited by the surety directly into the standby trust fund in accordance with instructions from the department. This standby trust fund must meet the requirements specified in sub. (1), except for all of the following:

1. An originally signed duplicate of the trust agreement must be submitted to the department with the surety bond.

2. Until the standby trust fund is funded pursuant to the requirements of this section, all of the following are not required:

a. Payments into the trust fund as specified in sub. (1).

b. Updating of Schedule A of the trust agreement (see Form 4430−022) to show current post−closure cost estimates.

c. Annual valuations as required by the trust agreement.

d. Notices of nonpayment as required by the trust agreement.

(d) The bond must guarantee that the owner or operator shall do any of the following:

1. Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility.

2. Fund the standby trust fund in an amount equal to the penal sum within 15 days after an administrative order to begin final closure issued by the department becomes final or within 15 days after an order to begin final closure is issued.

3. Provide alternate financial assurance as specified in this section, and obtain the department's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the department of a notice of cancellation of the bond from the surety.

(e) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(f) The penal sum of the bond shall be in an amount at least equal to the current long−term care cost estimate, except as provided in sub. (9).

(g) Whenever the current long−term care cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, shall either cause the penal sum to be increased to an amount at least equal to the current long−term care cost estimate and submit evidence of the increase to the department, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current long−term care cost estimate decreases, the penal sum may be reduced to the amount of the current long−term care cost estimate following written approval by the department.

(h) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the department. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the department, as evidenced by the return receipts. Not less than 30 days prior to the expiration of the 120 day notice period, the owner shall deliver to the department a replacement bond or other proof of financial responsibility under this section, in the absence of which all storage, treatment or disposal operations shall immediately cease and the bond shall remain in effect as long as any obligation of the owner remains for long−term care.

(i) The owner or operator may cancel the bond if the department has given prior written consent based on the receipt of evidence of alternate financial assurance as specified in this section.

(3) SURETY BOND GUARANTEEING PERFORMANCE OF LONG−TERM CARE. (a) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this subsection and submitting the bond to the department. An owner or operator of a new facility shall submit the bond to the department at least 60 days before the date on which hazardous waste is first received for disposal. The bond shall be effective before this initial receipt of hazardous waste. The surety company issuing the bond shall, at a minimum, be among those listed as acceptable sureties on federal bonds in Circular 570 of the U.S. department of the treasury.

(b) The wording of the surety bond shall be identical to the wording on the department form specified in s. NR 664.0151 (3).

(d) The bond shall guarantee that the owner or operator will do one of the following:

1. Perform long−term care in accordance with the long−term care plan and other requirements of the license for the facility.

2. Provide alternate financial assurance as specified in this section, and obtain the department's written approval of the assurance provided, within 90 days of receipt by both the owner or operator and the department of a notice of cancellation of the bond from the surety.

(e) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination by the department that the owner or operator has failed to perform long−term care in accordance with the approved long−term care plan and other license requirements, under the terms of the bond the surety will perform long−term care in accordance with the long−term care plan and other license requirements or shall pay the penal sum of the bond to the department.

(f) The penal sum of the bond shall be in an amount at least equal to the current long−term care cost estimate.

(g) Whenever the current long−term care cost estimate increases to an amount greater than the penal sum during the operating life of the facility, the owner or operator, within 60 days after the increase, shall either cause the penal sum to be increased to an amount at least equal to the current long−term care cost estimate and submit evidence of the increase to the department, or obtain other financial assurance as specified in this section. Whenever the current long−term care cost estimate decreases during the operating life of the facility, the penal sum may be reduced to the amount of the current long−term care cost estimate following written approval by the department.

(h) During the period of long−term care, the department may approve a decrease in the penal sum if the owner or operator demonstrates to the department that the amount exceeds the remaining cost of long−term care.

(i) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or

operator and to the department. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the department, as evidenced by the return receipts. Not less than 30 days prior to the expiration of the 120 day notice period, the owner shall deliver to the department a replacement bond or other proof of financial responsibility under this section, in the absence of which all storage, treatment or disposal operations shall immediately cease and the bond shall remain in effect as long as any obligation of the owner remains for long−term care.

(j) The owner or operator may cancel the bond if the department has given prior written consent. The department will provide written consent when any of the following apply:

1. An owner or operator substitutes alternate financial assurance as specified in this section.

2. The department releases the owner or operator from the requirements of this section in accordance with sub. (11).

(k) The surety will not be liable for deficiencies in the performance of long−term care by the owner or operator after the department releases the owner or operator from the requirements of this section in accordance with sub. (11).

(4) LONG−TERM CARE LETTER OF CREDIT. (a) An owner or operator may satisfy the requirements of this section by obtaining an irrevocable letter of credit which conforms to the requirements of this subsection and submitting the letter to the department. An owner or operator of a new facility shall submit the letter of credit to the department at least 60 days before the date on which hazardous waste is first received for disposal. The letter of credit shall be effective before this initial receipt of hazardous waste. The issuing institution shall be an entity which has the authority to issue letters of credit and whose letter−of−credit operations are regulated and examined by a federal or state agency.

(b) The wording of the letter of credit shall be identical to the wording on the department form specified in s. NR 664.0151 (4).

(d) The letter of credit shall be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution and date, and providing the following information: the EPA identification number, name and address of the facility, and the amount of funds assured for long−term care of the facility by the letter of credit.

(e) The letter of credit shall be irrevocable and issued for a period of at least one year. The letter of credit shall provide that the expiration date will be automatically extended for a period of at least one year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the department by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the department have received the notice, as evidenced by the return receipts.

(f) The letter of credit shall be issued in an amount at least equal to the current long−term care cost estimate, except as provided in sub. (9).

(g) Whenever the current long−term care cost estimate increases to an amount greater than the amount of the credit during the operating life of the facility, the owner or operator, within 60 days after the increase, shall either cause the amount of the credit to be increased so that it at least equals the current long−term care cost estimate and submit evidence of the increase to the department, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current long−term care cost estimate decreases during the operating life of the facility, the amount of the credit may be reduced to the amount of the current long−term care cost estimate following written approval by the department.

(h) During the period of post−closure care, the department may approve a decrease in the amount of the letter of credit if the owner or operator demonstrates to the department that the amount exceeds the remaining cost of long−term care.

(i) Following a determination by the department that the owner or operator has failed to perform long−term care in accordance with the approved long−term care plan and other license requirements, the department may draw on the letter of credit.

(j) If the owner or operator does not establish alternate financial assurance as specified in this section and obtain written approval of the alternate assurance from the department within 90 days after receipt by both the owner or operator and the department of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the department will draw on the letter of credit. The department may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any extension the department will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this section and obtain written approval of the assurance from the department.

(k) The department will authorize the release of the letter of credit when any of the following apply:

1. An owner or operator substitutes alternate financial assurance as specified in this section.

2. The department releases the owner or operator from the requirements of this section in accordance with sub. (11).

(5) LONG−TERM CARE INSURANCE. (a) An owner or operator may satisfy the requirements of this section by obtaining long−term care insurance which conforms to the requirements of this subsection and submitting a certificate of the insurance to the department. An owner or operator of a new facility shall submit the certificate of insurance to the department at least 60 days before the date on which hazardous waste is first received for disposal. The insurance shall be effective before this initial receipt of hazardous waste. At a minimum, the insurer shall be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states. The department, after conferring with the Wisconsin insurance commissioner, shall determine the acceptability of a surplus lines or captive insurance company to provide coverage for proof of financial responsibility. The department shall ask the insurance commissioner to provide a financial analysis of the insurer including a recommendation as to the insurer's ability to provide the required coverage. The department may require a periodic review of the acceptability of a surplus lines or captive insurance company.

(b) The wording of the certificate of insurance shall be identical to the wording on the department form specified in s. NR 664.0151 (5).

(c) The long−term care insurance policy shall be issued for a face amount at least equal to the current long−term care cost estimate, except as provided sub. (9). The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

(d) The long−term care insurance policy shall guarantee that funds will be available to provide long−term care of the facility whenever the long−term care period begins. The policy shall also guarantee that once long−term care begins, the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the department, to the party or parties as the department specifies.

(e) An owner or operator or any other person authorized to conduct long−term care may request reimbursements for long−term care expenditures by submitting itemized bills to the department. Within 60 days after receiving bills for long−term care activities, the department will instruct the insurer to make reimbursements in those amounts as the department specifies in writ-

ing, if the department determines that the long−term care expenditures are in accordance with the approved long−term care plan or otherwise justified. If the department does not instruct the insurer to make the reimbursements, the department will provide the owner or operator with a detailed written statement of reasons.

(f) The owner or operator shall maintain the policy in full force and effect until the department consents to termination of the policy by the owner or operator as specified in par. (k). Failure to pay the premium, without substitution of alternate financial assurance as specified in this section, will constitute a significant violation of this chapter, warranting a remedy as the department deems necessary. The violation will be deemed to begin upon receipt by the department of a notice of future cancellation, termination or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.

(g) Each policy shall contain a provision allowing assignment of the policy to a successor owner or operator. The assignment may be conditional upon consent of the insurer, provided the consent is not unreasonably refused.

(h) The policy shall provide that the insurer may not cancel, terminate or fail to renew the policy unless a replacement insurance policy or other proof of financial responsibility under this section is provided to the department by the owner or operator. The automatic renewal of the policy shall, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If the insurer elects to cancel, terminate or fail to renew the policy, the insurer shall provide notice by certified mail to the owner or operator and the department not less than 120 days prior to the proposed cancellation date. Cancellation, termination or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the department and the owner or operator, as evidenced by the return receipts. Cancellation, termination or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration any of the following apply:

1. The department deems the facility abandoned.

2. The license is denied, suspended or revoked or a new license is denied.

3. Closure is ordered by the department or a U.S. district court or other court of competent jurisdiction.

4. The owner or operator is named as debtor in a voluntary or involuntary bankruptcy proceeding under 11 USC.

5. The premium due is paid.

(i) Whenever the current long−term care cost estimate increases to an amount greater than the face amount of the policy during the operating life of the facility, the owner or operator, within 60 days after the increase, shall either cause the face amount to be increased to an amount at least equal to the current long−term care cost estimate and submit evidence of the increase to the department, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current long−term care cost estimate decreases during the operating life of the facility, the face amount may be reduced to the amount of the current long−term care cost estimate following written approval by the department.

(j) Commencing on the date that liability to make payments pursuant to the policy accrues, the insurer will thereafter annually increase the face amount of the policy. The increase shall be equivalent to the face amount of the policy, less any payments made, multiplied by an amount equivalent to 85% of the most recent investment rate or of the equivalent coupon−issue yield announced by the U.S. treasury for 26−week treasury securities.

(k) The department will give written consent to the owner or operator that the owner or operator may terminate the insurance policy when any of the following apply:

1. An owner or operator substitutes alternate financial assurance as specified in this section.

2. The department releases the owner or operator from the requirements of this section in accordance with sub. (11).

(6) NET WORTH TEST FOR LONG−TERM CARE. (a) An owner or operator of a disposal facility may use the net worth test to provide financial responsibility if all of the following are met:

1. Only a company that meets the definition in s. 289.41 (1) (b), Stats., may use the net worth method of providing proof of financial responsibility.

2. The owner shall comply with the net worth test requirements of s. 289.41 (4), (6) and (7), Stats., and the minimum security requirements of s. 289.41 (9), Stats., whichever are applicable.

(b) For companies with more than one facility, the total cost of compliance for all facilities shall be used to determine the net worth to closure and long−term care cost ratio.

(7) LONG TERM CARE DEPOSIT WITH THE DEPARTMENT. An owner may deposit cash, certificates of deposit or U.S. government securities with the department. The deposit must be accompanied by a signed duplicate original of Form 4430−028 as specified in s. NR 664.0151 (14). The amount of the deposit shall be determined according to s. NR 664.0144 and shall be submitted as part of an interim license application or the feasibility and plan of operation report. Cash deposits placed with the department shall be segregated and invested in an interest bearing account. All interest payments shall be accumulated in the account. The department shall have the right to use part or all of the funds to carry out the long−term care requirements of the approved closure plan or the applicable requirements in this section if the owner fails to do so.

(8) LONG TERM CARE ESCROW ACCOUNT. (a) An owner or operator may satisfy the requirements of this section by establishing a long−term care escrow account which conforms to the requirements of this subsection and submitting an originally signed duplicate of the escrow agreement to the department. An owner or operator of a new facility shall submit the originally signed duplicate of the escrow agreement to the department at least 60 days before the date on which hazardous waste is first received for disposal. The escrow agent shall be an entity which has the authority to act as an escrow agent and the escrow account shall be established with a bank or financial institution which is regulated and examined by a federal or state agency.

(b) The wording of the escrow agreement shall be identical to the wording on the department form specified in s. NR 664.0151 (6) (a), and the escrow agreement shall be accompanied by a formal certification of acknowledgment as specified in s. NR 664.0151 (6) (b). Schedule A of the escrow agreement shall be updated within 60 days after a change in the amount of the current long−term care cost estimate covered by the agreement.

(c) Payments into the escrow account shall be made annually by the owner or operator over the term of the initial license or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter. For the purposes of this section, this period is referred to as the "pay−in period." The payments into the long−term care escrow account shall be made as follows:

1. For a new facility, the first payment shall be made before the initial receipt of hazardous waste for disposal. A receipt from the escrow agent for this payment shall be submitted by the owner or operator to the department before this initial receipt of hazardous waste. The first payment shall be at least equal to the current long−term care cost estimate, except as provided in sub. (9), divided by the number of years in the pay−in period. Subsequent payments shall be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment shall be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current long−term care cost estimate, CV is the current value of the escrow account and Y is the number of years remaining in the pay−in period.

2. If an owner or operator establishes a escrow account as specified in this subsection, and the value of that escrow account is less than the current long−term care cost estimate when a license is awarded for the facility, the amount of the current long−term care cost estimate still to be paid into the account shall be paid in over the pay−in period as defined in the introduction to this paragraph. Payments shall continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to ch. NR 665. The amount of each payment shall be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current long−term care cost estimate, CV is the current value of the escrow account and Y is the number of years remaining in the pay−in period.

(d) The owner or operator may accelerate payments into the escrow account or may deposit the full amount of the current long−term care cost estimate at the time the account is established. However, the owner or operator shall maintain the value of the account at no less than the value that the account would have if annual payments were made as specified in par. (c).

(e) If the owner or operator establishes a long−term care escrow account after having used one or more alternate mechanisms specified in this section or in s. NR 665.0145, the first payment shall be in at least the amount that the account would contain if the escrow account were established initially and annual payments made according to specifications of this subsection and s. NR 665.0145 (7), as applicable.

(f) After the pay−in period is completed, whenever the current long−term care cost estimate changes during the operating life of the facility, the owner or operator shall compare the new estimate with the escrow agent's most recent annual valuation of the escrow account. If the value of the account is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, shall either deposit an amount into the account so that its value after this deposit at least equals the amount of the current long−term care cost estimate, or obtain other financial assurance as specified in this section to cover the difference.

(g) During the operating life of the facility, if the value of the escrow account is greater than the total amount of the current long−term care cost estimate, the owner or operator may submit a written request to the department for release of the amount in excess of the current long−term care cost estimate.

(h) If an owner or operator substitutes other financial assurance as specified in this section for all or part of the escrow account, the owner or operator may submit a written request to the department for release of the amount in excess of the current long−term care cost estimate covered by the escrow account.

(i) Within 60 days after receiving a request from the owner or operator for release of funds as specified in par. (g) or (h), the department will instruct the escrow agent to release to the owner or operator funds as the department specifies in writing.

(j) During the period of long−term care, the department may approve a release of funds if the owner or operator demonstrates to the department that the value of the escrow account exceeds the remaining cost of long−term care.

(k) An owner or operator or any other person authorized to conduct long−term care may request reimbursements for long−term care expenditures by submitting itemized bills to the department. Within 60 days after receiving bills for long−term care activities, the department will instruct the escrow agent to make reimbursements in those amounts as the department specifies in writing, if the department determines that the long−term care expenditures are in accordance with the approved long−term care plan or otherwise justified. If the department does not instruct the escrow agent to make the reimbursements, the department will provide the owner or operator with a detailed written statement of reasons.

(L) The department will agree to termination of the escrow account when one of the following applies:

1. An owner or operator substitutes alternate financial assurance as specified in this section.

2. The department releases the owner or operator from the requirements of this section in accordance with sub. (11).

(9) USE OF MULTIPLE FINANCIAL MECHANISMS. An owner or operator may satisfy the requirements of this section by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds guaranteeing payment, deposits with the department, escrow accounts, letters of credit and insurance. The mechanisms shall be as specified in subs. (1), (2), (4), (5), (7) and (8) except that it is the combination of mechanisms, rather than the single mechanism, which shall provide financial assurance for an amount at least equal to the current long−term care cost estimate. The department may use any or all of the mechanisms to provide for long−term care of the facility.

(10) USE OF A FINANCIAL MECHANISM FOR MULTIPLE FACILITIES. An owner or operator may use a financial assurance mechanism specified in this section to meet the requirements of this section for more than one facility. Evidence of financial assurance submitted to the department shall include a list showing, for each facility, the EPA identification number, name, address and the amount of funds for long−term care assured by the mechanism. If the facilities covered by the mechanism are in more than one state, identical evidence of financial assurance shall be submitted to and maintained with the state agency regulating hazardous waste or with the appropriate EPA regional administrator if the facility is located in unauthorized states. The amount of funds available through the mechanism shall be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for long−term care of any of the facilities covered by the mechanism, the department may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

(11) RELEASE OF THE OWNER OR OPERATOR FROM THE REQUIREMENTS OF THIS SECTION. Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that the long−term care period has been completed for a hazardous waste disposal unit in accordance with the approved plan, the department will notify the owner or operator that the owner or operator is no longer required to maintain financial assurance for long−term care of that unit, unless the department has reason to believe that long−term care has not been in accordance with the approved long−term care plan. The department shall provide the owner or operator with a detailed written statement of any reason to believe that long−term care has not been in accordance with the approved long−term care plan.

Note: The department may consider other financial commitments as allowed by s. 289.41(3)(a)5., Stats.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0146 Use of a mechanism for financial assurance of both closure and long−term care. An owner or operator may satisfy the requirements for financial assurance for both closure and long−term care for one or more facilities by

using an irrevocable trust fund, surety payment or performance bond, deposit with the department, escrow account, letter of credit, insurance or net worth test that meets the specifications for the mechanism in both ss. NR 664.0143 and 664.0145. The amount of funds available through the mechanism shall be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for financial assurance of closure and of long−term care.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0147 Liability requirements. (1) COVERAGE FOR SUDDEN ACCIDENTAL OCCURRENCES. An owner or operator of a hazardous waste treatment, storage or disposal facility, or a group of facilities, shall demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator shall have and maintain liability coverage for sudden accidental occurrences in the amount of at least $1 million per occurrence with an annual aggregate of at least $2 million, exclusive of legal defense costs. This liability coverage may be demonstrated as specified in par. (a), (b), (c), (d), (e) or (f):

(a) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this subsection.

1. Each insurance policy shall be amended by attachment of the hazardous waste facility liability endorsement or evidenced by a certificate of liability insurance. The wording of the endorsement shall be identical to the wording specified in s. NR 664.0151 (9). The wording of the certificate of insurance shall be identical to the wording specified in s. NR 664.0151 (10). The owner or operator shall submit a signed duplicate original of the endorsement or the certificate of insurance to the department and the state agency regulating hazardous waste or with the appropriate EPA regional administrators if the facilities are located in unauthorized states. If requested by the department, the owner or operator shall provide a signed duplicate original of the insurance policy. An owner or operator of a new facility shall submit the signed duplicate original of the hazardous waste facility liability endorsement or the certificate of liability insurance to the department at least 60 days before the date on which hazardous waste is first received for treatment, storage or disposal. The insurance shall be effective before this initial receipt of hazardous waste.

2. Each insurance policy shall be issued by an insurer which, at a minimum, is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states.

3. The department, after conferring with the Wisconsin insurance commissioner, shall determine the acceptability of a surplus lines or captive insurance company to provide coverage for proof of financial responsibility. The department shall ask the insurance commissioner to provide a financial analysis of the insurer including a recommendation as to the insurer's ability to provide the required coverage. The department may require a periodic review of the acceptability of a surplus lines or captive insurance company.

(b) An owner or operator may meet the requirements of this section by passing a financial test or using the guarantee for liability coverage as specified in subs. (6) and (7).

(c) An owner or operator may meet the requirements of this section by obtaining a letter of credit for liability coverage as specified in sub. (8).

(d) An owner or operator may meet the requirements of this section by obtaining a surety bond for liability coverage as specified in sub. (9).

(e) An owner or operator may meet the requirements of this section by obtaining a trust fund for liability coverage as specified in sub. (10).

(f) An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, guarantee, letter of credit, surety bond and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated shall total at least the minimum amounts required by this section. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this subsection, the owner or operator shall specify at least one assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

(g) An owner or operator shall notify the department in writing within 30 days whenever any of the following occur:

1. A claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in pars. (a) to (f).

2. A Certification of Valid Claim for bodily injury or property damages caused by a sudden or non−sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage or disposal facility is entered between the owner or operator and third−party claimant for liability coverage under pars. (a) to (f).

3. A final court order establishing a judgment for bodily injury or property damage caused by a sudden or non−sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under pars. (a) to (f).

(2) COVERAGE FOR NONSUDDEN ACCIDENTAL OCCURRENCES. An owner or operator of a surface impoundment, landfill, or disposal miscellaneous unit that is used to manage hazardous waste, or a group of facilities, shall demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator shall have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least $3 million per occurrence with an annual aggregate of at least $6 million, exclusive of legal defense costs. An owner or operator who shall meet the requirements of this section may combine the required per−occurrence coverage levels for sudden and nonsudden accidental occurrences into a single per−occurrence level, and combine the required annual aggregate coverage levels for sudden and nonsudden accidental occurrences into a single annual aggregate level. Owners or operators who combine coverage levels for sudden and nonsudden accidental occurrences shall maintain liability coverage in the amount of at least $4 million per occurrence and $8 million annual aggregate. This liability coverage may be demonstrated as specified in par. (a), (b), (c), (d), (e) or (f):

(a) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this subsection.

1. Each insurance policy shall be amended by attachment of the hazardous waste facility liability endorsement or evidenced by a certificate of liability insurance. The wording of the endorsement shall be identical to the wording specified in s. NR 664.0151 (9). The wording of the certificate of insurance shall be identical to the wording specified in s. NR 664.0151 (10). The owner or operator shall submit a signed duplicate original of the endorsement or the certificate of insurance to the department and the state agency regulating hazardous waste or with the EPA regional administrators if the facilities are located in unauthorized states. If requested by the department, the owner or operator shall provide a signed duplicate original of the insurance policy. An owner or operator of a new facility shall submit the signed duplicate original of the hazardous waste facility liability endorsement or the

certificate of liability insurance to the department at least 60 days before the date on which hazardous waste is first received for treatment, storage or disposal. The insurance shall be effective before this initial receipt of hazardous waste.

2. Each insurance policy shall be issued by an insurer which, at a minimum, is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states.

3. The department, after conferring with the Wisconsin insurance commissioner, shall determine the acceptability of a surplus lines or captive insurance company to provide coverage for proof of financial responsibility. The department shall ask the insurance commissioner to provide a financial analysis of the insurer including a recommendation as to the insurer's ability to provide the required coverage. The department may require a periodic review of the acceptability of a surplus lines or captive insurance company.

(b) An owner or operator may meet the requirements of this section by passing a financial test or using the guarantee for liability coverage as specified in subs. (6) and (7).

(c) An owner or operator may meet the requirements of this section by obtaining a letter of credit for liability coverage as specified in sub. (8).

(d) An owner or operator may meet the requirements of this section by obtaining a surety bond for liability coverage as specified in sub. (9).

(e) An owner or operator may meet the requirements of this section by obtaining a trust fund for liability coverage as specified in sub. (10).

(f) An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, guarantee, letter of credit, surety bond and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated shall total at least the minimum amount required by this section. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this subsection, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

(g) An owner or operator shall notify the department in writing within 30 days whenever any of the following occur:

1. A claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in pars. (a) to (f).

2. A certification of valid claim for bodily injury or property damages caused by a sudden or non−sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage or disposal facility is entered between the owner or operator and third−party claimant for liability coverage under pars. (a) to (f).

3. A final court order establishing a judgment for bodily injury or property damage caused by a sudden or non−sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under pars. (a) to (f).

(3) REQUEST FOR VARIANCE. If an owner or operator can demonstrate to the satisfaction of the department that the levels of financial responsibility required by sub. (1) or (2) are not consistent with the degree and duration of risk associated with treatment, storage or disposal at the facility or group of facilities, the owner or operator may obtain a variance from the department. The request for a variance shall be submitted to the department as part of the application under s. NR 670.014 for a facility that does not have a license, or pursuant to the procedures for license modification under s. NR 670.405 for a facility that has a license. If granted, the variance will take the form of an adjusted level of required liability coverage, the level to be based on the department's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. The department may require an owner or operator who requests a variance to provide the technical and engineering information as is deemed necessary by the department to determine a level of financial responsibility other than that required by sub. (1) or (2). Any request for a variance for a licensed facility will be treated as a request for a license modification under ss. NR 670.041 (1) (e) and 670.405.

(4) ADJUSTMENTS BY THE DEPARTMENT. If the department determines that the levels of financial responsibility required by sub. (1) or (2) are not consistent with the degree and duration of risk associated with treatment, storage or disposal at the facility or group of facilities, the department may adjust the level of financial responsibility required under sub. (1) or (2) as may be necessary to protect human health and the environment. This adjusted level will be based on the department's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. In addition, if the department determines that there is a significant risk to human health and the environment from nonsudden accidental occurrences resulting from the operations of a facility that is not a surface impoundment or landfill , the department may require that an owner or operator of the facility comply with sub. (2). An owner or operator shall furnish to the department, within a reasonable time, any information which the department requests to determine whether cause exists for adjustments of level or type of coverage. Any adjustment of the level or type of coverage for a facility that has a license will be treated as a license modification under ss. NR 670.041 (1) (e) and 670.405.

(5) PERIOD OF COVERAGE. Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that final closure has been completed in accordance with the approved closure plan, the department will notify the owner or operator in writing that the owner or operator is no longer required to maintain liability coverage for that facility, unless the department has reason to believe that closure has not been in accordance with the approved closure plan.

(6) FINANCIAL TEST FOR LIABILITY COVERAGE. (a) An owner or operator may satisfy the requirements of this section by demonstrating that the owner or operator passes a financial test as specified in this subsection. To pass this test the owner or operator shall meet the criteria of subd. 1. or 2.:

1. The owner or operator shall have all of the following:

a. Net working capital and tangible net worth each at least 6 times the amount of liability coverage to be demonstrated by this test.

b. Tangible net worth of at least $10 million.

c. Assets in the United States amounting to either:

1) At least 90% of the owner or operator's total assets.

2) At least 6 times the amount of liability coverage to be demonstrated by this test.

2. The owner or operator shall have all of the following:

a. A current rating for the owner or operator's most recent bond issuance of AAA, AA, A or BBB as issued by Standard and Poor's, or Aaa, Aa, A or Baa as issued by Moody's.

b. Tangible net worth of at least $10 million.

c. Tangible net worth at least 6 times the amount of liability coverage to be demonstrated by this test.

d. Assets in the United States amounting to either:

1) At least 90% of the owner or operator's total assets.

2) At least 6 times the amount of liability coverage to be demonstrated by this test.

(b) The phrase "amount of liability coverage" as used in par. (a) refers to the annual aggregate amounts for which coverage is required under subs. (1) and (2).

(c) To demonstrate that the owner or operator meets this test, the owner or operator shall submit the following 3 items to the department:

1. A letter signed by the owner's or operator's chief financial officer and worded as specified in s. NR 664.0151 (7).

2. A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year.

3. A special report from the owner's or operator's independent certified public accountant to the owner or operator stating all of the following:

a. The independent certified public accountant has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year−end financial statements for the latest fiscal year with the amounts in the financial statements.

b. In connection with that procedure, no matters came to the attention of the independent certified public accountant which would provide cause to believe that the specified data should be adjusted.

(d) An owner or operator of a new facility shall submit the items specified in par. (c) to the department at least 60 days before the date on which hazardous waste is first received for treatment, storage or disposal.

(e) After the initial submission of items specified in par. (c), the owner or operator shall send updated information to the department within 90 days after the close of each succeeding fiscal year. This information shall consist of all 3 items specified in par. (c).

(f) If the owner or operator no longer meets the requirements of par. (a), the owner or operator shall obtain insurance, a letter of credit, a surety bond, a trust fund or a guarantee for the entire amount of required liability coverage as specified in this section. Evidence of liability coverage shall be submitted to the department within 90 days after the end of the fiscal year for which the year−end financial data show that the owner or operator no longer meets the test requirements.

(g) The department may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in the accountant's report on examination of the owner's or operator's financial statements (see par. (c) 2.). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The department will evaluate other qualifications on an individual basis. The owner or operator shall provide evidence of insurance for the entire amount of required liability coverage as specified in this section within 30 days after notification of disallowance.

(7) GUARANTEE FOR LIABILITY COVERAGE. (a) Subject to par. (b), an owner or operator may meet the requirements of this section by obtaining a written guarantee, referred to as "guarantee." The guarantor shall be the direct or higher−tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a substantial business relationship with the owner or operator. The guarantor shall meet the requirements for owners or operators in subs. (6) (a) to (f). The wording of the guarantee shall be identical to the wording specified in s. NR 664.0151 (8). A certified copy of the guarantee shall accompany the items sent to the department as specified in sub. (6) (c). One of these items shall be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, this letter shall describe the value received in consideration of the guarantee. If the guarantor is a firm with a substantial business relationship with the owner or operator, this letter shall describe this substantial business relationship and the value received in consideration of the guarantee.

1. If the owner or operator fails to satisfy a judgment based on a determination of liability for bodily injury or property damage to third parties caused by sudden or nonsudden accidental occurrences (or both as the case may be), arising from the operation of facilities covered by this corporate guarantee, or fails to pay an amount agreed to in settlement of claims arising from or alleged to arise from the injury or damage, the guarantor will do so up to the limits of coverage. The guarantee shall remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the department. This guarantee may not be terminated unless and until the department approves alternate liability coverage complying with this section.

(b) 1. In the case of corporations incorporated in the United States, a guarantee may be used to satisfy the requirements of this section only if the attorneys general or insurance commissioners of the following states have submitted a written statement to the department that a guarantee executed as described in this section and s. NR 664.0151 (8), 40 CFR 264.151(h)(2) or other state requirements that are equivalent to 40 CFR 264.151(h)(2) is a legally valid and enforceable obligation in that state:

a. The state in which the guarantor is incorporated.

b. Each state in which a facility covered by the guarantee is located.

2. In the case of corporations incorporated outside the United States, a guarantee may be used to satisfy the requirements of this section only if all of the following conditions are met:

a. The non−U.S. corporation has identified a registered agent for service of process in each state in which a facility covered by the guarantee is located and in the state in which it has its principal place of business.

b. The attorney general or insurance commissioner of each state in which a facility covered by the guarantee is located and the state in which the guarantor corporation has its principal place of business, has submitted a written statement to the department that a guarantee executed as described in this section and s. NR 664.0151 (8), 40 CFR 264.151(h)(2) or other state requirements that are equivalent to 40 CFR 264.151(h)(2) is a legally valid and enforceable obligation in that state.

(8) LETTER OF CREDIT FOR LIABILITY COVERAGE. (a) An owner or operator may satisfy the requirements of this section by obtaining an irrevocable letter of credit that conforms to the requirements of this subsection and submitting a copy of the letter of credit to the department.

(b) The financial institution issuing the letter of credit shall be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a federal or state agency.

(c) The wording of the letter of credit shall be identical to the wording specified in s. NR 664.0151 (11).

(9) SURETY BOND FOR LIABILITY COVERAGE. (a) An owner or operator may satisfy the requirements of this section by obtaining a surety bond that conforms to the requirements of this subsection and submitting a copy of the bond to the department.

(b) The surety company issuing the bond shall be among those listed as acceptable sureties on federal bonds in the most recent circular 570 of the U.S. department of the treasury.

(c) The wording of the surety bond shall be identical to the wording specified in s. NR 664.0151 (12).

(d) A surety bond may be used to satisfy the requirements of this section only if the attorneys general or insurance commissioners of the following states have submitted a written statement to the department that a surety bond executed as described in this section and s. NR 664.0151 (12), 40 CFR 264.151(1) or other state requirements that are equivalent to 40 CFR 264.151(l) is a legally valid and enforceable obligation in that state:

1. The state in which the surety is incorporated.

2. Each state in which a facility covered by the surety bond is located.

(10) TRUST FUND FOR LIABILITY COVERAGE. (a) An owner or operator may satisfy the requirements of this section by establishing a trust fund that conforms to the requirements of this subsection and submitting an originally signed duplicate of the trust agreement to the department.

(b) The trustee shall be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

(c) The trust fund for liability coverage shall be funded for the full amount of the liability coverage to be provided by the trust fund before it may be relied upon to satisfy the requirements of this section. If at any time after the trust fund is created the amount of funds in the trust fund is reduced below the full amount of the liability coverage to be provided, the owner or operator, by the anniversary date of the establishment of the fund, shall either add sufficient funds to the trust fund to cause its value to equal the full amount of liability coverage to be provided, or obtain other financial assurance as specified in this section to cover the difference. For purposes of this subsection, "the full amount of the liability coverage to be provided" means the amount of coverage for sudden or nonsudden occurrences, or both, required to be provided by the owner or operator by this section, less the amount of financial assurance for liability coverage that is being provided by other financial assurance mechanisms being used to demonstrate financial assurance by the owner or operator.

(d) The wording of the trust fund shall be identical to the wording specified in s. NR 664.0151 (13).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0148 Incapacity of owners or operators, guarantors or financial institutions. (1) An owner or operator shall notify the department by certified mail of the commencement of a voluntary or involuntary bankruptcy proceeding under 11 USC, naming the owner or operator as debtor, within 10 days after commencement of the proceeding.

(2) An owner or operator who fulfills the requirements of s. NR 664.0143, 664.0145 or 664.0147 by obtaining a trust fund, surety bond, letter of credit or insurance policy will be deemed to be without the required financial assurance or liability coverage in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee institution to act as trustee or of the institution issuing the surety bond, letter of credit or insurance policy to issue the instruments. The owner or operator shall establish other financial assurance or liability coverage within 60 days after such an event.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0151 Wording of the instruments. (1) (a) A trust agreement for a trust fund, as specified in s. NR 664.0143 (1), 664.0145 (1), 665.0143 (1) or 665.0145 (1), must be identical to the wording of Form 4430−022 Trust Agreement.

Note: Form 4430−022 may be obtained from: http://dnr.wi.gov/topic/Waste/Financial.html, or by E−mail: waste.management@dnr.state.wi.us, phone (608) 266−2111 or Fax (608) 267−2768.

(b) The following is an example of the certification of acknowledgment which must accompany the trust agreement for a trust fund as specified in s. NR 664.0143 (1), 664.0145 (1), 665.0143 (1) or 665.0145 (1).

State of _____

County of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

_____

[Signature of Notary Public]

(2) A surety bond guaranteeing payment into a trust fund, as specified in s. NR 664.0143 (2), 664.0145 (2), 665.0143 (2) or 665.0145 (2), must be identical to the wording of Form 4430−023 Financial Guarantee Bond.

Note: Form 4430−023 may be obtained from: http://dnr.wi.gov/topic/Waste/Financial.html, or by E−mail: waste.management@dnr.state.wi.us, phone (608) 266−2111 or Fax (608) 267−2768.

(3) A surety bond guaranteeing performance of closure or long−term care or both, as specified in s. NR 664.0143 (3) or 664.0145 (3), must be worded identical to the wording of Form 4430−024 Performance Bond.

Note: Form 4430−024 may be obtained from: http://dnr.wi.gov/topic/Waste/Financial.html, or by E− mail at waste.management@dnr.state.wi.us, phone (608) 266−2111 or Fax (608) 267−2768.

(4) A letter of credit, as specified in s. NR 664.0143 (4), 664.0145 (4), 665.0143 (3) or 665.0145 (3), must be worded identical to the wording of Form 4430−025 Irrevocable Letter of Credit.

Note: Form 4430−025 may be obtained from: http://dnr.wi.gov/topic/Waste/Financial.html, or by E−mail: waste.management@dnr.state.wi.us, phone (608) 266−2111 or Fax (608) 267−2768.

(5) A certificate of insurance, as specified in s. NR 664.0143 (5), 664.0145 (5), 665.0143 (4) or 665.0145 (4), must be identical to the wording of Form 4430−026 Certificate of Insurance for Closure and Long−Term Care.

Note: Form 4430−026 may be obtained from: http://dnr.wi.gov/topic/Waste/Financial.html, or by E−mail: waste.management@dnr.state.wi.us, phone (608) 266−2111 or Fax (608) 267−2768.

(6) (a) An escrow agreement, as specified in s. NR 664.0143 (8), 664.0145 (8), 665.0143 (7) or 665.0145 (7), must be identical to the wording of Form 4430−027 Escrow Agreement.

Note: Form 4430−027 may be obtained from: http://dnr.wi.gov/topic/Waste/Financial.html, or by E−mail: waste.management@dnr.state.wi.us, phone (608) 266−2111 or Fax (608) 267−2768.

(b) The following is an example of the certification of acknowledgment which must accompany the escrow account specified in s. NR 664.0143 (8), 664.0145 (8), 665.0143 (7) or 665.0145 (7):

State of _____

County of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

_____

[Signature of Notary Public]

(7) A letter from the chief financial officer, as specified in s. NR 664.0147 (6) or 665.0147 (6), must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Letter from Chief Financial Officer

[For facilities demonstrating financial responsibility through the financial test, address to Wisconsin Department of Natural Resources, the state agency of other affected authorized states and the administrator of affected EPA regions if the facilities are in unauthorized states.]

I am the chief financial officer of [firm's name and address]. This letter is in support of the use of the financial test to demonstrate financial responsibility for liability coverage as specified in subch. H. of ch. NR 664 and subch. H. of ch. NR 665, Wis. Adm. Code.

[Fill out the following paragraphs regarding facilities and liability coverage. If there are no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its EPA Identification Number, name and address].

The firm identified above is the owner or operator of the following facilities for which liability coverage for [insert "sudden" or "nonsudden" or "both sudden and nonsudden"] accidental occurrences is being demonstrated through the financial test specified in subch. H. of ch. NR 664 and subch. H of ch. NR 665, Wis. Adm. Code:____

The firm identified above guarantees, through the guarantee specified in subch. H. of ch. NR 664 and subch. H. of ch. NR 665, Wis. Adm. Code, liability coverage for [insert "sudden" or "nonsudden" or "both sudden and nonsudden"] accidental occurrences at the following facilities owned or operated by the following: ____. The firm identified above is [insert one or more: (1) The direct or higher−tier parent corporation of the owner or operator; (2) owned by the same parent corporation as the parent corporation of the owner or operator, and receiving the following value in consideration of this guarantee ____; or (3) engaged in the following substantial business relationship with the owner or operator ____, and receiving the following value in consideration of this guarantee ____]. [Attach a written description of the business relationship or a copy of the contract establishing such relationship to this letter.]

This firm [insert "is required" or "is not required"] to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on [month, day]. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year−end financial statements for the latest completed fiscal year, ended [date].

Part A. Liability Coverage for Accidental Occurrences

[Fill in Alternative I if the criteria of s. NR 664.0147 (6) (a) 1. or 665.0147 (6) (a) 1., Wis. Adm. Code, are used. Fill in Alternative II if the criteria of s. NR 664.0147 (6) (a) 2. or 665.0147 (6) (a) 2., Wis. Adm. Code, are used.]

ALTERNATIVE I

1. Amount of annual aggregate liability coverage to be demonstrated $ ____.

*2. Current assets $ ____.

*3. Current liabilities $ ____.

4. Net working capital (line 2 minus line 3) $ ____.

*5. Tangible net worth $ ____.

*6. If less than 90% of assets are located in the U.S., give total U.S. assets $ ____.

7. Is line 5 at least $10 million? (Yes/No) ____.

8. Is line 4 at least 6 times line 1? (Yes/No) ____.

9. Is line 5 at least 6 times line 1? (Yes/No) ____.

*10. Are at least 90% of assets located in the U.S.? (Yes/No) ____. If not, complete line 11.

11. Is line 6 at least 6 times line 1? (Yes/No) ____.

ALTERNATIVE II

1. Amount of annual aggregate liability coverage to be demonstrated $ ____.

2. Current bond rating of most recent issuance and name of rating service ____ ____.

3. Date of issuance of bond ____ ____.

4. Date of maturity of bond ____ ____.

*5. Tangible net worth $ ____.

*6. Total assets in U.S. (required only if less than 90% of assets are located in the U.S.) $ ____.

7. Is line 5 at least $10 million? (Yes/No) ____.

8. Is line 5 at least 6 times line 1? ____.

9. Are at least 90% of assets located in the U.S.? If not, complete line 10. (Yes/No) ____.

10. Is line 6 at least 6 times line 1? ____.

(8) A guarantee, as specified in s. NR 664.0147 (7) or 665.0147 (7), must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Guarantee for Liability Coverage

Guarantee made this [date] by [name of guaranteeing entity], a business corporation organized under the laws of [if incorporated within the United States insert "the State of ____" and insert name of State; if incorporated outside the United States insert the name of the country in which incorporated, the principal place of business within the United States, and the name and address of the registered agent in the State of the principal place of business], herein referred to as guarantor. This guarantee is made on behalf of [owner or operator] of [business address], which is one of the following: "our subsidiary;" "a subsidiary of [name and address of common parent corporation], of which guarantor is a subsidiary;" or "an entity with which guarantor has a substantial business relationship, as defined in s. NR 664.0141 (8) or 665.0141 (8), Wis. Adm. Code", to any and all third parties who have sustained or may sustain bodily injury or property damage caused by [sudden and/or nonsudden] accidental occurrences arising from operation of the facility(ies) covered by this guarantee.

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in ss. NR 664.0147 (7) and 665.0147 (7), Wis. Adm. Code.

2. [Owner or operator] owns or operates the following hazardous waste management facility(ies) covered by this guarantee: [List for each facility: EPA identification number, name and address; and if guarantor is incorporated outside the United States list the name and address of the guarantor's registered agent in each State.] This corporate guarantee satisfies RCRA third−party liability requirements for [insert "sudden" or "nonsudden" or "both sudden and nonsudden"] accidental occurrences in above−named owner or operator facilities for coverage in the amount of [insert dollar amount] for each occurrence and [insert dollar amount] annual aggregate.

3. For value received from [owner or operator], guarantor guarantees to any and all third parties who have sustained or may sustain bodily injury or property damage caused by [sudden and/or nonsudden] accidental occurrences arising from operations of the facility(ies) covered by this guarantee that in the event that [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by [sudden and/or nonsudden] accidental occurrences, arising from the operation of the above−named facilities, or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from the injury or damage, the guarantor will satisfy the judgment(s), award(s) or settlement agreement(s) up to the limits of coverage identified above.

4. The obligation does not apply to any of the following:

(a) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert owner or operator] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) An employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator]; or

(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert owner or operator]. This exclusion applies:

(A) Whether [insert owner or operator] may be liable as an employer or in any other capacity; and

(B) To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use or entrustment to others of any aircraft, motor vehicle or watercraft.

(e) Property damage to:

(1) Any property owned, rented or occupied by [insert owner or operator];

(2) Premises that are sold, given away or abandoned by [insert owner or operator] if the property damage arises out of any part of those premises;

(3) Property loaned to [insert owner or operator];

(4) Personal property in the care, custody or control of [insert owner or operator];

(5) That particular part of real property on which [insert owner or operator] or any contractors or subcontractors working directly or indirectly on behalf of [insert owner or operator] are performing operations, if the property damage arises out of these operations.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor must send within 90 days, by certified mail, notice to the Department, and if the facilities covered by this guarantee are in more than one state, to each state agency regulating hazardous waste or the EPA regional administrator if the facility is located in an unauthorized state, and to [owner or operator] that he intends to provide alternate liability coverage as specified in ss. NR 664.0147 and 665.0147, Wis. Adm. Code, or 40 CFR 264.147 and 265.147 or other state requirements that are equivalent to 40 CFR 264.147 and 265.147, as applicable, in the name of [owner or operator]. Within 120 days after the end of the fiscal year, the guarantor shall establish the liability coverage unless [owner or operator] has done so.

6. The guarantor agrees to notify the Department by certified mail of a voluntary or involuntary proceeding under title 11 (bankruptcy), U.S. code, naming guarantor as debtor, within 10 days after commencement of the proceeding.

7. Guarantor agrees that within 30 days after being notified by the Department of a determination that guarantor no longer meets the financial test criteria or that the guarantor is disallowed from continuing as a guarantor, the guarantor shall establish alternate liability coverage as specified in s. NR 664.0147 or 665.0147, Wis. Adm. Code, in the name of [owner or operator], unless [owner or operator] has done so.

8. Guarantor reserves the right to modify this agreement to take into account amendment or modification of the liability requirements set by ss. NR 664.0147 and 665.0147, Wis. Adm. Code, provided that the modification must become effective only if the Department does not disapprove the modification within 30 days of receipt of notification of the modification.

9. Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] shall comply with the applicable requirements of ss. NR 664.0147 and 665.0147, Wis. Adm. Code, for the above−listed facility(ies), except as provided in paragraph 10 of this agreement.

10. [Insert the following language if the guarantor is (a) a direct or higher−tier corporate parent, or (b) a firm whose parent corporation is also the parent corporation of the owner or operator]:

Guarantor may terminate this guarantee by sending notice by certified mail to the Department, and if the facilities covered by this guarantee are in more than one state, to each state agency regulating hazardous waste or the EPA regional administrator if the facility is located in an unauthorized state and to [owner or operator], provided that this guarantee may not be terminated unless and until [the owner or operator] obtains Department approval, and the approval from the state agency regulating hazardous waste or the EPA Regional Administrator approval if the facility is operating in unauthorized states of alternate liability coverage complying with ss. NR 664.0147 and 665.0147, Wis. Adm. Code, 40 CFR 264.147 or 265.147 or other state requirements that are equivalent to 40 CFR 264.147 or 265.147.

[Insert the following language if the guarantor is a firm qualifying as a guarantor due to its "substantial business relationship" with the owner or operator]:

Guarantor may terminate this guarantee 120 days following receipt of notification, through certified mail, by the Department, and if the facilities covered by this guarantee are in more than one state, by each state agency regulating hazardous waste or the EPA regional administrator if the facility is located in an unauthorized state and by [the owner or operator].

11. Guarantor hereby expressly waives notice of acceptance of this guarantee by any party.

12. Guarantor agrees that this guarantee is in addition to and does not affect any other responsibility or liability of the guarantor with respect to the covered facilities.

13. The Guarantor must satisfy a third−party liability claim only on receipt of one of the following documents:

(a) Certification from the Principal and the third−party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Certification of Valid Claim

The undersigned, as parties [insert Principal] and [insert name and address of third−party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating [Principal's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $_____.

[Signatures]_____

Principal_____

(Notary) Date_____

[Signatures]_____

Claimant(s)_____

(Notary) Date_____

(b) A valid final court order establishing a judgment against the Principal for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Principal's facility or group of facilities.

14. In the event of combination of this guarantee with another mechanism to meet liability requirements, this guarantee will be considered [insert "primary" or "excess"] coverage.

I hereby certify that the wording of the guarantee is identical to the wording specified in s. NR 664.0151 (8), Wis. Adm. Code, as the rules were constituted on the date shown immediately below.

Effective date:_____

[Name of guarantor]_____

[Authorized signature for guarantor]_____

[Name of person signing]_____

[Title of person signing]_____

Signature of witness of notary:_____

(9) A hazardous waste facility liability endorsement as required in s. NR 664.0147 or 665.0147 must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Hazardous Waste Facility Liability Endorsement

1. This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering bodily injury and property damage in connection with the insured's obligation to demonstrate financial responsibility under s. NR 664.0147 or 665.0147, Wis. Adm. Code. The coverage applies at [list EPA Identification Number, name and address for each facility] for [insert "sudden accidental occurrences," "nonsudden accidental occurrences," or "sudden and nonsudden accidental occurrences"; if coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for sudden accidental occurrences, which are insured for nonsudden accidental occurrences, and which are insured for both]. The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's liability], exclusive of legal defense costs.

2. The insurance afforded with respect to the occurrences is subject to all of the terms and conditions of the policy; provided, however, that any provisions of the policy inconsistent with subsections (a) through (e) of this Paragraph 2 are hereby amended to conform with subsections (a) through (e):

(a) Bankruptcy or insolvency of the insured may not relieve the Insurer of its obligations under the policy to which this endorsement is attached.

(b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in s. NR 664.0147 (6) or 665.0147 (6), Wis. Adm. Code.

(c) Whenever requested by the Wisconsin Department of Natural Resources, the Insurer agrees to furnish to the Department a signed duplicate original of the policy and all endorsements.

(d) Cancellation of this endorsement, whether by the Insurer, the insured, a parent corporation providing insurance coverage for its subsidiary or by a firm having an insurable interest in and obtaining liability insurance on behalf of the owner or operator of the hazardous waste management facility, will be effective only upon written notice and only after the expiration of 60 days after a copy of the written notice is received by the Department, and if the facilities covered by this endorsement are in more than one state, each state agency regulating hazardous waste or the EPA Regional Administrator if the facility is located in an unauthorized state.

(e) Any other termination of this endorsement will be effective only upon written notice and only after the expiration of 30 days after a copy of the written notice is received by the Department, and if the facilities covered by this endorsement are in more than one state, each state agency regulating hazardous waste or the EPA Regional Administrator if the facility is located in an unauthorized state.

Attached to and forming part of policy No. ___ issued by [name of Insurer], herein called the Insurer, of [address of Insurer] to [name of insured] of [address] this __ day of ___, 20_. The effective date of said policy is __ day of ___, 20_.

I hereby certify that the wording of this endorsement is identical to the wording specified in s. NR 664.0151 (9), Wis. Adm. Code, as the rules were constituted on the date first above written, and that the Insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

[Signature of Authorized Representative of Insurer]

[Type name]

[Title], Authorized Representative of [name of Insurer]

[Address of Representative]

(10) A certificate of liability insurance as required in s. NR 664.0147 or 665.0147 must be worded as follows, except that the instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Hazardous Waste Facility Certificate of Liability Insurance

1. [Name of Insurer], (the "Insurer"), of [address of Insurer] hereby certifies that it has issued liability insurance covering bodily injury and property damage to [name of insured], (the "insured"), of [address of insured] in connection with the insured's obligation to demonstrate financial responsibility under s. NR 664.0147 or 665.0147, Wis. Adm. Code. The coverage applies at [list EPA Identification Number, name and address for each facility] for [insert "sudden accidental occurrences," "nonsudden accidental occurrences," or "sudden and nonsudden accidental occurrences"; if coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for sudden accidental occurrences, which are insured for nonsudden accidental occurrences and which are insured for both]. The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's liability], exclusive of legal defense costs. The coverage is provided under policy number ___, issued on [date]. The effective date of said policy is [date].

2. The Insurer further certifies the following with respect to the insurance described in Paragraph 1:

(a) Bankruptcy or insolvency of the insured may not relieve the Insurer of its obligations under the policy.

(b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in s. NR 664.0147 (6) or 665.0147 (6), Wis. Adm. Code.

(c) Whenever requested by the Wisconsin Department of Natural Resources, the Insurer agrees to furnish to the Department a signed duplicate original of the policy and all endorsements.

(d) Cancellation of the insurance, whether by the insurer, the insured, a parent corporation providing insurance coverage for its subsidiary or by a firm having an insurable interest in and obtaining liability insurance on behalf of the owner or operator of the hazardous waste management facility, will be effective only upon written notice and only after the expiration of 60 days after a copy of the written notice is received by the Department, and if the facilities covered by this insurance are in more than one state, each state agency regulating hazardous waste or the EPA Regional Administrator if the facility is located in an unauthorized state.

(e) Any other termination of the insurance will be effective only upon written notice and only after the expiration of 30 days after a copy of the written notice is received by the Department, and if the facilities covered by this insurance are in more than one state, each state agency regulating hazardous waste or the EPA Regional Administrator if the facility is located in an unauthorized state. I hereby certify that the wording of this instrument is identical to the wording specified in s. NR 664.0151 (10), Wis. Adm. Code, as the rules were constituted on the date first above written, and that the Insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

The Wisconsin Administrative Code on this web site is updated on the 1st day of each month, current as of that date. See also Are the Codes on this Website Official?

[Signature of authorized representative of Insurer]

[Type name]

[Title], Authorized Representative of [name of Insurer]

[Address of Representative]

(11) A letter of credit, as specified in s. NR 664.0147 (8) or 665.0147 (8), must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Irrevocable Letter of Credit

Name and Address of Issuing Institution_____

Secretary_____

Wisconsin Department of Natural Resources

Dear Sir or Madam: We hereby establish our Irrevocable Letter of Credit No. _____ in the favor of ["any and all third−party liability claimants"], at the request and for the account of [owner or operator's name and address] for third−party liability awards or settlements up to [in words] U.S. dollars $_____ per occurrence and the annual aggregate amount of [in words] U.S. dollars $_____, for sudden accidental occurrences and/or for third−party liability awards or settlements up to the amount of [in words] U.S. dollars $_____ per occurrence, and the annual aggregate amount of [in words] U.S. dollars $_____, for nonsudden accidental occurrences available upon presentation of a sight draft bearing reference to this letter of credit No. _____, and [insert the following language if the letter of credit is being used without a trust fund:] "(1) a signed certificate reading as follows:

Certificate of Valid Claim

The undersigned, as parties [insert principal] and [insert name and address of third party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operations of [principal's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $[ ]. We hereby certify that the claim does not apply to any of the following:

(a) Bodily injury or property damage for which [insert principal] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert principal] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert principal] under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) An employee of [insert principal] arising from, and in the course of, employment by [insert principal]; or

(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert principal].

This exclusion applies:

(A) Whether [insert principal] may be liable as an employer or in any other capacity; and

(B) To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(e) Property damage to:

(1) Any property owned, rented, or occupied by [insert principal];

(2) Premises that are sold, given away or abandoned by [insert principal] if the property damage arises out of any part of those premises;

(3) Property loaned to [insert principal];

(4) Personal property in the care, custody or control of [insert principal];

(5) That particular part of real property on which [insert principal] or any contractors or subcontractors working directly or indirectly on behalf of [insert principal] are performing operations, if the property damage arises out of these operations.

[Signatures]_____

Grantor_____

[Signatures]_____

Claimant(s)_____

or (2) a valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

This letter of credit is effective as of [date] and shall expire on [date at least one year later], but the expiration date shall be automatically extended for a period of [at least one year] on [date] and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify you, the Wisconsin Department of Natural Resources, and [owner's or operator's name] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor the draft upon presentation to us.

[Insert the following language if a trust fund is not being used: "In the event that this letter of credit is used in combination with another mechanism for liability coverage, this letter of credit shall be considered [insert "primary" or "excess" coverage]."]

We certify that the wording of this letter of credit is identical to the wording specified in s. NR 664.0151 (11) Wis. Adm. Code, as the rules were constituted on the date shown immediately below. [Signature(s) and title(s) of official(s) of issuing institution] [Date].

This credit is subject to [insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce," or "the Uniform Commercial Code"].

(12) A surety bond, as specified in s. NR 664.0147 (9) or 665.0147 (9), must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Payment Bond

Surety Bond No. [Insert number]

Parties [Insert name and address of owner or operator], Principal, incorporated in [Insert State of incorporation] of [Insert city and State of principal place of business] and [Insert name and address of surety company(ies)], Surety Company(ies), of [Insert surety(ies) place of business].

EPA Identification Number, name and address for each facility guaranteed by this bond: ____

	Sudden accidental occurrences	Nonsudden accidental occurrences
Penal Sum Per Occurrence.	[insert amount]	[insert amount]
Annual Aggregate	[insert amount]	[insert amount]

Purpose: This is an agreement between the Surety(ies) and the Principal under which the Surety(ies), its(their) successors and assignees, agree to be responsible for the payment of claims against the Principal for bodily injury and/or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental occurrences arising from operations of the facility or group of facilities in the sums prescribed herein; subject to the governing provisions and the following conditions.

Governing Provisions:

(1) Rules of the Wisconsin Department of Natural Resources, particularly s. NR [664.0147 or 665.0147], Wis. Adm. Code.

(2) Title 42 of the United States Code, section 6924.

Conditions:

(1) The Principal is subject to the applicable governing provisions that require the Principal to have and maintain liability coverage for bodily injury and property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental occurrences arising from operations of the facility or group of facilities. The obligation does not apply to any of the following:

(a) Bodily injury or property damage for which [insert principal] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert principal] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert principal] under a workers' compensation, disability benefits or unemployment compensation law or similar law.

(c) Bodily injury to:

(1) An employee of [insert principal] arising from, and in the course of, employment by [insert principal]; or

(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert principal]. This exclusion applies:

(A) Whether [insert principal] may be liable as an employer or in any other capacity; and

(B) To any obligation to share damages with or repay another person who shall pay damages because of the injury to persons identified in pars. (c) (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use or entrustment to others of any aircraft, motor vehicle or watercraft.

(e) Property damage to:

(1) Any property owned, rented or occupied by [insert principal];

(2) Premises that are sold, given away or abandoned by [insert principal] if the property damage arises out of any part of those premises;

(3) Property loaned to [insert principal];

(4) Personal property in the care, custody or control of [insert principal];

(5) That particular part of real property on which [insert principal] or any contractors or subcontractors working directly or indirectly on behalf of [insert principal] are performing operations, if the property damage arises out of these operations.

(2) This bond assures that the Principal will satisfy valid third party liability claims, as described in condition 1.

(3) If the Principal fails to satisfy a valid third party liability claim, as described above, the Surety(ies) becomes liable on this bond obligation.

(4) The Surety(ies) shall satisfy a third party liability claim only upon the receipt of one of the following documents:

(a) Certification from the Principal and the third party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Certification of Valid Claim

The undersigned, as parties [insert name of Principal] and [insert name and address of third party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating [Principal's] hazardous waste treatment, storage or disposal facility should be paid in the amount of $[ ].

[Signature]
Principal
[Notary] Date
[Signature(s)]
Claimant(s)
[Notary] Date

or (b) A valid final court order establishing a judgment against the Principal for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Principal's facility or group of facilities.

(5) In the event of combination of this bond with another mechanism for liability coverage, this bond will be considered [insert "primary" or "excess"] coverage.

(6) The liability of the Surety(ies) may not be discharged by any payment or succession of payments hereunder, unless and until the payment or payments shall amount in the aggregate to the penal sum of the bond. In no event shall the obligation of the Surety(ies) hereunder exceed the amount of said annual aggregate penal sum, provided that the Surety(ies) furnish(es) notice to the Department forthwith of all claims filed and payments made by the Surety(ies) under this bond.

(7) The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal and the Department, provided, however, that cancellation may not occur during the 120 days beginning on the date of receipt of the notice of cancellation by the Principal and the Department, as evidenced by the return receipt.

(8) The Principal may terminate this bond by sending written notice to the Surety(ies) and to the Department, and if the facilities covered by this bond are in more than one state, each agency regulating hazardous waste or the EPA Regional Administrator if the facility is located in an unauthorized state.

(9) The Surety(ies) hereby waive(s) notification of amendments to applicable laws, statutes, rules and regulations and agree(s) that no amendment shall in any way alleviate its (their) obligation on this bond.

(10) This bond is effective from [insert date] (12:01 a.m., standard time, at the address of the Principal as stated herein) and shall continue in force until terminated as described above.

In Witness Whereof, the Principal and Surety(ies) have executed this Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in s. NR 664.0151 (12), Wis. Adm. Code, as the rules were constituted on the date this bond was executed.

PRINCIPAL
[Signature(s)]
[Name(s)]
[Title(s)]
[Corporate Seal]

CORPORATE SURETY[IES]
[Name and address]
State of incorporation:_____
Liability Limit: $_____
[Signature(s)]
[Name(s) and title(s)]
[Corporate seal]

[For every co−surety, provide signature(s), corporate seal and other information in the same manner as for Surety above.]

Bond premium: $_____

(13) (a) A trust agreement, as specified in s. NR 664.0147 (10) or 665.0147 (10), must be worded as follows, except that

instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Trust Agreement

Trust Agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator] a [name of State] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert, "incorporated in the State of ____" or "a national bank"], the "trustee."

Whereas the Wisconsin Department of Natural Resources has established certain rules applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility or group of facilities must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental and/or nonsudden accidental occurrences arising from operations of the facility or group of facilities.

Whereas, the Grantor has elected to establish a trust to assure all or part of the financial responsibility for the facilities identified herein.

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee.

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of Facilities. This agreement pertains to the facilities identified on attached schedule A [on schedule A, for each facility list the EPA Identification Number, name and address of the facility(ies) and the amount of liability coverage, or portions thereof, if more than one instrument affords combined coverage as demonstrated by this Agreement].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, hereinafter the "Fund," for the benefit of any and all third parties injured or damaged by [sudden and/or nonsudden] accidental occurrences arising from operation of the facility(ies) covered by this guarantee, in the amounts of _____ [up to $1 million] per occurrence and _____ [up to $2 million] annual aggregate for sudden accidental occurrences and _____ [up to $3 million] per occurrence and _____ [up to $6 million] annual aggregate for nonsudden occurrences, except that the Fund is not established for the benefit of third parties for the following:

(a) Bodily injury or property damage for which [insert Grantor] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert Grantor] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert Grantor] under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) An employee of [insert Grantor] arising from, and in the course of, employment by [insert Grantor]; or

(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert Grantor].

This exclusion applies:

(A) Whether [insert Grantor] may be liable as an employer or in any other capacity; and

(B) To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use or entrustment to others of any aircraft, motor vehicle or watercraft.

(e) Property damage to:

(1) Any property owned, rented or occupied by [insert Grantor];

(2) Premises that are sold, given away or abandoned by [insert Grantor] if the property damage arises out of any part of those premises;

(3) Property loaned to [insert Grantor];

(4) Personal property in the care, custody or control of [insert Grantor];

(5) That particular part of real property on which [insert Grantor] or any contractors or subcontractors working directly or indirectly on behalf of [insert Grantor] are performing operations, if the property damage arises out of these operations.

In the event of combination with another mechanism for liability coverage, the fund shall be considered [insert "primary" or "excess"] coverage.

The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. The property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee may not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the Department.

Section 4. Payment for Bodily Injury or Property Damage. The Trustee shall satisfy a third party liability claim by making payments from the Fund only upon receipt of one of the following documents;

(a) Certification from the Grantor and the third party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Certification of Valid Claim

The undersigned, as parties [insert Grantor] and [insert name and address of third party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating [Grantor's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $[ ].

[Signatures]

Grantor

[Signatures]

Claimant(s)

(b) A valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling and managing the Fund, the Trustee shall discharge the Trustee's duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence

and diligence under the circumstance then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 USC 80a−2.(a), may not be acquired or held unless they are securities or other obligations of the Federal or a State government;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common commingled, or collective trust fund created by the Trustee in which the fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 USC 81a−1 et seq., including one which may be created, managed, underwritten or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote the shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any sale or other disposition;

(b) To make, execute, acknowledge and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing the securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of the securities in a qualified central depositary even though, when so deposited, the securities may be merged and held in bulk in the name of the nominee of the depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all the securities are part of the Fund;

(d) To deposit any cash in the Fund in interest−bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuations. The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the Department a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the Department shall constitute a conclusively binding assent by the Grantor barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but the resignation or replacement may not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the Department and the present Trustee by certified mail 10 days before the change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by persons as are designated in the attached Exhibit A or other designees as the Grantor may designate by amendments to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests and instructions. All orders, requests and instructions by the Department to the Trustee shall be in writing, signed by the Secretary of the Department, or the designees, and the Trustee shall act and shall be fully protected in acting in accordance with the orders, requests and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or EPA hereunder has occurred. The Trustee shall have no duty to act in the absence of the orders, requests and instructions from the Grantor and/or the Department, except as provided for herein.

Section 15. Notice of Nonpayment. If a payment for bodily injury or property damage is made under Section 4 of this trust, the Trustee shall notify the Grantor of the payment and the amount(s) thereof within 5 working days. The Grantor shall, on or before the anniversary date of the establishment of the Fund following the notice, either make payments to the Trustee in amounts sufficient to cause the trust to return to its value immediately prior to the payment of claims under Section 4, or shall provide written proof to the Trustee that other financial assurance for liability coverage has

been obtained equaling the amount necessary to return the trust to its value prior to the payment of claims. If the Grantor does not either make payments to the Trustee or provide the Trustee with proof, the Trustee shall within 10 working days after the anniversary date of the establishment of the Fund provide a written notice of nonpayment to the Department.

Section 16. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee and the Department, or by the Trustee and the Department if the Grantor ceases to exist.

Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee and the Department, or by the Trustee and the Department, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

The Department will agree to termination of the Trust when the owner or operator substitutes alternate financial assurance as specified in this section.

Section 18. Immunity and Indemnification. The Trustee may not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Department issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide the defense.

Section 19. Choice of Law. This Agreement shall be administered, construed and enforced according to the laws of the State of Wisconsin.

Section 20. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement may not affect the interpretation or the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in s. NR 664.0151 (13), Wis. Adm. Code, as the rules were constituted on the date first above written.

_____

[Signature of Grantor]

[Title]

Attest:

[Title]

[Seal] _____

[Signature of Trustee]

Attest:

[Title]

[Seal]

(b) The following is an example of the certification of acknowledgment which must accompany the trust agreement for a trust fund as specified in s. NR 664.0147 (10) or 665.0147 (10).

State of_____

County of_____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to the instrument is the corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

_____

[Signature of Notary Public]

(14) A deposit with the department, as specified in s. NR 664.0143 (7), 664.0145 (7), 665.0143 (6) or 665.0145 (6), must be accompanied by Form 4430−028 Deposit with the Department.

Note: Form 4430−028 may be obtained from: www.dnr.state.wi.us/org/aw/wm/hazard/FN_Responsibility/4430−028HW.pdf, or by E−mail: waste.management@dnr.state.wi.us, phone (608) 266−2111 or Fax (608) 267−2768.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; **corrections in (6) (b), (11) made under s. 13.93 (4) (b) 7., Stats., Register March 2013 No. 687.**

Subchapter I — Containers

NR 664.0170 Applicability. This subchapter applies to owners and operators of all hazardous waste facilities that store containers of hazardous waste, except as s. NR 664.0001 provides otherwise.

Note: Under ss. NR 661.07 and 661.33(3), if a hazardous waste is emptied from a container the residue remaining in the container is not regulated as hazardous waste if the container is "empty" as defined in s. NR 661.07. In that event, management of the container is exempt from the requirements of this subchapter.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0171 Condition of containers. If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the owner or operator shall transfer the hazardous waste from this container to a container that is in good condition or manage the waste in some other way that complies with the requirements of this chapter.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0172 Compatibility of waste with containers. The owner or operator shall use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0173 Management of containers. (1) A container holding hazardous waste shall always be closed during storage, except when it is necessary to add or remove waste.

(2) A container holding hazardous waste may not be opened, handled or stored in a manner which may rupture the container or cause it to leak.

Note: Reuse of containers in transportation is governed by U.S. department of transportation regulations including those set forth in 49 CFR 173.28.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0174 Inspections. At least weekly, the owner or operator shall inspect areas where containers are stored, looking for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors.

Note: See ss. NR 664.0015(3) and 664.0171 for remedial action required if deterioration or leaks are detected.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0175 Containment. (1) Container storage areas shall have a containment system that is designed and operated in accordance with sub. (2), except as otherwise provided by sub. (3).

(2) A containment system shall be designed and operated to meet all of the following requirements:

(a) A base shall underlie the containers which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills and

accumulated precipitation until the collected material is detected and removed.

(b) The base shall be sloped or the containment system shall be otherwise designed and operated to drain and remove liquids resulting from leaks, spills or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids.

(c) The containment system shall have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container, whichever is greater. Containers that do not contain free liquids need not be considered in this determination.

(d) Run−on into the containment system shall be prevented unless the collection system has sufficient excess capacity in addition to that required in par. (c) to contain any run−on which might enter the system.

(e) Spilled or leaked waste and accumulated precipitation shall be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system.

Note: If the collected material is a hazardous waste under ch. NR 661, it shall be managed as a hazardous waste in accordance with all applicable requirements of chs. NR 662 to 666. If the collected material is discharged through a point source to waters of the state, it is subject to the requirements of ss. 283.31 and 283.33, Stats.

(3) Storage areas that store containers holding only wastes that do not contain free liquids need not have a containment system defined by sub. (2), except as provided by sub. (4), provided that either of the following conditions is met:

(a) The storage area is sloped or is otherwise designed and operated to drain and remove liquid resulting from precipitation.

(b) The containers are elevated or are otherwise protected from contact with accumulated liquid.

(4) Storage areas that store containers holding F020, F021, F022, F023, F026 or F027 wastes that do not contain free liquids shall have a containment system defined by sub. (2).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0176 Special requirements for ignitable or reactive waste. Containers holding ignitable or reactive waste shall be located at least 15 meters (50 feet) from the facility's property line.

Note: See s. NR 664.0017(1) for additional requirements.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0177 Special requirements for incompatible wastes. (1) Incompatible wastes, or incompatible wastes and materials (see ch. NR 664 Appendix V for examples) may not be placed in the same container, unless s. NR 664.0017 (2) is complied with.

(2) Hazardous waste may not be placed in an unwashed container that previously held an incompatible waste or material.

Note: As required by s. NR 664.0013, the waste analysis plan shall include analyses needed to comply with this section. Also, s. NR 664.0017(3) requires wastes analyses, trial tests or other documentation to assure compliance with s. NR 664.0017(2). As required by s. NR 664.0073, the owner or operator shall place the results of each waste analysis and trial test, and any documented information, in the operating record of the facility.

(3) A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks or surface impoundments shall be separated from the other materials or protected from them by means of a dike, berm, wall or other device.

Note: The purpose of this section is to prevent fires, explosions, gaseous emission, leaching or other discharge of hazardous waste or hazardous waste constituents which could result from the mixing of incompatible wastes or materials if containers break or leak.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; **correction in (1) made under s. 13.92 (4) (b) 7., Stats., Register March 2013 No. 687.**

NR 664.0178 Closure. At closure, all hazardous waste and hazardous waste residues shall be removed from the containment system. Remaining containers, liners, bases and soil containing or contaminated with hazardous waste or hazardous waste residues shall be decontaminated or removed.

Note: At closure, as throughout the operating period, unless the owner or operator can demonstrate in accordance with s. NR 661.03(4) that the solid waste removed from the containment system is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it in accordance with all applicable requirements of chs. NR 662 to 666.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0179 Air emission standards. The owner or operator shall manage all hazardous waste placed in a container in accordance with the applicable requirements of subchs. AA, BB and CC.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter J — Tank Systems

NR 664.0190 Applicability. The requirements of this subchapter apply to owners and operators of facilities that use tank systems for storing or treating hazardous waste except as otherwise provided in subs. (1) to (3) or in s. NR 664.0001.

(1) Tank systems that are used to store or treat hazardous waste which contains no free liquids and are situated inside a building with an impermeable floor are exempted from the requirements in s. NR 664.0193. To demonstrate the absence or presence of free liquids in the stored or treated waste, method 9095 (paint filter liquids test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA SW−846, incorporated by reference in s. NR 660.11 shall be used.

(2) Tank systems, including sumps, as defined in s. NR 660.10, that serve as part of a secondary containment system to collect or contain releases of hazardous wastes are exempted from the requirements in s. NR 664.0193 (1).

(3) Tanks, sumps and other collection devices or systems used in conjunction with drip pads, as defined in s. NR 660.10 and regulated under subch. W, shall meet the requirements of this subchapter.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0191 Assessment of existing tank system's integrity. (1) For each existing tank system that does not have secondary containment meeting the requirements of s. NR 664.0193, the owner or operator shall determine that the tank system is not leaking or is unfit for use. Except as provided in sub. (3), the owner or operator shall obtain and keep on file at the facility a written assessment reviewed and certified by an independent, qualified registered professional engineer, in accordance with s. NR 670.011 (4), that attests to the tank system's integrity by March 1, 1992.

(2) This assessment shall determine that the tank system is adequately designed and has sufficient structural strength and compatibility with the wastes to be stored or treated, to ensure that it will not collapse, rupture or fail. At a minimum, this assessment shall consider all of the following:

(a) Design standards, if available, according to which the tank and ancillary equipment were constructed.

(b) Hazardous characteristics of the wastes that have been and will be handled.

(c) Existing corrosion protection measures.

(d) Documented age of the tank system, if available (otherwise, an estimate of the age).

(e) Results of a leak test, internal inspection or other tank integrity examination such that:

1. For non−enterable underground tanks, the assessment shall include a leak test that is capable of taking into account the effects of temperature variations, tank end deflection, vapor pockets and high water table effects.

2. For other than non−enterable underground tanks and for ancillary equipment, this assessment shall include either a leak

test, as described in subd. 1., or other integrity examination, that is certified by an independent, qualified, registered professional engineer in accordance with s. NR 670.011 (4), that addresses cracks, leaks, corrosion and erosion.

Note: The practices described in the American Petroleum Institute (API) Publication, Guide for Inspection of Refinery Equipment, Chapter XIII, "Atmospheric and Low−Pressure Storage Tanks", 4th edition, 1981, may be used, where applicable, as guidelines in conducting other than a leak test.

(3) Tank systems that store or treat materials that become hazardous wastes subsequent to March 1, 1991, shall conduct this assessment within 12 months after the date that the waste becomes a hazardous waste.

(4) If, as a result of the assessment conducted in accordance with sub. (1), a tank system is found to be leaking or unfit for use, the owner or operator shall comply with the requirements of s. NR 664.0196.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0192 Design and installation of new tank systems or components. (1) Owners or operators of new tank systems or components shall obtain and submit to the department, at time of submittal of the feasibility and plan of operation report, a written assessment, reviewed and certified by an independent, qualified registered professional engineer, in accordance with s. NR 670.011 (4), attesting that the tank system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste. The assessment shall show that the foundation, structural support, seams, connections and pressure controls (if applicable) are adequately designed and that the tank system has sufficient structural strength, compatibility with the wastes to be stored or treated and corrosion protection to ensure that it will not collapse, rupture or fail. This assessment, which will be used by the department to review and approve or disapprove the acceptability of the tank system design, shall include, at a minimum, all of the following information:

(a) Design standards according to which the tanks and ancillary equipment are constructed.

(b) Hazardous characteristics of the wastes to be handled.

(c) For new tank systems or components in which the external shell of a metal tank or any external metal component of the tank system will be in contact with the soil or with water, a determination by a corrosion expert of all of the following:

1. Factors affecting the potential for corrosion, including but not limited to, all of the following:

a. Soil moisture content.

b. Soil pH.

c. Soil sulfides level.

d. Soil resistivity.

e. Structure to soil potential.

f. Influence of nearby underground metal structures (e.g., piping).

g. Existence of stray electric current.

h. Existing corrosion−protection measures (e.g., coating, cathodic protection).

2. The type and degree of external corrosion protection that are needed to ensure the integrity of the tank system during the use of the tank system or component, consisting of one or more of the following:

a. Corrosion−resistant materials of construction such as special alloys, fiberglass reinforced plastic, etc.

b. Corrosion−resistant coating (such as epoxy, fiberglass, etc.) with cathodic protection (e.g., impressed current or sacrificial anodes).

c. Electrical isolation devices such as insulating joints, flanges, etc.

Note: The practices described in the National Association of Corrosion Engineers (NACE) standard, "Recommended Practice (RP−02−85)—Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems", and the American Petroleum Institute (API) Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", may be used, where applicable, as guidelines in providing corrosion protection for tank systems.

(d) For underground tank system components that are likely to be adversely affected by vehicular traffic, a determination of design or operational measures that will protect the tank system against potential damage.

(e) Design considerations to ensure all of the following:

1. Tank foundations will maintain the load of a full tank.

2. Tank systems will be anchored to prevent flotation or dislodgment where the tank system is placed in a saturated zone.

3. Tank systems will withstand the effects of frost heave.

(2) The owner or operator of a new tank system shall ensure that proper handling procedures are adhered to in order to prevent damage to the system during installation. Prior to covering, enclosing or placing a new tank system or component in use, an independent, qualified installation inspector or an independent, qualified, registered professional engineer, either of whom is trained and experienced in the proper installation of tank systems or components, shall inspect the system for the presence of any of the following items:

(a) Weld breaks.

(b) Punctures.

(c) Scrapes of protective coatings.

(d) Cracks.

(e) Corrosion.

(f) Other structural damage or inadequate construction or installation.

All discrepancies shall be remedied before the tank system is covered, enclosed or placed in use.

(3) New tank systems or components that are placed underground and that are backfilled shall be provided with a backfill material that is a noncorrosive, porous, homogeneous substance and that is installed so that the backfill is placed completely around the tank and compacted to ensure that the tank and piping are fully and uniformly supported.

(4) All new tanks and ancillary equipment shall be tested for tightness prior to being covered, enclosed or placed in use. If a tank system is found not to be tight, all repairs necessary to remedy the leaks in the system shall be performed prior to the tank system being covered, enclosed or placed into use.

(5) Ancillary equipment shall be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

Note: The piping system installation procedures described in American Petroleum Institute (API) Publication 1615 (November 1979), "Installation of Underground Petroleum Storage Systems", or ANSI Standard B31.3, "Petroleum Refinery Piping", and ANSI Standard B31.4 "Liquid Petroleum Transportation Piping System", may be used, where applicable, as guidelines for proper installation of piping systems.

(6) The owner or operator shall provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided under sub. (1) (c), or other corrosion protection if the department believes other corrosion protection is necessary to ensure the integrity of the tank system during use of the tank system. An independent corrosion expert shall supervise the installation of a corrosion protection system that is field fabricated, to ensure proper installation.

(7) The owner or operator shall obtain and keep on file at the facility written statements by those persons required to certify the design of the tank system and supervise the installation of the tank system in accordance with the requirements of subs. (2) to (6), that attest that the tank system was properly designed and installed and that repairs, pursuant to subs. (2) and (4), were performed. These written statements shall also include the certification statement as required in s. NR 670.011 (4).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0193 Containment and detection of releases. (1) In order to prevent the release of hazardous waste

or hazardous constituents to the environment, secondary containment that meets the requirements of this section shall be provided (except as provided in subs. (6) and (7)):

(a) For all new tank systems or components, prior to their being put into service.

(b) For all existing tank systems used to store or treat EPA hazardous waste numbers F020, F021, F022, F023, F026 and F027, within 2 years after March 1, 1991.

(c) For those existing tank systems of known and documented age, within 2 years after March 1, 1991 or when the tank system has reached 15 years of age, whichever comes later.

(d) For those existing tank systems for which the age cannot be documented, within 8 years of March 1, 1991; but if the age of the facility is greater than 7 years, secondary containment shall be provided by the time the facility reaches 15 years of age, or within 2 years of March 1, 1991, whichever comes later.

(e) For tank systems that store or treat materials that become hazardous wastes subsequent to March 1, 1991, within the time intervals required in pars. (a) to (d), except that the date that a material becomes a hazardous waste shall be used in place of March 1, 1991.

(2) Secondary containment systems shall be all of the following:

(a) Designed, installed and operated to prevent any migration of wastes or accumulated liquid out of the system to the soil, groundwater or surface water at any time during the use of the tank system.

(b) Capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

(3) To meet the requirements of sub. (2), secondary containment systems shall be at a minimum all of the following:

(a) Constructed of or lined with materials that are compatible with the wastes to be placed in the tank system and shall have sufficient strength and thickness to prevent failure owing to pressure gradients (including static head and external hydrological forces), physical contact with the waste to which it is exposed, climatic conditions and the stress of daily operation (including stresses from nearby vehicular traffic).

(b) Placed on a foundation or base capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system and capable of preventing failure due to settlement, compression or uplift.

(c) Provided with a leak−detection system that is designed and operated so that it will detect the failure of either the primary or secondary containment structure or the presence of any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours, or at the earliest practicable time if the owner or operator can demonstrate to the department that existing detection technologies or site conditions will not allow detection of a release within 24 hours.

(d) Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills or precipitation. Spilled or leaked waste and accumulated precipitation shall be removed from the secondary containment system within 24 hours, or in as timely a manner as is possible to prevent harm to human health and the environment, if the owner or operator can demonstrate to the department that removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours.

Note: If the collected material is a hazardous waste under ch. NR 661, it is subject to management as a hazardous waste according to all applicable requirements of chs. NR 662, 663, this chapter and 665. If the collected material is discharged through a point source to waters of the state, it is subject to ss. 283.31 and 283.33, Stats. If discharged to a publicly owned treatment works (POTW), it is subject to s. 283.21(2), Stats. If the collected material is released to the environment, it may be subject to the reporting requirements of 40 CFR part 302 and the requirements of s. 292.11, Stats., and chs. NR 706 to 726.

(4) Secondary containment for tanks shall include one or more of the following devices:

(a) A liner (external to the tank).

(b) A vault.

(c) A double−walled tank.

(d) An equivalent device as approved by the department.

(5) In addition to the requirements of subs. (2) to (4), secondary containment systems shall satisfy the following requirements:

(a) External liner systems shall be all of the following:

1. Designed or operated to contain 100% of the capacity of the largest tank within its boundary.

2. Designed or operated to prevent run−on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run−on or infiltration. The additional capacity shall be sufficient to contain precipitation from a 25−year, 24−hour rainfall event.

3. Free of cracks or gaps.

4. Designed and installed to surround the tank completely and to cover all surrounding earth likely to come into contact with the waste if the waste is released from the tank (i.e., capable of preventing lateral as well as vertical migration of the waste).

(b) Vault systems shall be all of the following:

1. Designed or operated to contain 100% of the capacity of the largest tank within its boundary.

2. Designed or operated to prevent run−on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run−on or infiltration. The additional capacity shall be sufficient to contain precipitation from a 25−year, 24−hour rainfall event.

3. Constructed with chemical−resistant water stops in place at all joints (if any).

4. Provided with an impermeable interior coating or lining that is compatible with the stored waste and that will prevent migration of waste into the concrete.

5. Provided with a means to protect against the formation of and ignition of vapors within the vault, if the waste being stored or treated meets any of the following:

a. The definition of ignitable waste under s. NR 661.21.

b. The definition of reactive waste under s. NR 661.23, and may form an ignitable or explosive vapor.

6. Provided with an exterior moisture barrier or be otherwise designed or operated to prevent migration of moisture into the vault if the vault is subject to hydraulic pressure.

(c) Double−walled tanks shall be all of the following:

1. Designed as an integral structure (i.e., an inner tank completely enveloped within an outer shell) so that the outer shell contains any release from the inner tank.

2. Protected, if constructed of metal, from both corrosion of the primary tank interior and of the external surface of the outer shell.

3. Provided with a built−in continuous leak detection system capable of detecting a release within 24 hours, or at the earliest practicable time, if the owner or operator can demonstrate to the department, and the department concludes, that the existing detection technology or site conditions would not allow detection of a release within 24 hours.

Note: The provisions outlined in the Steel Tank Institute's (STI) "Standard for Dual Wall Underground Steel Storage Tanks" may be used as guidelines for aspects of the design of underground steel double−walled tanks.

(6) Ancillary equipment shall be provided with secondary containment (e.g., trench, jacketing, double−walled piping) that meets the requirements of subs. (2) and (3) except for all of the following:

(a) Aboveground piping (exclusive of flanges, joints, valves and other connections) that is visually inspected for leaks on a daily basis.

(b) Welded flanges, welded joints and welded connections, that are visually inspected for leaks on a daily basis.

(c) Sealless or magnetic coupling pumps and sealless valves, that are visually inspected for leaks on a daily basis.

(d) Pressurized aboveground piping systems with automatic shut−off devices (e.g., excess flow check valves, flow metering shutdown devices, loss of pressure actuated shut−off devices) that are visually inspected for leaks on a daily basis.

(7) The owner or operator may obtain a variance from the requirements of this section if the department finds, as a result of a demonstration by the owner or operator that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous waste or hazardous constituents into the groundwater or surface water at least as effectively as secondary containment during the active life of the tank system; or, that in the event of a release that does migrate to groundwater or surface water, no substantial present or potential hazard will be posed to human health or the environment. New underground tank systems may not, per a demonstration in accordance with par. (b), be exempted from the secondary containment requirements of this section.

(a) In deciding whether to grant a variance based on a demonstration of equivalent protection of groundwater and surface water, the department will consider all of the following:

1. The nature and quantity of the wastes.

2. The proposed alternate design and operation.

3. The hydrogeologic setting of the facility, including the thickness of soils present between the tank system and groundwater.

4. All other factors that would influence the quality and mobility of the hazardous constituents and the potential for them to migrate to groundwater or surface water.

(b) In deciding whether to grant a variance based on a demonstration of no substantial present or potential hazard, the department will consider all of the following:

1. The potential adverse effects on groundwater, surface water and land quality taking into account all of the following:

a. The physical and chemical characteristics of the waste in the tank system, including its potential for migration.

b. The hydrogeological characteristics of the facility and surrounding land.

c. The potential for health risks caused by human exposure to waste constituents.

d. The potential for damage to wildlife, crops, vegetation and physical structures caused by exposure to waste constituents.

e. The persistence and permanence of the potential adverse effects.

2. The potential adverse effects of a release on groundwater quality, taking into account all of the following:

a. The quantity and quality of groundwater and the direction of groundwater flow.

b. The proximity and withdrawal rates of groundwater users.

c. The current and future uses of groundwater in the area.

d. The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater quality.

3. The potential adverse effects of a release on surface water quality, taking into account all of the following:

a. The quantity and quality of groundwater and the direction of groundwater flow.

b. The patterns of rainfall in the region.

c. The proximity of the tank system to surface waters.

d. The current and future uses of surface waters in the area and any water quality standards established for those surface waters.

e. The existing quality of surface water, including other sources of contamination and the cumulative impact on surface−water quality.

4. The potential adverse effects of a release on the land surrounding the tank system, taking into account all of the following:

a. The patterns of rainfall in the region.

b. The current and future uses of the surrounding land.

(c) The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of par. (a), at which a release of hazardous waste has occurred from the primary tank system but has not migrated beyond the zone of engineering control (as established in the variance), shall do all of the following:

1. Comply with the requirements of s. NR 664.0196, except sub. (4).

2. Decontaminate or remove contaminated soil to the extent necessary to do all of the following:

a. Enable the tank system for which the variance was granted to resume operation with the capability for the detection of releases at least equivalent to the capability it had prior to the release.

b. Prevent the migration of hazardous waste or hazardous constituents to groundwater or surface water.

3. If contaminated soil cannot be removed or decontaminated in accordance with subd. 2., comply with the requirement of s. NR 664.0197 (2).

(d) The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of par. (a), at which a release of hazardous waste has occurred from the primary tank system and has migrated beyond the zone of engineering control (as established in the variance), shall do all of the following:

1. Comply with the requirements of s. NR 664.0196 (1) to (4).

2. Prevent the migration of hazardous waste or hazardous constituents to groundwater or surface water, if possible, and decontaminate or remove contaminated soil. If contaminated soil cannot be decontaminated or removed or if groundwater has been contaminated, the owner or operator shall comply with the requirements of s. NR 664.0197 (2).

3. If repairing, replacing or reinstalling the tank system, provide secondary containment in accordance with the requirements of subs. (1) to (6) or reapply for a variance from secondary containment and meet the requirements for new tank systems in s. NR 664.0192 if the tank system is replaced. The owner or operator shall comply with these requirements even if contaminated soil can be decontaminated or removed and groundwater or surface water has not been contaminated.

(8) All of the following procedures shall be followed in order to request a variance from secondary containment:

(a) The department shall be notified in writing by the owner or operator that the owner or operator intends to conduct and submit a demonstration for a variance from secondary containment as allowed in sub. (7) according to the following schedule:

1. For existing tank systems, at least 24 months prior to the date that secondary containment must be provided in accordance with sub. (1).

2. For new tank systems, at least 30 days prior to entering into a contract for installation.

(b) As part of the notification, the owner or operator shall also submit to the department a description of the steps necessary to conduct the demonstration and a timetable for completing each of the steps. The demonstration shall address each of the factors listed in sub. (7) (a) or (b).

(c) The demonstration for a variance shall be completed within 180 days after notifying the department of an intent to conduct the demonstration.

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(d) If a variance is granted under this subsection, the department will require the licensee to construct and operate the tank system in the manner that was demonstrated to meet the requirements for the variance.

(9) All tank systems, until the time that secondary containment that meets the requirements of this section is provided, shall comply with the following:

(a) For non−enterable underground tanks, a leak test that meets the requirements of s. NR 664.0191 (2) (e) or other tank integrity method, as approved or required by the department, shall be conducted at least annually.

(b) For other than non−enterable underground tanks, the owner or operator shall either conduct a leak test as in par. (a) or develop a schedule and procedure for an assessment of the overall condition of the tank system by an independent, qualified registered professional engineer. The schedule and procedure shall be adequate to detect obvious cracks, leaks and corrosion or erosion that may lead to cracks and leaks. The owner or operator shall remove the stored waste from the tank, if necessary, to allow the condition of all internal tank surfaces to be assessed. The frequency of these assessments shall be based on the material of construction of the tank and its ancillary equipment, the age of the system, the type of corrosion or erosion protection used, the rate of corrosion or erosion observed during the previous inspection and the characteristics of the waste being stored or treated.

(c) For ancillary equipment, a leak test or other integrity assessment as approved by the department shall be conducted at least annually.

Note: The practices described in the American Petroleum Institute (API) Publication Guide for Inspection of Refinery Equipment, Chapter XIII, "Atmospheric and Low−Pressure Storage Tanks", 4th edition, 1981, may be used, where applicable, as guidelines for assessing the overall condition of the tank system.

(d) The owner or operator shall maintain on file at the facility a record of the results of the assessments conducted in accordance with pars. (a) to (c).

(e) If a tank system or component is found to be leaking or unfit for use as a result of the leak test or assessment in pars. (a) to (c), the owner or operator shall comply with the requirements of s. NR 664.0196.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0194 General operating requirements. (1) Hazardous wastes or treatment reagents may not be placed in a tank system if they could cause the tank, its ancillary equipment or the containment system to rupture, leak, corrode or otherwise fail.

(2) The owner or operator shall use appropriate controls and practices to prevent spills and overflows from tank or containment systems. These include at a minimum all of the following:

(a) Spill prevention controls (e.g., check valves, dry disconnect couplings).

(b) Overfill prevention controls (e.g., level sensing devices, high level alarms, automatic feed cutoff or bypass to a standby tank).

(c) Maintenance of sufficient freeboard in uncovered tanks to prevent overtopping by wave or wind action or by precipitation.

(3) The owner or operator shall comply with the requirements of s. NR 664.0196 if a leak or spill occurs in the tank system.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0195 Inspections. (1) The owner or operator shall develop and follow a schedule and procedure for inspecting overfill controls.

(2) The owner or operator shall inspect at least once each operating day all of the following:

(a) Aboveground portions of the tank system, if any, to detect corrosion or releases of waste.

(b) Data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design.

(c) The construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).

Note: Section NR 664.0015(3) requires the owner or operator to remedy any deterioration or malfunction found. Section NR 664.0196 requires the owner or operator to notify the department within 24 hours of confirming a leak. Also, if a hazardous substance is released to the environment, 40 CFR part 302 may require the owner or operator to notify the national response center and s. 292.11, Stats., and ch. NR 706 may require the owner or operator to notify the department.

(3) The owner or operator shall inspect cathodic protection systems, if present, according to, at a minimum, all of the following requirements to ensure that they are functioning properly:

(a) The proper operation of the cathodic protection system shall be confirmed within 6 months after initial installation and annually thereafter.

(b) All sources of impressed current shall be inspected or tested, or both, as appropriate, at least bimonthly (i.e., every other month).

Note: The practices described in the National Association of Corrosion Engineers (NACE) standard, "Recommended Practice (RP−02−85)—Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems" and the American Petroleum Institute (API) Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", may be used, where applicable, as guidelines in maintaining and inspecting cathodic protection systems.

(4) The owner or operator shall document in the operating record of the facility an inspection of those items in subs. (1) to (3).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0196 Response to leaks or spills and disposition of leaking or unfit−for−use tank systems. A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, shall be removed from service immediately, and the owner or operator shall satisfy the following requirements:

(1) CESSATION OF USE; PREVENT FLOW OR ADDITION OF WASTES. The owner or operator shall immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release.

(2) REMOVAL OF WASTE FROM TANK SYSTEM OR SECONDARY CONTAINMENT SYSTEM. (a) If the release was from the tank system, the owner or operator shall, within 24 hours after detection of the leak or, if the owner or operator demonstrates that it is not possible, at the earliest practicable time, remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tank system to be performed.

(b) If the material released was to a secondary containment system, all released materials shall be removed within 24 hours or in as timely a manner as is possible to prevent harm to human health and the environment.

(3) CONTAINMENT OF VISIBLE RELEASES TO THE ENVIRONMENT. The owner or operator shall immediately conduct a visual inspection of the release and, based upon that inspection, do all of the following:

(a) Prevent further migration of the leak or spill to soils or surface water.

(b) Remove, and properly dispose of, any visible contamination of the soil or surface water.

(4) NOTIFICATIONS, REPORTS. (a) Any release to the environment, except as provided in par. (b), shall be reported to the department within 24 hours of its detection. If the release has been reported pursuant to ch. NR 706, that report will satisfy this requirement.

(b) A leak or spill of hazardous waste is exempted from the requirements of this subsection if it is all of the following:

1. Less than or equal to a quantity of one pound.

2. Immediately contained and cleaned up.

(c) Within 30 days of detection of a release to the environment, a report containing all of the following information shall be submitted to the department:

1. Likely route of migration of the release.

2. Characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate).

3. Results of any monitoring or sampling conducted in connection with the release (if available). If sampling or monitoring data relating to the release are not available within 30 days, these data shall be submitted to the department as soon as they become available.

4. Proximity to downgradient drinking water, surface water and populated areas.

5. Description of response actions taken or planned.

(5) PROVISION OF SECONDARY CONTAINMENT, REPAIR OR CLOSURE. (a) Unless the owner or operator satisfies the requirements of pars. (b) to (d), the tank system shall be closed in accordance with s. NR 664.0197.

(b) If the cause of the release was a spill that has not damaged the integrity of the system, the owner or operator may return the system to service as soon as the released waste is removed and repairs, if necessary, are made.

(c) If the cause of the release was a leak from the primary tank system into the secondary containment system, the system shall be repaired prior to returning the tank system to service.

(d) If the source of the release was a leak to the environment from a component of a tank system without secondary containment, the owner or operator shall provide the component of the system from which the leak occurred with secondary containment that satisfies the requirements of s. NR 664.0193 before it can be returned to service, unless the source of the leak is an aboveground portion of a tank system that can be inspected visually. If the source is an aboveground component that can be inspected visually, the component shall be repaired and may be returned to service without secondary containment as long as the requirements of sub. (6) are satisfied. If a component is replaced to comply with the requirements of this paragraph, that component shall satisfy the requirements for new tank systems or components in ss. NR 664.0192 and 664.0193. Additionally, if a leak has occurred in any portion of a tank system component that is not readily accessible for visual inspection (e.g., the bottom of an inground or onground tank), the entire component shall be provided with secondary containment in accordance with s. NR 664.0193 prior to being returned to use.

(6) CERTIFICATION OF MAJOR REPAIRS. If the owner or operator has repaired a tank system in accordance with sub. (5), and the repair has been extensive (e.g., installation of an internal liner; repair of a ruptured primary containment or secondary containment vessel), the tank system may not be returned to service unless the owner or operator has obtained a certification by an independent, qualified, registered, professional engineer in accordance with s. NR 670.011 (4) that the repaired system is capable of handling hazardous wastes without release for the intended life of the system. This certification shall be submitted to the department within 7 days after returning the tank system to use.

Note: The department may, on the basis of any information received that there is or has been a release of hazardous waste or hazardous constituents into the environment, issue an order under s. 291.37 or 291.85, Stats., requiring corrective action or other response as deemed necessary to protect human health or the environment.

Note: See s. NR 664.0015(3) for the requirements necessary to remedy a failure. Also, if a hazardous substance is released to the environment, 40 CFR part 302 may require the owner or operator to notify the national response center and s. 292.11, Stats., and ch. NR 706 may require the owner or operator to notify the department.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0197 Closure and long−term care. (1) At closure of a tank system, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste, and manage them as hazardous waste, unless s. NR 661.03 (4) applies. The closure plan, closure activities, cost estimates for closure and financial responsibility for tank systems shall meet all of the requirements specified in subchs. G and H.

(2) If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in sub. (1), then the owner or operator shall close the tank system and perform long−term care in accordance with the closure and long−term care requirements that apply to landfills (s. NR 664.0310). In addition, for the purposes of closure, long−term care and financial responsibility, such a tank system is then considered to be a landfill, and the owner or operator shall meet all of the requirements for landfills specified in subchs. G and H.

(3) If an owner or operator has a tank system that does not have secondary containment that meets the requirements of s. NR 664.0193 (2) to (6) and has not been granted a variance from the secondary containment requirements in accordance with s. NR 664.0193 (7), then:

(a) The closure plan for the tank system shall include both a plan for complying with sub. (1) and a contingent plan for complying with sub. (2).

(b) A contingent long−term care plan for complying with sub. (2) shall be prepared and submitted as part of the feasibility and plan of operation report.

(c) The cost estimates calculated for closure and long−term care shall reflect the costs of complying with the contingent closure plan and the contingent long−term care plan, if those costs are greater than the costs of complying with the closure plan prepared for the expected closure under sub. (1).

(d) Financial assurance shall be based on the cost estimates in par. (c).

(e) For the purposes of the contingent closure and long−term care plans, such a tank system is considered to be a landfill, and the contingent plans shall meet all of the closure, long−term care and financial responsibility requirements for landfills under subchs. G and H.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0198 Special requirements for ignitable or reactive wastes. (1) Ignitable or reactive waste may not be placed in tank systems, unless par. (a), (b) or (c) applies:

(a) The waste is treated, rendered or mixed before or immediately after placement in the tank system so that all of the following apply:

1. The resulting waste, mixture or dissolved material no longer meets the definition of ignitable or reactive waste under s. NR 661.21 or 661.23.

2. Section NR 664.0017 (2) is complied with.

(b) The waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react.

(c) The tank system is used solely for emergencies.

(2) The owner or operator of a facility where ignitable or reactive waste is stored or treated in a tank shall comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys or an adjoining property line that can be built upon as required in Tables 2−1 to 2−6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code" (1977 or 1981), incorporated by reference in s. NR 660.11.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0199 Special requirements for incompatible wastes. (1) Incompatible wastes, or incompatible wastes and materials (see ch. NR 664 Appendix V for examples), may not be

placed in the same tank system, unless s. NR 664.0017 (2) is complied with.

(2) Hazardous waste may not be placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless s. NR 664.0017 (2) is complied with.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; **correction in (1) made under s. 13.92 (4) (b) 7., Stats., Register March 2013 No. 687.**

NR 664.0200 Air emission standards. The owner or operator shall manage all hazardous waste placed in a tank in accordance with the applicable requirements of subchs. AA, BB and CC.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter K — Surface Impoundments

NR 664.0220 Applicability. This subchapter applies to owners and operators of facilities that use surface impoundments to treat, store or dispose of hazardous waste except as s. NR 664.0001 provides otherwise.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0221 Design and operating requirements. **(1)** Any surface impoundment that is not covered by sub. (3) or s. NR 665.0221 shall have a liner for all portions of the impoundment (except for existing portions of the impoundment). The liner shall be designed, constructed and installed to prevent any migration of wastes out of the impoundment to the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the impoundment. The liner may be constructed of materials that may allow wastes to migrate into the liner (but not into the adjacent subsurface soil or groundwater or surface water) during the active life of the facility, provided that the impoundment is closed in accordance with s. NR 664.0228 (1) (a). For impoundments that will be closed in accordance with s. NR 664.0228 (1) (b), the liner shall be constructed of materials that can prevent wastes from migrating into the liner during the active life of the facility. The liner shall be all of the following:

(a) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation and the stress of daily operation.

(b) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift.

(c) Installed to cover all surrounding earth likely to be in contact with the waste or leachate.

(2) The owner or operator will be exempted from the requirements of sub. (1) if the department finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see s. NR 664.0093) into the groundwater or surface water at any future time. In deciding whether to grant an exemption, the department will consider all of the following:

(a) The nature and quantity of the wastes.

(b) The proposed alternate design and operation.

(c) The hydrogeologic setting of the facility, including the attenuative capacity and thickness of the liners and soils present between the impoundment and groundwater or surface water.

(d) All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to groundwater or surface water.

(3) The owner or operator of each new surface impoundment unit on which construction commences after June 1, 1995, each lateral expansion of a surface impoundment unit on which construction commences after June 1, 1995 and each replacement of an existing surface impoundment unit that is to commence reuse after June 1, 1995 shall install 2 or more liners and a leachate collection and removal system between the liners. "Construction commences" is as defined in s. NR 660.10 under "existing facility".

(a) 1. The liner system shall include both of the following:

a. A top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into the liner during the active life and long−term care period.

b. A composite bottom liner, consisting of at least 2 components. The upper component shall be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and long−term care period. The lower component shall be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur. The lower component shall be constructed of at least 3 feet (91 cm) of compacted soil material with a hydraulic conductivity of no more than $1x10^{-7}$ cm/sec.

2. The liners shall comply with sub. (1) (a), (b) and (c).

(b) The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system shall be capable of detecting, collecting and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and long−term care period. The requirements for a leak detection system in this subsection are satisfied by installation of a system that is, at a minimum, all of the following:

1. Constructed with a bottom slope of 1% or more.

2. Constructed of granular drainage materials with a hydraulic conductivity of $1x10^{-1}$ cm/sec or more and a thickness of 12 inches (30.5 cm) or more; or constructed of synthetic or geonet drainage materials with a transmissivity of $3x10^{-4}$ m^2/sec or more.

3. Constructed of materials that are chemically resistant to the waste managed in the surface impoundment and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes and any waste cover materials or equipment used at the surface impoundment.

4. Designed and operated to minimize clogging during the active life and long−term care period.

5. Constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit shall have its own sump. The design of each sump and removal system shall provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.

(c) The owner or operator shall collect and remove pumpable liquids in the sumps to minimize the head on the bottom liner.

(d) The owner or operator of a leak detection system that is not located completely above the seasonal high water table shall demonstrate that the operation of the leak detection system will not be adversely affected by the presence of groundwater.

(4) The department may approve alternative design or operating practices to those specified in sub. (3) if the owner or operator demonstrates to the department that the design and operating practices, together with location characteristics, will do both of the following:

(a) Prevent the migration of any hazardous constituent into the groundwater or surface water at least as effectively as the liners and leachate collection and removal system specified in sub. (3).

(b) Allow detection of leaks of hazardous constituents through the top liner at least as effectively.

(5) The double liner requirement in sub. (3) may be waived by the department for any monofill, if the requirements of pars. (a) and (b) 1. or 2. are met:

(a) The monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and the wastes do not contain constituents which would render the wastes hazardous for reasons other than the toxicity characteristic in s. NR 661.24.

(b) 1. All of the following:

a. The monofill has at least one liner for which there is no evidence that the liner is leaking. For the purposes of this subsection, the term "liner" means a liner designed, constructed, installed and operated to prevent hazardous waste from passing into the liner at any time during the active life of the facility, or a liner designed, constructed, installed and operated to prevent hazardous waste from migrating beyond the liner to adjacent subsurface soil, groundwater or surface water at any time during the active life of the facility. In the case of any surface impoundment which has been exempted from the requirements of sub. (3) on the basis of a liner designed, constructed, installed and operated to prevent hazardous waste from passing beyond the liner, at the closure of the impoundment, the owner or operator shall remove or decontaminate all waste residues, all contaminated liner material and contaminated soil to the extent practicable. If all contaminated soil is not removed or decontaminated, the owner or operator of the impoundment will comply with appropriate long−term care requirements, including but not limited to groundwater monitoring and corrective action.

b. The monofill is located more than one−quarter mile from an underground source of drinking water (as that term is defined in 40 CFR 144.3).

c. The monofill is in compliance with generally applicable groundwater monitoring requirements for facilities with operating licenses under s. 291.25, Stats.

2. The owner or operator demonstrates that the monofill is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into groundwater or surface water at any future time.

(6) The owner or operator of any replacement surface impoundment unit is exempt from sub. (3) if both of the following apply:

(a) The existing unit was constructed in compliance with the design standards of 42 USC 6924(o)(1)(A)(i) and (5).

(b) There is no reason to believe that the liner is not functioning as designed.

(7) A surface impoundment shall be designed, constructed, maintained and operated to prevent overtopping resulting from normal or abnormal operations; overfilling; wind and wave action; rainfall; run−on; malfunctions of level controllers, alarms and other equipment and human error.

(8) A surface impoundment shall have dikes that are designed, constructed and maintained with sufficient structural integrity to prevent massive failure of the dikes. In ensuring structural integrity, it may not be presumed that the liner system will function without leakage during the active life of the unit.

(9) The department shall specify in the operating license all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0222 Action leakage rate. (1) The department shall approve an action leakage rate for surface impoundment units subject to s. NR 664.0221 (3) or (4). The action leakage rate is the maximum design flow rate that the leak detection system can remove without the fluid head on the bottom liner exceeding one foot. The action leakage rate shall include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation and location of the leak detection system, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the leak detection system and proposed response actions (e.g., the action leakage rate shall consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

(2) To determine if the action leakage rate has been exceeded, the owner or operator shall convert the weekly or monthly flow rate from the monitoring data obtained under s. NR 664.0226 (4) to an average daily flow rate (gallons per acre per day) for each sump. Unless the department approves a different calculation, the average daily flow rate for each sump shall be calculated weekly during the active life and closure period, and if the unit is closed in accordance with s. NR 664.0228 (2), monthly during the long−term care period when monthly monitoring is required under s. NR 664.0226 (4).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0223 Response actions. (1) The owner or operator of surface impoundment units subject to s. NR 664.0221 (3) or (4) shall have an approved response action plan before receipt of waste. The response action plan shall set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan shall describe the actions specified in sub. (2).

(2) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator shall do all of the following:

(a) Notify the department in writing of the exceedence within 7 days of the determination.

(b) Submit a preliminary written assessment to the department within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size and cause of any leaks and short−term actions taken and planned.

(c) Determine to the extent practicable the location, size and cause of any leak.

(d) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs or controls and whether or not the unit should be closed.

(e) Determine any other short−term and longer−term actions to be taken to mitigate or stop any leaks.

(f) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the department the results of the analyses specified in pars. (c), (d) and (e), the results of actions taken and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator shall submit to the department a report summarizing the results of any remedial actions taken and actions planned.

(3) To make the leak and remediation determinations in sub. (2) (c), (d) and (e), the owner or operator shall comply with par. (a) or (b):

(a) Do all of the following:

1. Assess the source of liquids and amounts of liquids by source.

2. Conduct a fingerprint, hazardous constituent or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid.

3. Assess the seriousness of any leaks in terms of potential for escaping into the environment.

(b) Document why the assessments are not needed.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0226 Monitoring and inspection. (1) During construction and installation, liners (except in the case of existing portions of surface impoundments exempt from s. NR 664.0221 (1)) and cover systems (e.g., membranes, sheets or coatings) shall be inspected for uniformity, damage and imperfections (e.g., holes, cracks, thin spots or foreign materials). Both of the following inspections are required immediately after construction or installation:

(a) Synthetic liners and covers shall be inspected, to ensure tight seams and joints and the absence of tears, punctures or blisters.

(b) Soil−based and admixed liners and covers shall be inspected for imperfections including lenses, cracks, channels, root holes or other structural non−uniformities that may cause an increase in the permeability of the liner or cover.

(2) While a surface impoundment is in operation, it shall be inspected weekly and after storms to detect evidence of any of the following:

(a) Deterioration, malfunctions or improper operation of overtopping control systems.

(b) Sudden drops in the level of the impoundment's contents.

(c) Severe erosion or other signs of deterioration in dikes or other containment devices.

(3) Prior to the issuance of an operating license, and after any extended period of time (at least 6 months) during which the impoundment was not in service, the owner or operator shall obtain a certification from a qualified engineer that the impoundment's dike, including that portion of any dike which provides freeboard, has structural integrity. The certification shall establish, in particular, that the dike will do both of the following:

(a) Withstand the stress of the pressure exerted by the types and amounts of wastes to be placed in the impoundment.

(b) Not fail due to scouring or piping, without dependence on any liner system included in the surface impoundment construction.

(4) (a) An owner or operator required to have a leak detection system under s. NR 664.0221 (3) or (4) shall record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

(b) After the final cover is installed, the amount of liquids removed from each leak detection system sump shall be recorded at least monthly. If the liquid level in the sump stays below the pump operating level for 2 consecutive months, the amount of liquids in the sumps shall be recorded at least quarterly. If the liquid level in the sump stays below the pump operating level for 2 consecutive quarters, the amount of liquids in the sumps shall be recorded at least semi−annually. If at any time during the long−term care period the pump operating level is exceeded at units on quarterly or semi− annual recording schedules, the owner or operator shall return to monthly recording of amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for 2 consecutive months.

(c) "Pump operating level" is a liquid level proposed by the owner or operator and approved by the department based on pump activation level, sump dimensions and level that avoids backup into the drainage layer and minimizes head in the sump.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0227 Emergency repairs; contingency plans. (1) A surface impoundment shall be removed from service in accordance with sub. (2) when either of the following occurs:

(a) The level of liquids in the impoundment suddenly drops and the drop is not known to be caused by changes in the flows into or out of the impoundment.

(b) The dike leaks.

(2) When a surface impoundment must be removed from service as required by sub. (1), the owner or operator shall do all of the following:

(a) Immediately shut off the flow or stop the addition of wastes into the impoundment.

(b) Immediately contain any surface leakage which has occurred or is occurring.

(c) Immediately stop the leak.

(d) Take any other necessary steps to stop or prevent catastrophic failure.

(e) If a leak cannot be stopped by any other means, empty the impoundment.

(f) Notify the department of the problem in writing within 7 days after detecting the problem.

(3) As part of the contingency plan required in subch. D, the owner or operator shall specify a procedure for complying with the requirements of sub. (2).

(4) No surface impoundment that has been removed from service in accordance with the requirements of this section may be restored to service unless the portion of the impoundment which was failing is repaired and the following steps are taken:

(a) If the impoundment was removed from service as the result of actual or imminent dike failure, the dike's structural integrity shall be recertified in accordance with s. NR 664.0226 (3).

(b) If the impoundment was removed from service as the result of a sudden drop in the liquid level, then both of the following apply:

1. For any existing portion of the impoundment, a liner shall be installed in compliance with s. NR 664.0221 (1).

2. For any other portion of the impoundment, the repaired liner system shall be certified by a qualified engineer as meeting the design specifications approved in the operating license.

(5) A surface impoundment that has been removed from service in accordance with the requirements of this section and that is not being repaired shall be closed in accordance with the provisions of s. NR 664.0228.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0228 Closure and long−term care. (1) At closure, the owner or operator shall comply with either par. (a) or (b):

(a) Remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless s. NR 661.03 (4) applies.

(b) Do all of the following:

1. Eliminate free liquids by removing liquid wastes or solidifying the remaining wastes and waste residues.

2. Stabilize remaining wastes to a bearing capacity sufficient to support final cover.

3. Cover the surface impoundment with a final cover designed and constructed to do all of the following:

a. Provide long−term minimization of the migration of liquids through the closed impoundment.

b. Function with minimum maintenance.

c. Promote drainage and minimize erosion or abrasion of the final cover.

d. Accommodate settling and subsidence so that the cover's integrity is maintained.

e. Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

(2) If some waste residues or contaminated materials are left in place at final closure, the owner or operator shall comply with all long−term care requirements contained in ss. NR 664.0117 to

664.0120, including maintenance and monitoring throughout the long−term care period (specified in the operating license under s. NR 664.0117). The owner or operator shall do all of the following:

(a) Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion or other events.

(b) Maintain and monitor the leak detection system in accordance with ss. NR 664.0221 (3) (b) 4. and (c) and 664.0226 (4), and comply with all other applicable leak detection system requirements of this chapter.

(c) Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of subch. F.

(d) Prevent run−on and run−off from eroding or otherwise damaging the final cover.

(3) (a) If an owner or operator plans to close a surface impoundment in accordance with sub. (1) (a), and the impoundment does not comply with the liner requirements of s. NR 664.0221 (1) and is not exempt from them in accordance with s. NR 664.0221 (2), then both of the following apply:

1. The closure plan for the impoundment under s. NR 664.0112 shall include both a plan for complying with sub. (1) (a) and a contingent plan for complying with sub. (1) (b) in case not all contaminated subsoils can be practicably removed at closure.

2. The owner or operator shall prepare a contingent long−term care plan under s. NR 664.0118 for complying with sub. (2) in case not all contaminated subsoils can be practicably removed at closure.

(b) The cost estimates calculated under ss. NR 664.0142 and 664.0144 for closure and long−term care of an impoundment subject to this subsection shall include the cost of complying with the contingent closure plan and the contingent long−term care plan, but are not required to include the cost of expected closure under sub. (1) (a).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0229 Special requirements for ignitable or reactive waste. Ignitable or reactive waste may not be placed in a surface impoundment, unless the waste and impoundment satisfy all applicable requirements of ch. NR 668, and sub. (1), (2) or (3):

(1) The waste is treated, rendered or mixed before or immediately after placement in the impoundment so that both of the following apply:

(a) The resulting waste, mixture or dissolution of material no longer meets the definition of ignitable or reactive waste under s. NR 661.21 or 661.23.

(b) Section NR 664.0017 (2) is complied with.

(2) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

(3) The surface impoundment is used solely for emergencies.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0230 Special requirements for incompatible wastes. Incompatible wastes, or incompatible wastes and materials, (see ch. NR 664 Appendix V for examples) may not be placed in the same surface impoundment, unless s. NR 664.0017 (2) is complied with.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; **correction made under s. 13.92 (4) (b) 7., Stats., Register March 2013 No. 687.**

NR 664.0231 Special requirements for hazardous wastes F020, F021, F022, F023, F026 and F027. (1) Hazardous wastes F020, F021, F022, F023, F026 and F027 may not be placed in a surface impoundment unless the owner or operator operates the surface impoundment in accordance with a management plan for these wastes that is approved by the department pursuant to the standards set out in this subsection, and in accord with all other applicable requirements of this chapter. All of the following factors shall be considered:

(a) The volume and physical and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere.

(b) The attenuative properties of underlying and surrounding soils or other materials.

(c) The mobilizing properties of other materials co−disposed with these wastes.

(d) The effectiveness of additional treatment, design or monitoring techniques.

(2) The department may determine that additional design, operating and monitoring requirements are necessary for surface impoundments managing hazardous wastes F020, F021, F022, F023, F026 and F027 in order to reduce the possibility of migration of these wastes to groundwater, surface water or air so as to protect human health and the environment.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0232 Air emission standards. The owner or operator shall manage all hazardous waste placed in a surface impoundment in accordance with the applicable requirements of subchs. BB and CC.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter L — Waste Piles

NR 664.0250 Applicability. (1) This subchapter applies to owners and operators of facilities that store or treat hazardous waste in piles, except as s. NR 664.0001 provides otherwise.

(2) This subchapter does not apply to owners or operators of waste piles that are closed with wastes left in place. Those waste piles are regulated under subch. N (landfills).

(3) The owner or operator of any waste pile that is inside or under a structure that provides protection from precipitation so that neither run−off nor leachate is generated is not regulated under s. NR 664.0251 or under subch. F, if all of the following are met:

(a) Liquids or materials containing free liquids are not placed in the pile.

(b) The pile is protected from surface water run−on by the structure or in some other manner.

(c) The pile is designed and operated to control dispersal of the waste by wind, where necessary, by means other than wetting.

(d) The pile will not generate leachate through decomposition or other reactions.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0251 Design and operating requirements. (1) A waste pile (except for an existing portion of a waste pile) shall have both of the following:

(a) A liner that is designed, constructed and installed to prevent any migration of wastes out of the pile into the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the waste pile. The liner may be constructed of materials that may allow waste to migrate into the liner itself (but not into the adjacent subsurface soil or groundwater or surface water) during the active life of the facility. The liner shall be all of the following:

1. Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation and the stress of daily operation.

2. Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and

below the liner to prevent failure of the liner due to settlement, compression or uplift.

3. Installed to cover all surrounding earth likely to be in contact with the waste or leachate.

(b) A leachate collection and removal system immediately above the liner that is designed, constructed, maintained and operated to collect and remove leachate from the pile. The department shall specify design and operating conditions in the operating license to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system shall be both of the following:

1. Constructed of materials that are both of the following:

a. Chemically resistant to the waste managed in the pile and the leachate expected to be generated.

b. Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying wastes, waste cover materials and any equipment used at the pile.

2. Designed and operated to function without clogging through the scheduled closure of the waste pile.

(2) The owner or operator will be exempted from the requirements of sub. (1), if the department finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see s. NR 664.0093) into the groundwater or surface water at any future time. In deciding whether to grant an exemption, the department will consider all of the following:

(a) The nature and quantity of the wastes.

(b) The proposed alternate design and operation.

(c) The hydrogeologic setting of the facility, including attenuative capacity and thickness of the liners and soils present between the pile and groundwater or surface water.

(d) All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to groundwater or surface water.

(3) The owner or operator of each new waste pile unit on which construction commences after June 1, 1995, each lateral expansion of a waste pile unit on which construction commences after June 1, 1995 and each replacement of an existing waste pile unit that is to commence reuse after June 1, 1995 shall install 2 or more liners and a leachate collection and removal system above and between the liners. "Construction commences" is as defined in s. NR 660.10 under "existing facility".

(a) 1. The liner system shall include both of the following:

a. A top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into the liner during the active life and long−term care period.

b. A composite bottom liner, consisting of at least 2 components. The upper component shall be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and long−term care period. The lower component shall be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur. The lower component shall be constructed of at least 3 feet (91 cm) of compacted soil material with a hydraulic conductivity of no more than 1×10^{-7} cm/sec.

2. The liners shall comply with sub. (1) (a) 1., 2. and 3.

(b) The leachate collection and removal system immediately above the top liner shall be designed, constructed, operated and maintained to collect and remove leachate from the waste pile during the active life and long−term care period. The department will specify design and operating conditions in the operating license to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system shall comply with par. (c) 3. and 4.

(c) The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system shall be capable of detecting, collecting and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and long−term care period. The requirements for a leak detection system in this subsection are satisfied by installation of a system that is, at a minimum, all of the following:

1. Constructed with a bottom slope of 1% or more.

2. Constructed of granular drainage materials with a hydraulic conductivity of 1×10^{-2} cm/sec or more and a thickness of 12 inches (30.5 cm) or more; or constructed of synthetic or geonet drainage materials with a transmissivity of 3×10^{-5} m ^{2}/sec or more.

3. Constructed of materials that are chemically resistant to the waste managed in the waste pile and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials and equipment used at the waste pile.

4. Designed and operated to minimize clogging during the active life and long−term care period.

5. Constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit shall have its own sump. The design of each sump and removal system shall provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.

(d) The owner or operator shall collect and remove pumpable liquids in the leak detection system sumps to minimize the head on the bottom liner.

(e) The owner or operator of a leak detection system that is not located completely above the seasonal high water table shall demonstrate that the operation of the leak detection system will not be adversely affected by the presence of groundwater.

(4) The department may approve alternative design or operating practices to those specified in sub. (3) if the owner or operator demonstrates to the department that the design and operating practices, together with location characteristics, will do both of the following:

(a) Prevent the migration of any hazardous constituent into the groundwater or surface water at least as effectively as the liners and leachate collection and removal systems specified in sub. (3).

(b) Allow detection of leaks of hazardous constituents through the top liner at least as effectively.

(5) Subsection (3) does not apply to monofills that are granted a waiver by the department in accordance with s. NR 664.0221 (5).

(6) The owner or operator of any replacement waste pile unit is exempt from sub. (3) if both of the following apply:

(a) The existing unit was constructed in compliance with the design standards of 42 USC 6924(o)(1)(A)(i) and (5).

(b) There is no reason to believe that the liner is not functioning as designed.

(7) The owner or operator shall design, construct, operate and maintain a run−on control system capable of preventing flow onto the active portion of the pile during peak discharge from at least a 25−year storm.

(8) The owner or operator shall design, construct, operate and maintain a run−off management system to collect and control at least the water volume resulting from a 24−hour, 25−year storm.

(9) Collection and holding facilities (e.g., tanks or basins) associated with run−on and run−off control systems shall be emp-

tied or otherwise managed expeditiously after storms to maintain design capacity of the system.

(10) If the pile contains any particulate matter which may be subject to wind dispersal, the owner or operator shall cover or otherwise manage the pile to control wind dispersal.

(11) The department shall specify in the operating license all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0252 Action leakage rate. (1) The department shall approve an action leakage rate for waste pile units subject to s. NR 664.0251 (3) or (4). The action leakage rate is the maximum design flow rate that the leak detection system can remove without the fluid head on the bottom liner exceeding one foot. The action leakage rate shall include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation and location of the leak detection system, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the leak detection system and proposed response actions (e.g., the action leakage rate shall consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

(2) To determine if the action leakage rate has been exceeded, the owner or operator shall convert the weekly flow rate from the monitoring data obtained under s. NR 664.0254 (3), to an average daily flow rate (gallons per acre per day) for each sump. Unless the department approves a different calculation, the average daily flow rate for each sump shall be calculated weekly during the active life and closure period.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0253 Response actions. (1) The owner or operator of waste pile units subject to s. NR 664.0251 (3) or (4) shall have an approved response action plan before receipt of waste. The response action plan shall set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan shall describe the actions specified in sub. (2).

(2) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator shall do all of the following:

(a) Notify the department in writing of the exceedance within 7 days of the determination.

(b) Submit a preliminary written assessment to the department within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size and cause of any leaks and short−term actions taken and planned.

(c) Determine to the extent practicable the location, size and cause of any leak.

(d) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs or controls and whether or not the unit should be closed.

(e) Determine any other short−term and long−term actions to be taken to mitigate or stop any leaks.

(f) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the department the results of the analyses specified in pars. (c), (d) and (e), the results of actions taken and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator shall submit to the department a report summarizing the results of any remedial actions taken and actions planned.

(3) To make the leak and remediation determinations in sub. (2) (c), (d) and (e), the owner or operator shall comply with par. (a) or (b):

(a) Do all of the following:

1. Assess the source of liquids and amounts of liquids by source.

2. Conduct a fingerprint, hazardous constituent or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid.

3. Assess the seriousness of any leaks in terms of potential for escaping into the environment.

(b) Document why the assessments are not needed.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0254 Monitoring and inspection. (1) During construction or installation, liners (except in the case of existing portions of piles exempt from s. NR 664.0251 (1)) and cover systems (e.g., membranes, sheets or coatings) shall be inspected for uniformity, damage and imperfections (e.g., holes, cracks, thin spots or foreign materials). Both of the following inspections are required immediately after construction or installation:

(a) Synthetic liners and covers shall be inspected to ensure tight seams and joints and the absence of tears, punctures or blisters.

(b) Soil−based and admixed liners and covers shall be inspected for imperfections including lenses, cracks, channels, root holes or other structural non−uniformities that may cause an increase in the permeability of the liner or cover.

(2) While a waste pile is in operation, it shall be inspected weekly and after storms to detect evidence of any of the following:

(a) Deterioration, malfunctions or improper operation of run−on and run−off control systems.

(b) Proper functioning of wind dispersal control systems, where present.

(c) The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

(3) An owner or operator required to have a leak detection system under s. NR 664.0251 (3) shall record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0256 Special requirements for ignitable or reactive waste. Ignitable or reactive waste may not be placed in a waste pile unless the waste and waste pile satisfy all applicable requirements of ch. NR 668 and sub. (1) or (2):

(1) The waste is treated, rendered or mixed before or immediately after placement in the pile so that both of the following apply:

(a) The resulting waste, mixture or dissolution of material no longer meets the definition of ignitable or reactive waste under s. NR 661.21 or 661.23.

(b) Section NR 664.0017 (2) is complied with.

(2) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0257 Special requirements for incompatible wastes. (1) Incompatible wastes, or incompatible wastes and materials, (see ch. NR 664 Appendix V for examples) may not be placed in the same pile, unless s. NR 664.0017 (2) is complied with.

(2) A pile of hazardous waste that is incompatible with any waste or other material stored nearby in containers, other piles, open tanks or surface impoundments shall be separated from the

other materials, or protected from them by means of a dike, berm, wall or other device.

(3) Hazardous waste may not be piled on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to ensure compliance with s. NR 664.0017 (2).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; **correction in (1) made under s. 13.92 (4) (b) 7., Stats., Register March 2013 No. 687.**

NR 664.0258 Closure and long−term care. (1) At closure, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless s. NR 661.03 (4) applies.

(2) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures and equipment as required in sub. (1), the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, the owner or operator shall close the facility and perform long−term care in accordance with the closure and long−term care requirements that apply to landfills (s. NR 664.0310).

(3) (a) The owner or operator of a waste pile that does not comply with the liner requirements of s. NR 664.0251 (1) (a) and is not exempt from them in accordance with s. NR 664.0250 (3) or 664.0251 (2), shall do both of the following:

1. Include in the closure plan for the pile under s. NR 664.0112 both a plan for complying with sub. (1) and a contingent plan for complying with sub. (2) in case not all contaminated subsoils can be practicably removed at closure.

2. Prepare a contingent long−term care plan under s. NR 664.0118 for complying with sub. (2) in case not all contaminated subsoils can be practicably removed at closure.

(b) The cost estimates calculated under ss. NR 664.0142 and 664.0144 for closure and long−term care of a pile subject to this subsection shall include the cost of complying with the contingent closure plan and the contingent long−term care plan, but are not required to include the cost of expected closure under sub. (1).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0259 Special requirements for hazardous wastes F020, F021, F022, F023, F026 and F027. (1) Hazardous wastes F020, F021, F022, F023, F026 and F027 may not be placed in waste piles that are not enclosed (as defined in s. NR 664.0250 (3)) unless the owner or operator operates the waste pile in accordance with a management plan for these wastes that is approved by the department pursuant to the standards set out in this subsection, and in accord with all other applicable requirements of this chapter. All of the following factors shall be considered:

(a) The volume and physical and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere.

(b) The attenuative properties of underlying and surrounding soils or other materials.

(c) The mobilizing properties of other materials co−disposed with these wastes.

(d) The effectiveness of additional treatment, design or monitoring techniques.

(2) The department may determine that additional design, operating and monitoring requirements are necessary for piles managing hazardous wastes F020, F021, F022, F023, F026 and F027 in order to reduce the possibility of migration of these wastes to groundwater, surface water or air so as to protect human health and the environment.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter M — Land Treatment

NR 664.0270 Applicability. Land treatment of any hazardous waste is prohibited. The department may not grant a variance under s. 291.31, Stats., to allow land treatment of any hazardous waste, as identified or listed in ch. NR 661.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter N — Landfills

NR 664.0300 Applicability. This subchapter applies to owners and operators of facilities that dispose of hazardous waste in landfills, except as s. NR 664.0001 provides otherwise.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0301 Design and operating requirements. (1) Any landfill that is not covered by sub. (3) or s. NR 665.0301 (1) shall have a liner system for all portions of the landfill (except for existing portions of the landfill). The liner system shall have both of the following:

(a) A liner that is designed, constructed and installed to prevent any migration of wastes out of the landfill to the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the landfill. The liner shall be constructed of materials that prevent wastes from passing into the liner during the active life of the facility. The liner shall be all of the following:

1. Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation and the stress of daily operation.

2. Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift.

3. Installed to cover all surrounding earth likely to be in contact with the waste or leachate.

(b) A leachate collection and removal system immediately above the liner that is designed, constructed, maintained and operated to collect and remove leachate from the landfill. The department shall specify design and operating conditions in the operating license to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system shall be both of the following:

1. Constructed of materials that are both of the following:

a. Chemically resistant to the waste managed in the landfill and the leachate expected to be generated.

b. Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials and any equipment used at the landfill.

2. Designed and operated to function without clogging through the scheduled closure of the landfill.

(2) The owner or operator will be exempted from the requirements of sub. (1) if the department finds, based on a demonstration by the owner or operator, that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see s. NR 664.0093) into the groundwater or surface water at any future time. In deciding whether to grant an exemption, the department will consider all of the following:

(a) The nature and quantity of the wastes.

(b) The proposed alternate design and operation.

(c) The hydrogeologic setting of the facility, including the attenuative capacity and thickness of the liners and soils present between the landfill and groundwater or surface water.

(d) All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to groundwater or surface water.

(3) The owner or operator of each new landfill unit on which construction commences after June 1, 1995, each lateral expansion of a landfill unit on which construction commences after June 1, 1995, and each replacement of an existing landfill unit that is to commence reuse after June 1, 1995 shall install 2 or more liners and a leachate collection and removal system above and between the liners. "Construction commences" is as defined in s. NR 660.10 under "existing facility".

(a) 1. The liner system shall include both of the following:

a. A top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into the liner during the active life and long−term care period.

b. A composite bottom liner, consisting of at least 2 components. The upper component shall be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and long−term care period. The lower component shall be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur. The lower component shall be constructed of at least 3 feet (91 cm) of compacted soil material with a hydraulic conductivity of no more than 1×10^{-7} cm/sec.

2. The liners shall comply with sub. (1) (a) 1., 2. and 3.

(b) The leachate collection and removal system immediately above the top liner shall be designed, constructed, operated and maintained to collect and remove leachate from the landfill during the active life and long−term care period. The department will specify design and operating conditions in the operating license to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system shall comply with par. (c) 3. and 4.

(c) The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system shall be capable of detecting, collecting and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and long−term care period. The requirements for a leak detection system in this subsection are satisfied by installation of a system that is, at a minimum, all of the following:

1. Constructed with a bottom slope of 1% or more.

2. Constructed of granular drainage materials with a hydraulic conductivity of 1×10^{-2} cm/sec or more and a thickness of 12 inches (30.5 cm) or more; or constructed of synthetic or geonet drainage materials with a transmissivity of 3×10^{-5} m^2/sec or more.

3. Constructed of materials that are chemically resistant to the waste managed in the landfill and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials and equipment used at the landfill.

4. Designed and operated to minimize clogging during the active life and long−term care period.

5. Constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit shall have its own sump. The design of each sump and removal system shall provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.

(d) The owner or operator shall collect and remove pumpable liquids in the leak detection system sumps to minimize the head on the bottom liner.

(e) The owner or operator of a leak detection system that is not located completely above the seasonal high water table shall demonstrate that the operation of the leak detection system will not be adversely affected by the presence of groundwater.

(4) The department may approve alternative design or operating practices to those specified in sub. (3) if the owner or operator demonstrates to the department that the design and operating practices, together with location characteristics, will do both of the following:

(a) Prevent the migration of any hazardous constituent into the groundwater or surface water at least as effectively as the liners and leachate collection and removal systems specified in sub. (3).

(b) Allow detection of leaks of hazardous constituents through the top liner at least as effectively.

(5) The double liner requirement in sub. (3) may be waived by the department for any monofill, if pars. (a) and (b) 1. or 2. apply:

(a) The monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and the wastes do not contain constituents which would render the wastes hazardous for reasons other than the toxicity characteristic in s. NR 661.24, with EPA hazardous waste numbers D004 to D017.

(b) 1. All of the following conditions are met:

a. The monofill has at least one liner for which there is no evidence that the liner is leaking.

b. The monofill is located more than one−quarter mile from an underground source of drinking water (as that term is defined in 40 CFR 144.3).

c. The monofill is in compliance with generally applicable groundwater monitoring requirements for facilities with operating licenses under s. 291.25, Stats.

2. The owner or operator demonstrates that the monofill is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into groundwater or surface water at any future time.

(6) The owner or operator of any replacement landfill unit is exempt from sub. (3) if both of the following apply:

(a) The existing unit was constructed in compliance with the design standards of 42 USC 6924(o)(1)(A)(i) and (5).

(b) There is no reason to believe that the liner is not functioning as designed.

(7) The owner or operator shall design, construct, operate and maintain a run−on control system capable of preventing flow onto the active portion of the landfill during peak discharge from at least a 25−year storm.

(8) The owner or operator shall design, construct, operate and maintain a run−off management system to collect and control at least the water volume resulting from a 24−hour, 25−year storm.

(9) Collection and holding facilities (e.g., tanks or basins) associated with run−on and run−off control systems shall be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

(10) If the landfill contains any particulate matter which may be subject to wind dispersal, the owner or operator shall cover or otherwise manage the landfill to control wind dispersal.

(11) The department shall specify in the operating license all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0302 Action leakage rate. (1) The department shall approve an action leakage rate for landfill units subject to s. NR 664.0301 (3) or (4). The action leakage rate is the maximum design flow rate that the leak detection system can remove without the fluid head on the bottom liner exceeding one foot. The action leakage rate shall include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation and loca-

tion of the leak detection system, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the leak detection system and proposed response actions (e.g., the action leakage rate shall consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

(2) To determine if the action leakage rate has been exceeded, the owner or operator shall convert the weekly or monthly flow rate from the monitoring data obtained under s. NR 664.0303 (3), to an average daily flow rate (gallons per acre per day) for each sump. Unless the department approves a different calculation, the average daily flow rate for each sump shall be calculated weekly during the active life and closure period, and monthly during the long−term care period when monthly monitoring is required under s. NR 664.0303 (3).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0303 Monitoring and inspection. (1) During construction or installation, liners (except in the case of existing portions of landfills exempt from s. NR 664.0301 (1)) and cover systems (e.g., membranes, sheets or coatings) shall be inspected for uniformity, damage and imperfections (e.g., holes, cracks, thin spots or foreign materials). Both of the following inspections are required immediately after construction or installation:

(a) Synthetic liners and covers shall be inspected to ensure tight seams and joints and the absence of tears, punctures or blisters.

(b) Soil−based and admixed liners and covers shall be inspected for imperfections including lenses, cracks, channels, root holes or other structural non−uniformities that may cause an increase in the permeability of the liner or cover.

(2) While a landfill is in operation, it shall be inspected weekly and after storms to detect evidence of any of the following:

(a) Deterioration, malfunctions or improper operation of run−on and run−off control systems.

(b) Proper functioning of wind dispersal control systems, where present.

(c) The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

(3) (a) An owner or operator required to have a leak detection system under s. NR 664.0301 (3) or (4) shall record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

(b) After the final cover is installed, the amount of liquids removed from each leak detection system sump shall be recorded at least monthly. If the liquid level in the sump stays below the pump operating level for 2 consecutive months, the amount of liquids in the sumps shall be recorded at least quarterly. If the liquid level in the sump stays below the pump operating level for 2 consecutive quarters, the amount of liquids in the sumps shall be recorded at least semi−annually. If at any time during the long−term care period the pump operating level is exceeded at units on quarterly or semi−annual recording schedules, the owner or operator shall return to monthly recording of amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for 2 consecutive months.

(c) "Pump operating level" is a liquid level proposed by the owner or operator and approved by the department based on pump activation level, sump dimensions and level that avoids backup into the drainage layer and minimizes head in the sump.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0304 Response actions. (1) The owner or operator of landfill units subject to s. NR 664.0301 (3) or (4) shall have an approved response action plan before receipt of waste. The response action plan shall set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan shall describe the actions specified in sub. (2).

(2) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator shall do all of the following:

(a) Notify the department in writing of the exceedence within 7 days of the determination.

(b) Submit a preliminary written assessment to the department within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size and cause of any leaks and short−term actions taken and planned.

(c) Determine to the extent practicable the location, size and cause of any leak.

(d) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs or controls and whether or not the unit should be closed.

(e) Determine any other short−term and longer−term actions to be taken to mitigate or stop any leaks.

(f) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the department the results of the analyses specified pars. (c), (d) and (e), the results of actions taken and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator shall submit to the department a report summarizing the results of any remedial actions taken and actions planned.

(3) To make the leak and remediation determinations in sub. (2) (c), (d) and (e), the owner or operator shall comply with par. (a) or (b):

(a) Do all of the following:

1. Assess the source of liquids and amounts of liquids by source.

2. Conduct a fingerprint, hazardous constituent or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid.

3. Assess the seriousness of any leaks in terms of potential for escaping into the environment.

(b) Document why the assessments are not needed.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0309 Surveying and recordkeeping. The owner or operator of a landfill shall maintain both of the following items in the operating record required under s. NR 664.0073:

(1) On a map, the exact location and dimensions, including depth, of each cell with respect to permanently surveyed benchmarks.

(2) The contents of each cell and the approximate location of each hazardous waste type within each cell.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0310 Closure and long−term care. (1) At final closure of the landfill or upon closure of any cell, the owner or operator shall cover the landfill or cell with a final cover designed and constructed to do all of the following:

(a) Provide long−term minimization of migration of liquids through the closed landfill.

(b) Function with minimum maintenance.

(c) Promote drainage and minimize erosion or abrasion of the cover.

(d) Accommodate settling and subsidence so that the cover's integrity is maintained.

(e) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

(2) After final closure, the owner or operator shall comply with all long−term care requirements contained in ss. NR

664.0117 to 664.0120, including maintenance and monitoring throughout the long−term care period (specified in the operating license under s. NR 664.0117). The owner or operator shall do all of the following:

(a) Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion or other events.

(b) Continue to operate the leachate collection and removal system until leachate is no longer detected.

(c) Maintain and monitor the leak detection system in accordance with ss. NR 664.0301 (3) (c) 4. and (d) and 664.0303 (3), and comply with all other applicable leak detection system requirements of this chapter.

(d) Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of subch. F.

(e) Prevent run−on and run−off from eroding or otherwise damaging the final cover.

(f) Protect and maintain surveyed benchmarks used in complying with s. NR 664.0309.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0312 Special requirements for ignitable or reactive waste. (1) Except as provided in sub. (2), and in s. NR 664.0316, ignitable or reactive waste may not be placed in a landfill, unless the waste and landfill meet all applicable requirements of ch. NR 668 and both of the following:

(a) The resulting waste, mixture or dissolution of material no longer meets the definition of ignitable or reactive waste under s. NR 661.21 or 661.23.

(b) Section NR 664.0017 (2) is complied with.

(2) Except for prohibited wastes which remain subject to treatment standards in subch. D of ch. NR 668, ignitable wastes in containers may be landfilled without meeting the requirements of sub. (1), provided that the wastes are disposed of in such a way that they are protected from any material or conditions which may cause them to ignite. At a minimum, ignitable wastes shall be disposed of in non−leaking containers which are carefully handled and placed so as to avoid heat, sparks, rupture or any other condition that might cause ignition of the wastes; shall be covered daily with soil or other non−combustible material to minimize the potential for ignition of the wastes and may not be disposed of in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the waste.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0313 Special requirements for incompatible wastes. Incompatible wastes, or incompatible wastes and materials, (see ch. NR 664 Appendix V for examples) may not be placed in the same landfill cell, unless s. NR 664.0017 (2) is complied with.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; **correction made under s. 13.92 (4) (b) 7., Stats., Register March 2013 No. 687.**

NR 664.0314 Special requirements for bulk and containerized liquids. (1) Bulk or non−containerized liquid waste or waste containing free liquids may be placed in a landfill prior to April 1, 1988 only if either of the following is met:

(a) The landfill has a liner and leachate collection and removal system that meet the requirements of s. NR 664.0301 (1).

(b) Before disposal, the liquid waste or waste containing free liquids is treated or stabilized, chemically or physically (e.g., by mixing with a sorbent solid), so that free liquids are no longer present.

(2) Effective April 1, 1988, the placement of bulk or non−containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill is prohibited.

(3) To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following test shall be used: Method 9095 (paint filter liquids test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA SW−846, incorporated by reference in s. NR 660.11.

(4) Containers holding free liquids may not be placed in a landfill unless par. (a), (b), (c) or (d) applies:

(a) All free−standing liquid is handled in one of the following ways:

1. It has been removed by decanting, or other methods.

2. It has been mixed with sorbent or solidified so that free−standing liquid is no longer observed.

3. It has been otherwise eliminated.

(b) The container is very small, such as an ampule.

(c) The container is designed to hold free liquids for use other than storage, such as a battery or capacitor.

(d) The container is a lab pack as defined in s. NR 664.0316 and is disposed of in accordance with s. NR 664.0316.

(5) Sorbents used to treat free liquids to be disposed of in landfills shall be nonbiodegradable. Nonbiodegradable sorbents are materials listed or described in par. (a); materials that pass one of the tests in par. (b) or materials that are determined by EPA to be nonbiodegradable through the 40 CFR part 260 petition process.

(a) Nonbiodegradable sorbents are any of the following:

1. Inorganic minerals, other inorganic materials and elemental carbon (e.g., aluminosilicates, clays, smectites, Fuller's earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite), vermiculites, zeolites; calcium carbonate (organic free limestone); oxides or hydroxides, alumina, lime, silica (sand), diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement kiln dust; fly ash; rice hull ash; activated charcoal or activated carbon).

2. High molecular weight synthetic polymers (e.g., polyethylene, high density polyethylene (HDPE), polypropylene, polystyrene, polyurethane, polyacrylate, polynorborene, polyisobutylene, ground synthetic rubber, cross−linked allylstyrene and tertiary butyl copolymers). This does not include polymers derived from biological material or polymers specifically designed to be degradable.

3. Mixtures of these nonbiodegradable materials.

(b) The sorbent material may be determined to be nonbiodegradable using any of the following tests:

1. ASTM Method G21−70 (1984a)—Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi, incorporated by reference in s. NR 660.11.

2. ASTM Method G22−76 (1984b)—Standard Practice for Determining Resistance of Plastics to Bacteria, incorporated by reference in s. NR 660.11.

3. OECD test 301B [CO_2 Evolution (Modified Sturm Test)], incorporated by reference in s. NR 660.11.

(6) Effective March 1, 1991, the placement of any liquid which is not a hazardous waste in a landfill is prohibited unless the owner or operator of the landfill demonstrates to the department, or the department determines, that both of the following apply:

(a) The only reasonably available alternative to the placement in the landfill is placement in a landfill or unlined surface impoundment, whether or not operating under an operating license or interim license, which contains, or may reasonably be anticipated to contain, hazardous waste.

(b) Placement in the owner or operator's landfill will not present a risk of contamination of any underground source of drinking water (as that term is defined in 40 CFR 144.3).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0315 Special requirements for containers. Unless they are very small, such as an ampule, containers shall be either of the following:

(1) At least 90% full when placed in the landfill.

(2) Crushed, shredded or similarly reduced in volume to the maximum practical extent before burial in the landfill.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0316 Disposal of small containers of hazardous waste in overpacked drums (lab packs). Small containers of hazardous waste in overpacked drums (lab packs) may be placed in a landfill if all of the following requirements are met:

(1) Hazardous waste shall be packaged in non−leaking inside containers. The inside containers shall be of a design and constructed of a material that will not react dangerously with, be decomposed by or be ignited by the contained waste. Inside containers shall be tightly and securely sealed. The inside containers shall be of the size and type specified in the U.S. department of transportation (DOT) hazardous materials regulations (49 CFR parts 173, 178 and 179), if those regulations specify a particular inside container for the waste.

(2) The inside containers shall be overpacked in an open head DOT−specification metal shipping container (49 CFR parts 178 and 179) of no more than 416−liter (110 gallon) capacity and surrounded by, at a minimum, a sufficient quantity of sorbent material, determined to be nonbiodegradable in accordance with s. NR 664.0314 (5), to completely sorb all of the liquid contents of the inside containers. The metal outer container shall be full after it has been packed with inside containers and sorbent material.

(3) The sorbent material used may not be capable of reacting dangerously with, being decomposed by or being ignited by the contents of the inside containers, in accordance with s. NR 664.0017 (2).

(4) Incompatible wastes, as defined in s. NR 660.10, may not be placed in the same outside container.

(5) Reactive wastes, other than cyanide− or sulfide−bearing waste as defined in s. NR 661.23 (1) (e), shall be treated or rendered non−reactive prior to packaging in accordance with subs. (1) to (4). Cyanide− and sulfide−bearing reactive waste may be packed in accordance with subs. (1) to (4) without first being treated or rendered non−reactive.

(6) The disposal is in compliance with the requirements of ch. NR 668. Persons who incinerate lab packs according to the requirements in s. NR 668.42 (3) (a) may use fiber drums in place of metal outer containers. The fiber drums shall meet the DOT specifications in 49 CFR 173.12 and be overpacked according to the requirements in sub. (2).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0317 Special requirements for hazardous wastes F020, F021, F022, F023, F026 and F027. (1) Hazardous wastes F020, F021, F022, F023, F026 and F027 may not be placed in a landfill unless the owner or operator operates the landfill in accord with a management plan for these wastes that is approved by the department pursuant to the standards set out in this subsection, and in accord with all other applicable requirements of this chapter. All of the following factors shall be considered:

(a) The volume and physical and chemical characteristics of the wastes, including their potential to migrate through the soil or to volatilize or escape into the atmosphere.

(b) The attenuative properties of underlying and surrounding soils or other materials.

(c) The mobilizing properties of other materials co−disposed with these wastes.

(d) The effectiveness of additional treatment, design or monitoring requirements.

(2) The department may determine that additional design, operating and monitoring requirements are necessary for landfills managing hazardous wastes F020, F021, F022, F023, F026 and F027 in order to reduce the possibility of migration of these wastes to groundwater, surface water or air so as to protect human health and the environment.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter O — Incinerators

NR 664.0340 Applicability. (1) This subchapter applies to owners and operators of hazardous waste incinerators (as defined in s. NR 660.10), except as s. NR 664.0001 provides otherwise.

(2) (a) Except as provided by pars. (b), (c) and (d), this chapter no longer applies when an owner or operator demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR part 63, subpart EEE, by conducting a comprehensive performance test and submitting a notification of compliance to the EPA administrator under 40 CFR 63.1207(j) and 40 CFR 63.1210(b) documenting compliance with 40 CFR part 63, subpart EEE. Nevertheless, even after this demonstration of compliance with the MACT standards, hazardous waste license conditions that were based on the standards of this chapter will continue to be in effect until the department removes them from the license or denies, suspends or revokes the license, unless the license expressly provides otherwise.

(b) The MACT standards do not replace the closure requirements of s. NR 664.0351 or the applicable requirements of subchs. A to H, BB and CC.

(c) The particulate matter standard of s. NR 664.0343 (3) remains in effect for incinerators that elect to comply with the alternative to the particulate matter standard of 40 CFR 63.1206(b)(14).

(d) All of the following requirements remain in effect for startup, shutdown and malfunction events if the owner or operator elects to comply with s. NR 670.235 (1) (a) 1. to minimize emissions of toxic compounds from these events:

1. Section NR 664.0345 (1) requiring that an incinerator operate according to operating requirements specified in the license.

2. Section NR 664.0345 (3) requiring compliance with the emission standards and operating requirements during startup and shutdown if hazardous waste is in the combustion chamber, except for particular hazardous wastes.

(3) After consideration of the waste analysis included with the feasibility and plan of operation report, the department, in establishing the license conditions, shall exempt the applicant from this subchapter except ss. NR 664.0341 and 664.0351, if all of the following conditions are met:

(a) The department finds that the waste to be burned is one of the following:

1. Listed as a hazardous waste in subch. D of ch. NR 661 solely because it is ignitable (hazard code I), corrosive (hazard code C) or both.

2. Listed as a hazardous waste in subch. D of ch. NR 661 solely because it is reactive (hazard code R) for characteristics other than those in s. NR 661.23 (1) (d) and (e), and will not be burned when other hazardous wastes are present in the combustion zone.

3. A hazardous waste solely because it possesses the characteristic of ignitability, corrosivity or both, as determined by the test for characteristics of hazardous wastes under subch. C of ch. NR 661.

4. A hazardous waste solely because it possesses any of the reactivity characteristics in s. NR 661.23 (1) (a), (b), (c), (f), (g) and (h), and will not be burned when other hazardous wastes are present in the combustion zone.

(b) The waste analysis shows that the waste contains none of the hazardous constituents in ch. NR 661 Appendix VIII, which would reasonably be expected to be in the waste.

(4) If the waste to be burned is one which is described by sub. (3) (a) 1., 2., 3. or 4. and contains insignificant concentrations of the hazardous constituents in ch. NR 661 Appendix VIII, then the department may, in establishing license conditions, exempt the applicant from all requirements of this subchapter, except ss. NR 664.0341 and 664.0351, after consideration of the waste analysis included with the feasibility and plan of operation report, unless the department finds that the waste will pose a threat to human health and the environment when burned in an incinerator.

(5) The owner or operator of an incinerator may conduct trial burns subject only to s. NR 670.062.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; **correction in (2) (a) made under s. 13.92 (4) (b) 7., Stats., Register March 2013.**

NR 664.0341 Waste analysis. (1) As a portion of the trial burn plan required by s. NR 670.062, or with the feasibility and plan of operation report, the owner or operator shall have included an analysis of the waste feed sufficient to provide all information required by s. NR 670.062 (2) or 670.019. Owners or operators of new hazardous waste incinerators shall provide the information required by s. NR 670.062 (3) or 670.019 to the greatest extent possible.

(2) Throughout normal operation the owner or operator shall conduct sufficient waste analysis to verify that waste feed to the incinerator is within the physical and chemical composition limits specified in the owner or operator's license (under s. NR 664.0345 (2)).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0342 Principal organic hazardous constituents (POHCs). (1) The owner or operator shall treat principal organic hazardous constituents (POHCs) in the waste feed to the extent required by the performance standard of s. NR 664.0343.

(2) (a) The department will specify one or more POHCs in the facility's license, from among those constituents in ch. NR 661 Appendix VIII, for each waste feed to be burned. The department will base this specification on the degree of difficulty of incineration of the organic constituents in the waste and on their concentration or mass in the waste feed, considering the results of waste analyses and trial burns or alternative data submitted with the feasibility and plan of operation report. Organic constituents which represent the greatest degree of difficulty of incineration will be those most likely to be designated as POHCs. Constituents are more likely to be designated as POHCs if they are present in large quantities or concentrations in the waste.

(b) The department will designate trial POHCs for performance of trial burns according to the procedure in s. NR 670.062 for obtaining trial burn plan approvals.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0343 Performance standards. The owner or operator shall design, construct and maintain an incinerator burning hazardous waste so that, when operated according to operating requirements specified under s. NR 664.0345, it will meet all of the following performance standards:

(1) (a) Except as provided in par. (b), an incinerator burning hazardous waste shall achieve a destruction and removal efficiency (DRE) of 99.99% for each principal organic hazardous constituent (POHC) designated (under s. NR 664.0342) in its license for each waste feed. Determine the DRE for each POHC using the following equation:

$$DRE = \frac{(W_{in} - W_{out})}{W_{in}} \times 100\ \%$$

where:

W_{in} = mass feed rate of one principal organic hazardous constituent (POHC) in the waste stream feeding the incinerator

W_{out} = mass emission rate of the same POHC present in exhaust emissions prior to release to the atmosphere

(b) An incinerator burning hazardous wastes F020, F021, F022, F023, F026 or F027 shall achieve a destruction and removal efficiency (DRE) of 99.9999% for each principal organic hazardous constituent (POHC) designated (under s. NR 664.0342) in its license. The owner or operator shall demonstrate this performance on POHCs that are more difficult to incinerate than tetra−, penta− and hexachlorodibenzo−p−dioxins and dibenzofurans. The owner or operator shall determine the DRE for each POHC using the equation in par. (a). In addition, the owner or operator of the incinerator shall notify the department of the owner or operator's intent to incinerate hazardous wastes F020, F021, F022, F023, F026 or F027.

(2) An incinerator burning hazardous waste and producing stack emissions of more than 1.8 kilograms per hour (4 pounds per hour) of hydrogen chloride (HCl) shall control HCl emissions such that the rate of emission is no greater than the larger of either 1.8 kilograms per hour or 1% of the HCl in the stack gas prior to entering any pollution control equipment.

(3) An incinerator burning hazardous waste may not emit particulate matter in excess of 180 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot) when corrected for the amount of oxygen in the stack gas according to the formula:

$$P_c = P_m \times \frac{14}{21 - Y}$$

where:

P_c = corrected concentration of particulate matter

P_m = measured concentration of particulate matter

Y = measured concentration of oxygen in the stack gas, using the Orsat method for oxygen analysis of dry flue gas, presented in Method 3 in appendix A of 40 CFR part 60, incorporated by reference in s. NR 660.11

All hazardous waste incinerators except those operating under conditions of oxygen enrichment shall use this correction procedure. For incinerators operating under conditions of oxygen enrichment, the department will select an appropriate correction procedure and specify it in the facility license.

(4) For purposes of license enforcement, compliance with the operating requirements specified in the license (under s. NR 664.0345) is compliance with this section. However, evidence that compliance with those license conditions is insufficient to ensure compliance with the performance requirements of this section may be "information" justifying modification, revocation or reissuance of a license under s. NR 670.041.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0344 Hazardous waste incinerator licenses. (1) The owner or operator of a hazardous waste incinerator may burn only wastes specified in the owner or operator's license and only under operating conditions specified for those wastes under s. NR 664.0345, except in any of the following circumstances:

(a) In approved trial burns under s. NR 670.062.

(b) Under exemptions created by s. NR 664.0340.

(2) Other hazardous wastes may be burned only after the department has specified operating conditions in a new license or a license modification as applicable. The department may base operating requirements for new wastes on either trial burn results or alternative data included with the feasibility and plan of operation report under s. NR 670.019.

(3) The license for a new hazardous waste incinerator shall establish appropriate conditions for each of the applicable requirements of this subchapter, including but not limited to

allowable waste feeds and operating conditions necessary to meet s. NR 664.0345, sufficient to comply with all of the following standards:

(a) For the period beginning with initial introduction of hazardous waste to the incinerator and ending with initiation of the trial burn, and only for the minimum time required to establish operating conditions required in par. (b), not to exceed a duration of 720 hours operating time for treatment of hazardous waste, the operating requirements shall be those most likely to ensure compliance with the performance standards of s. NR 664.0343, based on the department's engineering judgment. The department may extend the duration of this period once for up to 720 additional hours when the applicant demonstrates good cause for the extension.

(b) For the duration of the trial burn, the operating requirements shall be sufficient to demonstrate compliance with the performance standards of s. NR 664.0343 and shall be according to the approved trial burn plan.

(c) For the period immediately following completion of the trial burn, and only for the minimum period sufficient to allow sample analysis, data computation and submission of the trial burn results by the applicant, and review of the trial burn results and modification of the facility license by the department, the operating requirements shall be those most likely to ensure compliance with the performance standards of s. NR 664.0343, based on the department's engineering judgment.

(d) For the remaining duration of the license, the operating requirements shall be those demonstrated, in a trial burn or by alternative data specified in s. NR 670.019 (3), as sufficient to ensure compliance with the performance standards of s. NR 664.0343.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0345 Operating requirements. (1) The owner or operator shall operate an incinerator according to the operating requirements in the license. The department will specify these on a case−by−case basis as those demonstrated (in a trial burn or in alternative data as specified in s. NR 664.0344 (2) and included with the feasibility and plan of operation report) to be sufficient to comply with the performance standards of s. NR 664.0343.

(2) Each set of operating requirements will specify the composition of the waste feed (including acceptable variations in the physical or chemical properties of the waste feed which will not affect compliance with the performance requirement of s. NR 664.0343) to which the operating requirements apply. For each waste feed to which the operating requirements apply, the license will specify acceptable operating limits including all of the following conditions:

(a) Carbon monoxide (CO) level in the stack exhaust gas.

(b) Waste feed rate.

(c) Combustion temperature.

(d) An appropriate indicator of combustion gas velocity.

(e) Allowable variations in incinerator system design or operating procedures.

(f) Other operating requirements as are necessary to ensure that the performance standards of s. NR 664.0343 are met.

(3) During start−up and shut−down of an incinerator, the owner or operator shall not feed hazardous waste (except wastes exempted according to s. NR 664.0340) into the incinerator unless the incinerator is operating within the conditions of operation (temperature, air feed rate, etc.) specified in the license.

(4) The owner or operator shall control fugitive emissions from the combustion zone by one of the following:

(a) Keeping the combustion zone totally sealed against fugitive emissions.

(b) Maintaining a combustion zone pressure lower than atmospheric pressure.

(c) An alternate means of control demonstrated (with the feasibility and plan of operation report) to provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure.

(5) The owner or operator shall operate an incinerator with a functioning system to automatically cut off waste feed to the incinerator when operating conditions deviate from limits established under sub. (1).

(6) The owner or operator shall cease operation of an incinerator when changes in waste feed, incinerator design or operating conditions exceed limits designated in its license.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0347 Monitoring and inspections. (1) The owner or operator shall conduct, as a minimum, all of the following monitoring while incinerating hazardous waste:

(a) Monitor combustion temperature, waste feed rate and the indicator of combustion gas velocity specified in the facility license on a continuous basis.

(b) Monitor CO on a continuous basis at a point in the incinerator downstream of the combustion zone and prior to release to the atmosphere.

(c) Upon request by the department, sample and analyze the waste and exhaust emissions to verify that the operating requirements established in the license achieve the performance standards of s. NR 664.0343.

(2) The owner or operator shall subject the incinerator and associated equipment (pumps, valves, conveyors, pipes, etc.) to thorough visual inspection, at least daily, for leaks, spills, fugitive emissions and signs of tampering.

(3) The owner or operator shall test the emergency waste feed cutoff system and associated alarms at least weekly to verify operability, unless the applicant demonstrates to the department that weekly inspections will unduly restrict or upset operations and that less frequent inspection will be adequate. At a minimum, the owner or operator shall conduct operational testing at least monthly.

(4) The owner or operator shall record this monitoring and inspection data and place the records in the operating log required by s. NR 664.0073.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0351 Closure. At closure the owner or operator shall remove all hazardous waste and hazardous waste residues (including, but not limited to, ash, scrubber waters and scrubber sludges) from the incinerator site.

Note: At closure, as throughout the operating period, unless the owner or operator can demonstrate, according to s. NR 661.03(4), that the residue removed from the incinerator is not hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it according to the applicable requirements of chs. NR 662 to 666.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter S — Special Provisions for Cleanup

NR 664.0550 Applicability of corrective action management unit (CAMU) rules. (1) Except as provided in sub. (2), CAMUs are subject to the requirements of s. NR 664.0552.

(2) CAMUs that were approved before April 22, 2002, or for which substantially complete applications (or equivalents) were submitted to the department on or before November 20, 2000, are subject to the requirements in s. NR 664.0551 for grandfathered CAMUs; CAMU waste, activities and design will not be subject to the standards in s. NR 664.0552, so long as the waste, activities and design remain within the general scope of the CAMU as approved.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0551 Grandfathered corrective action management units (CAMUs). (1) To implement remedies under s. NR 664.0101 or s. 291.37, Stats., or to implement remedies at

a licensed facility that is not subject to s. NR 664.0101, the department may designate an area at the facility as a corrective action management unit under the requirements in this section. In this section, "Corrective action management unit" or "CAMU" means an area within a facility that is used only for managing remediation wastes for implementing corrective action or cleanup at the facility. A CAMU shall be located within the contiguous property under the control of the owner or operator where the wastes to be managed in the CAMU originated. One or more CAMUs may be designated at a facility.

(a) Placement of remediation wastes into or within a CAMU does not constitute land disposal of hazardous wastes.

(b) Consolidation or placement of remediation wastes into or within a CAMU does not constitute creation of a unit subject to minimum technology requirements.

(2) (a) The department may designate a regulated unit (as defined in s. NR 664.0090 (1) (b)) as a CAMU, or may incorporate a regulated unit into a CAMU, if all of the following apply:

1. The regulated unit is closed or closing, meaning it has begun the closure process under s. NR 664.0113 or 665.0113.

2. Inclusion of the regulated unit will enhance implementation of effective, protective and reliable remedial actions for the facility.

(b) The subchs. F, G and H requirements and the unit−specific requirements of this chapter or ch. NR 665 that applied to that regulated unit will continue to apply to that portion of the CAMU after incorporation into the CAMU.

(3) The department shall designate a CAMU in accordance with all of the following:

(a) The CAMU shall facilitate the implementation of reliable, effective, protective and cost−effective remedies.

(b) Waste management activities associated with the CAMU may not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes or hazardous constituents.

(c) The CAMU shall include uncontaminated areas of the facility, only if including the areas for the purpose of managing remediation waste is more protective than management of the wastes at contaminated areas of the facility.

(d) Areas within the CAMU, where wastes remain in place after closure of the CAMU, shall be managed and contained so as to minimize future releases, to the extent practicable.

(e) The CAMU shall expedite the timing of remedial activity implementation, when appropriate and practicable.

(f) The CAMU shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long−term effectiveness of remedial actions by reducing the toxicity, mobility or volume of wastes that will remain in place after closure of the CAMU.

(g) The CAMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the CAMU.

(4) The owner or operator shall provide sufficient information to enable the department to designate a CAMU in accordance with the criteria in s. NR 664.0552.

(5) The department shall specify, in the license or order, requirements for CAMUs to include all of the following:

(a) The areal configuration of the CAMU.

(b) Requirements for remediation waste management to include the specification of applicable design, operation and closure requirements.

(c) Requirements for groundwater monitoring that are sufficient to do all of the following:

1. Continue to detect and to characterize the nature, extent, concentration, direction and movement of existing releases of hazardous constituents in groundwater from sources located within the CAMU.

2. Detect and subsequently characterize releases of hazardous constituents to groundwater that may occur from areas of the CAMU in which wastes will remain in place after closure of the CAMU.

(d) Closure and long−term care requirements.

1. Closure of corrective action management units shall do all of the following:

a. Minimize the need for further maintenance.

b. Control, minimize or eliminate, to the extent necessary to protect human health and the environment, for areas where wastes remain in place, post−closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff or hazardous waste decomposition products to the ground, to surface waters or to the atmosphere.

2. Requirements for closure of CAMUs shall include the following, as appropriate and as deemed necessary by the department for a given CAMU:

a. Requirements for excavation, removal, treatment or containment of wastes.

b. For areas in which wastes will remain after closure of the CAMU, requirements for capping of the areas.

c. Requirements for removal and decontamination of equipment, devices and structures used in remediation waste management activities within the CAMU.

3. In establishing specific closure requirements for CAMUs under s. NR 664.0552 (5), the department shall consider all of the following factors:

a. CAMU characteristics.

b. Volume of wastes which remain in place after closure.

c. Potential for releases from the CAMU.

d. Physical and chemical characteristics of the waste.

e. Hydrogeological and other relevant environmental conditions at the facility which may influence the migration of any potential or actual releases.

f. Potential for exposure of humans and environmental receptors if releases were to occur from the CAMU.

4. Long−term care requirements as necessary to protect human health and the environment, to include, for areas where wastes will remain in place, monitoring and maintenance activities and the frequency with which the activities shall be performed to ensure the integrity of any cap, final cover or other containment system.

(6) The department shall document the rationale for designating CAMUs and shall make the documentation available to the public.

(7) Incorporation of a CAMU into an existing license shall be approved by the department according to the procedures for department−initiated license modifications under s. NR 670.041, or according to the license modification procedures of s. NR 670.042.

(8) The designation of a CAMU does not change the department's existing authority to address clean−up levels, media−specific points of compliance to be applied to remediation at a facility or other remedy selection decisions.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0552 Corrective action management units (CAMUs). (1) To implement remedies under s. NR 664.0101 or ss. 291.37 and 291.97 (1), Stats., or to implement remedies at a licensed facility that is not subject to s. NR 664.0101, the department may designate an area at the facility as a corrective action management unit under the requirements in this section. In this section, "corrective action management unit" or "CAMU" means an area within a facility that is used only for managing CAMU−eligible wastes for implementing corrective action or cleanup at

the facility. A CAMU shall be located within the contiguous property under the control of the owner or operator where the wastes to be managed in the CAMU originated. One or more CAMUs may be designated at a facility.

(a) In this section, "CAMU−eligible waste" means all of the following:

1. All solid and hazardous wastes, and all media (including groundwater, surface water, soils and sediments) and debris, that are managed for implementing cleanup. As−generated wastes (either hazardous or non−hazardous) from ongoing industrial operations at a site are not CAMU−eligible wastes.

2. Wastes that would otherwise meet the description in subd. 1. are not CAMU−eligible wastes if any of the following apply:

a. The wastes are hazardous wastes found during cleanup in intact or substantially intact containers, tanks or other non−land−based units found above ground, unless the wastes are first placed in the tanks, containers or non−land−based units as part of cleanup, or the containers or tanks are excavated during the course of cleanup.

b. The department exercises the discretion in par. (b) to prohibit the wastes from management in a CAMU.

3. Notwithstanding subd. 1., where appropriate, as−generated non−hazardous waste may be placed in a CAMU, where the waste is being used to facilitate treatment or the performance of the CAMU.

(b) The department may prohibit, where appropriate, the placement of waste in a CAMU where the department has or receives information that the wastes have not been managed in compliance with applicable land disposal treatment standards of ch. NR 668, or applicable unit design requirements of this chapter or applicable unit design requirements of ch. NR 665, or that non−compliance with other applicable requirements of chs. NR 660 to 673 likely contributed to the release of the waste.

(c) *Prohibition against placing liquids in CAMUs.* 1. The placement of bulk or noncontainerized liquid hazardous waste or free liquids contained in hazardous waste, whether or not sorbents have been added, in any CAMU is prohibited except where placement of the wastes facilitates the remedy selected for the waste.

2. The requirements in s. NR 664.0314 (4) for placement of containers holding free liquids in landfills apply to placement in a CAMU except where placement facilitates the remedy selected for the waste.

3. The placement of any liquid which is not a hazardous waste in a CAMU is prohibited unless the placement facilitates the remedy selected for the waste or a demonstration is made pursuant to s. NR 664.0314 (6).

4. The absence or presence of free liquids in either a containerized or a bulk waste shall be determined in accordance with s. NR 664.0314 (3). Sorbents used to treat free liquids in CAMUs shall meet the requirements of s. NR 664.0314 (5).

(d) Placement of CAMU−eligible wastes into or within a CAMU does not constitute land disposal of hazardous wastes.

(e) Consolidation or placement of CAMU−eligible wastes into or within a CAMU does not constitute creation of a unit subject to minimum technology requirements.

(2) (a) The department may designate a regulated unit (as defined in s. NR 664.0090 (1) (b)) as a CAMU, or may incorporate a regulated unit into a CAMU, if all of the following apply:

1. The regulated unit is closed or closing, meaning it has begun the closure process under s. NR 664.0113 or 665.0113.

2. Inclusion of the regulated unit will enhance implementation of effective, protective and reliable remedial actions for the facility.

(b) The subchs. F, G and H requirements and the unit−specific requirements of this chapter or ch. NR 665 that applied to the regulated unit will continue to apply to that portion of the CAMU after incorporation into the CAMU.

(3) The department shall designate a CAMU that will be used for storage or treatment only in accordance with sub. (6). The department shall designate all other CAMUs in accordance with all of the following:

(a) The CAMU shall facilitate the implementation of reliable, effective, protective and cost−effective remedies.

(b) Waste management activities associated with the CAMU may not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes or hazardous constituents.

(c) The CAMU shall include uncontaminated areas of the facility, only if including the areas for the purpose of managing CAMU−eligible waste is more protective than management of the wastes at contaminated areas of the facility.

(d) Areas within the CAMU, where wastes remain in place after closure of the CAMU, shall be managed and contained so as to minimize future releases, to the extent practicable.

(e) The CAMU shall expedite the timing of remedial activity implementation, when appropriate and practicable.

(f) The CAMU shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long−term effectiveness of remedial actions by reducing the toxicity, mobility or volume of wastes that will remain in place after closure of the CAMU.

(g) The CAMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the CAMU.

(4) The owner or operator shall provide sufficient information to enable the department to designate a CAMU in accordance with the criteria in this section. This shall include, unless not reasonably available, information on all of the following:

(a) The origin of the waste and how it was subsequently managed (including a description of the timing and circumstances surrounding the disposal or release).

(b) Whether the waste was listed or identified as hazardous at the time of disposal or release.

(c) Whether the disposal or release of the waste occurred before or after the land disposal requirements of ch. NR 668 were in effect for the waste listing or characteristic.

(5) The department shall specify, in the license or order, requirements for CAMUs to include all of the following:

(a) *Areal configuration requirements.* The areal configuration of the CAMU.

(b) *Design, operation, treatment and closure requirements.* Except as provided in sub. (7), requirements for CAMU−eligible waste management to include the specification of applicable design, operation, treatment and closure requirements.

(c) *Minimum design requirements.* Except as provided in sub. (6), CAMUs into which wastes are placed shall be designed in accordance with all of the following requirements:

1. Unless the department approves alternate requirements under subd. 2., CAMUs that consist of new, replacement or laterally expanded units shall include a composite liner and a leachate collection system that is designed and constructed to maintain less than a 30−cm depth of leachate over the liner. In this section, "composite liner" means a system consisting of 2 components; the upper component shall consist of a minimum 30−mil flexible membrane liner (FML), and the lower component shall consist of at least a 2−foot layer of compacted soil with a hydraulic conductivity of no more than $1x10^{-7}$ cm/sec. FML components consisting of high density polyethylene (HDPE) shall be at least 60 mil thick. The FML component shall be installed in direct and uniform contact with the compacted soil component.

2. The department may approve alternate requirements if any of the following apply:

a. The department finds that alternate design and operating practices, together with location characteristics, will prevent the

migration of any hazardous constituents into the groundwater or surface water at least as effectively as the liner and leachate collection systems in subd. 1.

b. The CAMU is to be established in an area with existing significant levels of contamination, and the department finds that an alternative design, including a design that does not include a liner, would prevent migration from the unit that would exceed long−term remedial goals.

(d) *Minimum treatment requirements.* Unless the wastes will be placed in a CAMU for storage or treatment only in accordance with sub. (6), CAMU−eligible wastes that, absent this section, would be subject to the treatment requirements of ch. NR 668, and that the department determines contain principal hazardous constituents shall be treated to the standards specified in subd. 3.

1. Principal hazardous constituents are those constituents that the department determines pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site.

a. In general, the department will designate as principal hazardous constituents all of the following:

1) Carcinogens that pose a potential direct risk from ingestion or inhalation at the site at or above 10^{-3}.

2) Non−carcinogens that pose a potential direct risk from ingestion or inhalation at the site an order of magnitude or greater over their reference dose.

b. The department will also designate constituents as principal hazardous constituents, where appropriate, when risks to human health and the environment posed by the potential migration of constituents in wastes to groundwater are substantially higher than cleanup levels or goals at the site; when making such a designation, the department may consider factors such as constituent concentrations, and fate and transport characteristics under site conditions.

c. The department may also designate other constituents as principal hazardous constituents that the department determines pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site.

2. In determining which constituents are "principal hazardous constituents", the department shall consider all constituents which, absent this section, would be subject to the treatment requirements in ch. NR 668.

3. Waste that the department determines contains principal hazardous constituents shall meet treatment standards determined in accordance with subd. 4. or 5.

4. The following treatment standards apply to wastes placed in CAMUs:

a. For non−metals, treatment shall achieve 90% reduction in total principal hazardous constituent concentrations, except as provided by subd. 4. c.

b. For metals, treatment shall achieve 90% reduction in principal hazardous constituent concentrations as measured in leachate from the treated waste or media (tested according to the TCLP) or 90% reduction in total constituent concentrations (when a metal removal treatment technology is used), except as provided by subd. 4. c.

c. When treatment of any principal hazardous constituent to a 90% reduction standard would result in a concentration less than 10 times the universal treatment standard for that constituent, treatment to achieve constituent concentrations less than 10 times the universal treatment standard is not required. Universal treatment standards are identified in s. NR 668.48, Table UTS.

d. For waste exhibiting the hazardous characteristic of ignitability, corrosivity or reactivity, the waste shall also be treated to eliminate these characteristics.

e. For debris, the debris shall be treated in accordance with s. NR 668.45, or by methods or to levels established under subd. 4. a. to d. or 5., whichever the department determines is appropriate.

f. For metal bearing wastes for which metals removal treatment is not used, the department may specify a leaching test other than the TCLP (method 1311 of EPA SW−846, incorporated by reference in s. NR 660.11) to measure treatment effectiveness, provided the department determines that an alternative leach testing protocol is appropriate for use, and that the alternative more accurately reflects conditions at the site that affect leaching.

5. The department may adjust the treatment level or method in subd. 4. to a higher or lower level, based on one or more of the following factors, as appropriate. The adjusted level or method shall be protective of human health and the environment:

a. The technical impracticability of treatment to the levels or by the methods in subd. 4.

b. The levels or methods in subd. 4. would result in concentrations of principal hazardous constituents (PHCs) that are significantly above or below cleanup standards applicable to the site (established either site−specifically, or promulgated under state or federal law).

c. The views of the affected local community on the treatment levels or methods in subd. 4. as applied at the site, and, for treatment levels, the treatment methods necessary to achieve these levels.

d. The short−term risks presented by the on−site treatment method necessary to achieve the levels or treatment methods in subd. 4.

e. The long−term protection offered by the engineering design of the CAMU and related engineering controls where any of the following apply:

1) The treatment standards in subd. 4. are substantially met and the principal hazardous constituents in the waste or residuals are of very low mobility.

2) Cost−effective treatment has been used and the CAMU meets the liner and leachate collection requirements for new land disposal units at s. NR 664.0301 (3) and (4).

3) After review of appropriate treatment technologies, the department determines that cost−effective treatment is not reasonably available, and the CAMU meets the liner and leachate collection requirements for new land disposal units at s. NR 664.0301 (3) and (4).

4) Cost−effective treatment has been used and the principal hazardous constituents in the treated wastes are of very low mobility.

5) After review of appropriate treatment technologies, the department determines that cost−effective treatment is not reasonably available, the principal hazardous constituents in the wastes are of very low mobility and either the CAMU meets or exceeds the liner standards for new, replacement or laterally expanded CAMUs in par. (c) 1. and 2. or the CAMU provides substantially equivalent or greater protection.

6. The treatment required by the treatment standards shall be completed prior to, or within a reasonable time after, placement in the CAMU.

7. For the purpose of determining whether wastes placed in CAMUs have met site−specific treatment standards, the department may, as appropriate, specify a subset of the principal hazardous constituents in the waste as analytical surrogates for determining whether treatment standards have been met for other principal hazardous constituents. This specification will be based on the degree of difficulty of treatment and analysis of constituents with similar treatment properties.

(e) *Groundwater monitoring and corrective action requirements.* Except as provided in sub. (6), requirements for ground-

water monitoring and corrective action that are sufficient to do all of the following:

1. Continue to detect and to characterize the nature, extent, concentration, direction and movement of existing releases of hazardous constituents in groundwater from sources located within the CAMU.

2. Detect and subsequently characterize releases of hazardous constituents to groundwater that may occur from areas of the CAMU in which wastes will remain in place after closure of the CAMU.

3. Require notification to the department and corrective action as necessary to protect human health and the environment for releases to groundwater from the CAMU.

(f) *Closure and long−term care requirements.* Except as provided in sub. (6), all of the following closure and long−term care requirements:

1. Closure of corrective action management units shall do all of the following:

a. Minimize the need for further maintenance.

b. Control, minimize or eliminate, to the extent necessary to protect human health and the environment, for areas where wastes remain in place, post−closure escape of hazardous wastes, hazardous constituents, leachate, contaminated runoff or hazardous waste decomposition products to the ground, surface waters or the atmosphere.

2. Requirements for closure of CAMUs shall include the following, as appropriate and as deemed necessary by the department for a given CAMU:

a. Requirements for excavation, removal, treatment or containment of wastes.

b. Requirements for removal and decontamination of equipment, devices and structures used in CAMU−eligible waste management activities within the CAMU.

3. In establishing specific closure requirements for CAMUs under this subsection, the department shall consider all of the following factors:

a. CAMU characteristics.

b. Volume of wastes which remain in place after closure.

c. Potential for releases from the CAMU.

d. Physical and chemical characteristics of the waste.

e. Hydrogeological and other relevant environmental conditions at the facility which may influence the migration of any potential or actual releases.

f. Potential for exposure of humans and environmental receptors if releases were to occur from the CAMU.

4. Cap requirements:

a. At final closure of the CAMU, for areas in which wastes will remain after closure of the CAMU, with constituent concentrations at or above remedial levels or goals applicable to the site, the owner or operator shall cover the CAMU with a final cover designed and constructed to meet all of the following performance criteria, except as provided in subd. 4. b.:

1) Provide long−term minimization of migration of liquids through the closed unit.

2) Function with minimum maintenance.

3) Promote drainage and minimize erosion or abrasion of the cover.

4) Accommodate settling and subsidence so that the cover's integrity is maintained.

5) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

b. The department may determine that modifications to the cap requirements of subd. 4. a. are needed to facilitate treatment or the performance of the CAMU (e.g., to promote biodegradation).

5. Long−term care requirements as necessary to protect human health and the environment, to include, for areas where wastes will remain in place, monitoring and maintenance activities and the frequency with which the activities shall be performed to ensure the integrity of any cap, final cover or other containment system.

(6) In this section, "CAMUs that are used for storage or treatment only" means CAMUs in which wastes will not remain after closure. Those CAMUs shall be designated in accordance with all of the requirements of this section, except as follows.

(a) CAMUs that are used for storage or treatment only and that operate according to the time limits established in the staging pile rules at s. NR 664.0554 (4) (a) 3., (8) and (9) are subject to the requirements for staging piles at s. NR 664.0554 (4) (a) 1. and 2. and (b), (5), (6), (10) and (11) in lieu of the performance standards and requirements for CAMUs in subs. (3) and (5) (c) to (f).

(b) CAMUs that are used for storage or treatment only and that do not operate according to the time limits established in the staging pile rules at s. NR 664.0554 (4) (a) 3., (8) and (9):

1. Shall operate in accordance with a time limit, established by the department, that is no longer than necessary to achieve a timely remedy selected for the waste.

2. Are subject to the requirements for staging piles at s. NR 664.0554 (4) (a) 1. and 2. and (b), (5), (6), (10) and (11) in lieu of the performance standards and requirements for CAMUs in subs. (3) and (5) (d) and (f).

(7) CAMUs into which wastes are placed where all wastes have constituent levels at or below remedial levels or goals applicable to the site do not have to comply with the requirements for liners at sub. (5) (c) 1., caps at sub. (5) (f) 4., groundwater monitoring requirements at sub. (5) (e) or, for treatment or storage−only CAMUs, the design standards at sub. (6).

(8) The department shall provide public notice and a reasonable opportunity for public comment before designating a CAMU. The notice shall include the rationale for any proposed adjustments under sub. (5) (d) 5. to the treatment standards in sub. (5) (d) 4.

(9) Notwithstanding any other provision of this section, the department may impose additional requirements as necessary to protect human health and the environment.

(10) Incorporation of a CAMU into an existing license shall be approved by the department according to the procedures for department−initiated license modifications under s. NR 670.041, or according to the license modification procedures of s. NR 670.042.

(11) The designation of a CAMU does not change the department's existing authority to address clean−up levels, media−specific points of compliance to be applied to remediation at a facility or other remedy selection decisions.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0553 Temporary units (TUs). (1) For temporary tanks and container storage areas used to treat or store hazardous remediation wastes during remedial activities required under s. NR 664.0101 or ss. 291.37 and 291.97 (1), Stats., or at a licensed facility that is not subject to s. NR 664.0101, the department may designate a unit at the facility as a temporary unit. A temporary unit shall be located within the contiguous property under the control of the owner or operator where the wastes to be managed in the temporary unit originated. For temporary units, the department may replace the design, operating or closure standard applicable to these units under this chapter or ch. NR 665 with alternative requirements which protect human health and the environment.

(2) Any temporary unit to which alternative requirements are applied in accordance with sub. (1) shall be all of the following:

(a) Located within the facility boundary.

(b) Used only for treatment or storage of remediation wastes.

(3) In establishing standards to be applied to a temporary unit, the department shall consider all of the following factors:

(a) Length of time the unit will be in operation.

(b) Type of unit.

(c) Volumes of wastes to be managed.

(d) Physical and chemical characteristics of the wastes to be managed in the unit.

(e) Potential for releases from the unit.

(f) Hydrogeological and other relevant environmental conditions at the facility which may influence the migration of any potential releases.

(g) Potential for exposure of humans and environmental receptors if releases were to occur from the unit.

(4) The department shall specify in the license or order the length of time a temporary unit will be allowed to operate, to be no longer than a period of one year. The department shall also specify the design, operating and closure requirements for the unit.

(5) The department may extend the operational period of a temporary unit once for no longer than a period of one year beyond that originally specified in the license or order, if the department determines that all of the following apply:

(a) Continued operation of the unit will not pose a threat to human health and the environment.

(b) Continued operation of the unit is necessary to ensure timely and efficient implementation of remedial actions at the facility.

(6) Incorporation of a temporary unit or a time extension for a temporary unit into an existing license shall be any of the following:

(a) Approved in accordance with the procedures for department−initiated license modifications under s. NR 670.041.

(b) Requested by the owner or operator as a class II modification according to the procedures under s. NR 670.042.

(7) The department shall document the rationale for designating a temporary unit and for granting time extensions for temporary units and shall make the documentation available to the public.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0554 Staging piles. This section is written in a special format to make it easier to understand the rule requirements. Like other department rules, this section establishes enforceable legal requirements. In this section, "I" and "you" refer to the owner or operator.

(1) WHAT IS A STAGING PILE? A staging pile is an accumulation of solid, non−flowing remediation waste (as defined in s. NR 660.10) that is not a containment building and is used only during remedial operations for temporary storage at a facility. A staging pile shall be located within the contiguous property under the control of the owner or operator where the wastes to be managed in the staging pile originated. The department shall designate staging piles according to the requirements in this section. For the purposes of this section, "storage" includes mixing, sizing, blending or other similar physical operations as long as they are intended to prepare the wastes for subsequent management or treatment.

(2) WHEN MAY I USE A STAGING PILE? You may use a staging pile to store hazardous remediation waste (or remediation waste otherwise subject to land disposal restrictions) only if you follow the standards and design criteria the department has designated for that staging pile. The department shall designate the staging pile in a license or, at an interim license facility, in a license, closure plan or order (consistent with s. NR 670.072 (1) (e) and (2) (e)). The department shall establish conditions in the license, closure plan or order that comply with subs. (4) to (11).

(3) WHAT INFORMATION MUST I PROVIDE TO GET A STAGING PILE DESIGNATED? When seeking a staging pile designation, you shall provide all of the following:

(a) Sufficient and accurate information to enable the department to impose standards and design criteria for your staging pile according to subs. (4) to (11).

(b) Certification by an independent, qualified, registered professional engineer for technical data, such as design drawings and specifications, and engineering studies, unless the department determines, based on information that you provide, that this certification is not necessary to ensure that a staging pile will protect human health and the environment.

(c) Any additional information the department determines is necessary to protect human health and the environment.

(4) WHAT PERFORMANCE CRITERIA MUST A STAGING PILE SATISFY? The department shall establish the standards and design criteria for the staging pile in the license, closure plan or order.

(a) The standards and design criteria shall comply with all of the following:

1. The staging pile shall facilitate a reliable, effective and protective remedy.

2. The staging pile shall be designed so as to prevent or minimize releases of hazardous wastes and hazardous constituents into the environment, and minimize or adequately control cross−media transfer, as necessary to protect human health and the environment (for example, through the use of liners, covers, run−off or run−on controls, as appropriate).

3. The staging pile may not operate for more than 2 years, except when the department grants an operating term extension under sub. (9). You shall measure the 2−year limit, or other operating term specified by the department in the license, closure plan or order, from the first time you place remediation waste into a staging pile. You shall maintain a record of the date when you first placed remediation waste into the staging pile for the life of the license, closure plan, or order, or for 3 years, whichever is longer.

(b) In setting the standards and design criteria, the department shall consider all of the following factors:

1. Length of time the pile will be in operation.

2. Volumes of wastes you intend to store in the pile.

3. Physical and chemical characteristics of the wastes to be stored in the unit.

4. Potential for releases from the unit.

5. Hydrogeological and other relevant environmental conditions at the facility that may influence the migration of any potential releases.

6. Potential for human and environmental exposure to potential releases from the unit.

(5) MAY A STAGING PILE RECEIVE IGNITABLE OR REACTIVE REMEDIATION WASTE? You may not place ignitable or reactive remediation waste in a staging pile unless par. (a) or (b) applies:

(a) You have treated, rendered or mixed the remediation waste before you placed it in the staging pile so that both of the following apply:

1. The remediation waste no longer meets the definition of ignitable or reactive under s. NR 661.21 or 661.23.

2. You have complied with s. NR 664.0017 (2).

(b) You manage the remediation waste to protect it from exposure to any material or condition that may cause it to ignite or react.

(6) HOW DO I HANDLE INCOMPATIBLE REMEDIATION WASTES IN A STAGING PILE? The term "incompatible waste" is defined in s. NR 660.10. You shall comply with all of the following requirements for incompatible wastes in staging piles:

(a) You may not place incompatible remediation wastes in the same staging pile unless you have complied with s. NR 664.0017 (2).

(b) If remediation waste in a staging pile is incompatible with any waste or material stored nearby in containers, other piles, open tanks or land disposal units (for example, surface impoundments), you shall separate the incompatible materials, or protect them from one another by using a dike, berm, wall or other device.

(c) You may not pile remediation waste on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to comply with s. NR 664.0017 (2).

(7) ARE STAGING PILES SUBJECT TO THE LAND DISPOSAL RESTRICTIONS IN CH. NR 668 AND THE MINIMUM TECHNOLOGICAL REQUIREMENTS? No. Placing hazardous remediation wastes into a staging pile does not constitute land disposal of hazardous wastes or create a unit that is subject to the minimum technological requirements in s. NR 664.0221, 664.0251, 664.0301, 665.0221, 665.0254 or 665.0301.

Note: The original source for the minimum technological requirements is 42 USC 6924(o).

(8) HOW LONG MAY I OPERATE A STAGING PILE? The department may allow a staging pile to operate for up to 2 years after hazardous remediation waste is first placed into the pile. You shall use a staging pile no longer than the length of time designated by the department in the license, closure plan or order (the "operating term"), except as provided in sub. (9).

(9) MAY I RECEIVE AN OPERATING EXTENSION FOR A STAGING PILE? (a) The department may grant one operating term extension of up to 180 days beyond the operating term limit contained in the license, closure plan or order (see sub. (12) for modification procedures). To justify to the department the need for an extension, you shall provide sufficient and accurate information to enable the department to determine that continued operation of the staging pile will do all of the following:

1. Will not pose a threat to human health and the environment.

2. Is necessary to ensure timely and efficient implementation of remedial actions at the facility.

(b) The department may, as a condition of the extension, specify further standards and design criteria in the license, closure plan or order, as necessary, to ensure protection of human health and the environment.

(10) WHAT IS THE CLOSURE REQUIREMENT FOR A STAGING PILE LOCATED IN A PREVIOUSLY CONTAMINATED AREA? (a) Within 180 days after the operating term of the staging pile expires, you shall close a staging pile located in a previously contaminated area of the site by removing or decontaminating all of the following:

1. Remediation waste.

2. Contaminated containment system components.

3. Structures and equipment contaminated with waste and leachate.

(b) You shall also decontaminate contaminated subsoils in a manner and according to a schedule that the department determines will protect human health and the environment.

(c) The department shall include the requirements of pars. (a) and (b) in the license, closure plan or order in which the staging pile is designated.

(11) WHAT IS THE CLOSURE REQUIREMENT FOR A STAGING PILE LOCATED IN AN UNCONTAMINATED AREA? (a) Within 180 days after the operating term of the staging pile expires, you shall close a staging pile located in an uncontaminated area of the site according to ss. NR 664.0258 (1) and 664.0111, or according to ss. NR 665.0258 (1) and 665.0111.

(b) The department shall include the requirement of par. (a) in the license, closure plan or order in which the staging pile is designated.

(12) HOW MAY MY EXISTING LICENSE (FOR EXAMPLE, REMEDIATION VARIANCE), CLOSURE PLAN OR ORDER BE MODIFIED TO ALLOW ME TO USE A STAGING PILE? (a) To modify a license, other than a remediation variance, to incorporate a staging pile or staging pile operating term extension, either:

1. The department shall approve the modification under the procedures for department−initiated license modifications in s. NR 670.041.

2. You shall request a class 2 modification under s. NR 670.042.

(b) To modify a remediation variance to incorporate a staging pile or staging pile operating term extension, you shall resubmit the remediation variance application required under s. NR 670.079.

(c) To modify a closure plan to incorporate a staging pile or staging pile operating term extension, you shall follow the applicable requirements under s. NR 664.0112 (3) or 665.0112 (3).

(d) To modify an order to incorporate a staging pile or staging pile operating term extension, you shall follow the terms of the order and the applicable provisions of s. NR 670.072 (1) (e) or (2) (e).

(13) IS INFORMATION ABOUT THE STAGING PILE AVAILABLE TO THE PUBLIC? The department shall document the rationale for designating a staging pile or staging pile operating term extension and make this documentation available to the public.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0555 Disposal of CAMU−eligible wastes in licensed or permitted hazardous waste landfills. (1) The department may approve placement of CAMU−eligible wastes in hazardous waste landfills not located at the site from which the waste originated, without the wastes meeting the requirements of ch. NR 668, if all of the following conditions are met:

(a) The waste meets the definition of CAMU−eligible waste in s. NR 664.0552 (1) (a) and (b).

(b) The department identifies principal hazardous constituents in the waste, in accordance with s. NR 664.0552 (5) (d) 1. and 2., and requires that the principal hazardous constituents are treated to any of the following standards specified for CAMU−eligible wastes:

1. The treatment standards under s. NR 664.0552 (5) (d) 4.

2. Treatment standards adjusted in accordance with s. NR 664.0552 (5) (d) 5. a., c., d. or e.1).

3. Treatment standards adjusted in accordance with s. NR 664.0552 (5) (d) 5. e.2), where treatment has been used and that treatment significantly reduces the toxicity or mobility of the principal hazardous constituents in the waste, minimizing the short−term and long−term threat posed by the waste, including the threat at the remediation site.

(c) The landfill receiving the CAMU−eligible waste shall have a hazardous waste license or permit, meet the requirements for new landfills in subch. N, and be authorized to accept CAMU−eligible wastes; for the purposes of this requirement, "license or permit" does not include an interim license or permit.

(2) The person seeking approval shall provide sufficient information to enable the department to approve placement of CAMU−eligible waste in accordance with sub. (1). Information required by s. NR 664.0552 (4) (a) to (c) for CAMU applications shall be provided, unless not reasonably available.

(3) The department shall provide public notice and a reasonable opportunity for public comment before approving CAMU−eligible waste for placement in an off−site licensed or permitted hazardous waste landfill, consistent with the requirements for CAMU approval at s. NR 664.0552 (8). The approval shall be specific to a single remediation.

(4) Applicable hazardous waste management requirements in this chapter, including recordkeeping requirements to demon-

strate compliance with treatment standards approved under this section, for CAMU−eligible waste shall be incorporated into the receiving facility license or permit through license or permit issuance or a license or permit modification, providing notice and an opportunity for comment and a hearing. Notwithstanding s. NR 670.004 (1), a landfill may not receive hazardous CAMU−eligible waste under this section unless its license or permit specifically authorizes receipt of the waste.

(5) For each remediation, CAMU−eligible waste may not be placed in an off−site landfill authorized to receive CAMU−eligible waste in accordance with sub. (4) until all of the following additional conditions have been met:

(a) The landfill owner or operator notifies the department and persons on the facility mailing list, maintained in accordance with s. NR 670.410 (3) (a) 9., of the owner or operator's intent to receive CAMU−eligible waste in accordance with this section; the notice shall identify the source of the remediation waste, the principal hazardous constituents in the waste and treatment requirements.

(b) Persons on the facility mailing list may provide comments, including objections to the receipt of the CAMU−eligible waste, to the department within 15 days of notification.

(c) The department may object to the placement of the CAMU−eligible waste in the landfill within 30 days of notification; the department may extend the review period an additional 30 days because of public concerns or insufficient information.

(d) CAMU−eligible wastes may not be placed in the landfill until the department has notified the facility owner or operator that the department does not object to its placement.

(e) If the department objects to the placement or does not notify the facility owner or operator that the department has chosen not to object, the facility may not receive the waste, notwithstanding s. NR 670.004 (1), until the objection has been resolved, or the owner or operator obtains a license or permit modification in accordance with the procedures of s. NR 670.042 specifically authorizing receipt of the waste.

(f) As part of the license or permit issuance or license or permit modification process of sub. (4), the department may modify, reduce or eliminate the notification requirements of this subsection as they apply to specific categories of CAMU−eligible waste, based on minimal risk.

(6) Generators of CAMU−eligible wastes sent off−site to a hazardous waste landfill under this section shall comply with the requirements of s. NR 668.07 (1) (d); off−site facilities treating CAMU−eligible wastes to comply with this section shall comply with the requirements of s. NR 668.07 (2) (d) or 40 CFR 268.7(b)(4), except that the certification shall be with respect to the treatment requirements of sub. (1) (b).

(7) For the purposes of this section only, the "design of the CAMU" in s. NR 664.0552 (5) (d) 5. e. means design of the licensed or permitted hazardous waste landfill.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter W — Drip Pads

NR 664.0570 Applicability. (1) The requirements of this subchapter apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation or surface water run−off to an associated collection system. Existing drip pads are those constructed before June 1, 1995 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to June 1, 1995. All other drip pads are new drip pads.

(2) The owner or operator of any drip pad that is inside or under a structure that provides protection from precipitation so that neither run−off nor run−on is generated is not regulated under s. NR 664.0573 (5) or (6), as appropriate.

(3) The requirements of this subchapter are not applicable to the management of infrequent and incidental drippage in storage yards provided that the owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of the infrequent and incidental drippage. At a minimum, the contingency plan shall describe how the owner or operator will do all of the following:

(a) Clean up the drippage.

(b) Document the cleanup of the drippage.

(c) Retain documents regarding cleanup for 3 years.

(d) Manage the contaminated media in a manner consistent with state rules.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0571 Assessment of existing drip pad integrity. (1) For each existing drip pad as defined in s. NR 664.0570, the owner or operator shall evaluate the drip pad and determine that it meets all of the requirements of this subchapter, except the requirements for liners and leak detection systems of s. NR 664.0573 (2). No later than June 1, 1995, the owner or operator shall obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by an independent, qualified registered professional engineer that attests to the results of the evaluation. The assessment shall be reviewed, updated and re−certified annually until all upgrades, repairs or modifications necessary to achieve compliance with all of the standards of s. NR 664.0573 are complete. The evaluation shall document the extent to which the drip pad meets each of the design and operating standards of s. NR 664.0573, except the standards for liners and leak detection systems, specified in s. NR 664.0573 (2).

(2) The owner or operator shall develop a written plan for upgrading, repairing and modifying the drip pad to meet the requirements of s. NR 664.0573 (2), and submit the plan to the department no later than 2 years before the date that all repairs, upgrades and modifications are complete. This written plan shall describe all changes to be made to the drip pad in sufficient detail to document compliance with all the requirements of s. NR 664.0573. The plan shall be reviewed and certified by an independent qualified registered professional engineer.

(3) Upon completion of all upgrades, repairs and modifications, the owner or operator shall submit to the department, the as−built drawings for the drip pad together with a certification by an independent qualified registered professional engineer attesting that the drip pad conforms to the drawings.

(4) If the drip pad is found to be leaking or unfit for use, the owner or operator shall comply with the provisions of s. NR 664.0573 (13) or close the drip pad in accordance with s. NR 664.0575.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0572 Design and installation of new drip pads. Owners and operators of new drip pads shall ensure that the pads are designed, installed and operated in accordance with one of the following:

(1) All of the requirements of s. NR 664.0573 (except s. NR 664.0573 (1) (d)), s. NR 664.0574 and s. NR 664.0575.

(2) All of the requirements of ss. NR 664.0573 (except s. NR 664.0573 (2)), s. NR 664.0574 and s. NR 664.0575.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0573 Design and operating requirements. (1) Drip pads shall comply with all of the following:

(a) Be constructed of non−earthen materials, excluding wood and non−structurally supported asphalt.

(b) Be sloped to free−drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system.

(c) Have a curb or berm around the perimeter.

(d) 1. Have a hydraulic conductivity of less than or equal to 1×10^{-7} centimeters per second, e.g., existing concrete drip pads shall be sealed, coated or covered with a surface material with a hydraulic conductivity of less than or equal to 1×10^{-7} centimeters per second such that the entire surface where drippage occurs or may run across is capable of containing the drippage and mixtures of drippage and precipitation, materials or other wastes while being routed to an associated collection system. This surface material shall be maintained free of cracks and gaps that could adversely affect its hydraulic conductivity, and the material shall be chemically compatible with the preservatives that contact the drip pad. The requirements of this provision apply only to existing drip pads and those drip pads for which the owner or operator elects to comply with s. NR 664.0572 (2) instead of s. NR 664.0572 (1).

2. The owner or operator shall obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by an independent, qualified registered professional engineer that attests to the results of the evaluation. The assessment shall be reviewed, updated and recertified annually. The evaluation shall document the extent to which the drip pad meets the design and operating standards of this section, except for sub. (2).

(e) Be of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions and the stress of daily operations, including variable and moving loads such as vehicle traffic or movement of wood.

Note: The department will generally consider applicable standards established by professional organizations generally recognized by the industry such as the American Concrete Institute (ACI) or the American Society of Testing and Materials (ASTM) in judging the structural integrity requirement of par. (e).

(2) If an owner or operator elects to comply with s. NR 664.0572 (1) instead of s. NR 664.0572 (2), the drip pad shall have all of the following:

(a) A synthetic liner installed below the drip pad that is designed, constructed and installed to prevent leakage from the drip pad into the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the drip pad. The liner shall be constructed of materials that will prevent waste from being absorbed into the liner and to prevent releases into the adjacent subsurface soil or groundwater or surface water during the active life of the facility. The liner shall comply with all of the following:

1. Be constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or drip pad leakage to which they are exposed, climatic conditions, the stress of installation and the stress of daily operation (including stresses from vehicular traffic on the drip pad).

2. Be placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift.

3. Be installed to cover all surrounding earth that could come in contact with the waste or leakage.

(b) A leakage detection system immediately above the liner that is designed, constructed, maintained and operated to detect leakage from the drip pad. The leakage detection system shall comply with all of the following:

1. Be constructed of materials that are all of the following:

a. Chemically resistant to the waste managed in the drip pad and the leakage that might be generated.

b. Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying materials and by any equipment used at the drip pad.

2. Be designed and operated to function without clogging through the scheduled closure of the drip pad.

3. Be designed so that it will detect the failure of the drip pad or the presence of a release of hazardous waste or accumulated liquid at the earliest practicable time.

(c) A leakage collection system immediately above the liner that is designed, constructed, maintained and operated to collect leakage from the drip pad such that it can be removed from below the drip pad. The date, time and quantity of any leakage collected in this system and removed shall be documented in the operating log.

(3) Drip pads shall be maintained such that they remain free of cracks, gaps, corrosion or other deterioration that could cause hazardous waste to be released from the drip pad.

Note: See sub. (13) for remedial action required if deterioration or leakage is detected.

(4) The drip pad and associated collection system shall be designed and operated to convey, drain and collect liquid resulting from drippage or precipitation in order to prevent run−off.

(5) Unless protected by a structure, as described in s. NR 664.0570 (2), the owner or operator shall design, construct, operate and maintain a run−on control system capable of preventing flow onto the drip pad during peak discharge from at least a 24−hour, 25−year storm, unless the system has sufficient excess capacity to contain any run−off that might enter the system.

(6) Unless protected by a structure or cover as described in s. NR 664.0570 (2), the owner or operator shall design, construct, operate and maintain a run−off management system to collect and control at least the water volume resulting from a 24−hour, 25−year storm.

(7) The drip pad shall be evaluated to determine that it meets the requirements of subs. (1) to (6), and the owner or operator shall obtain a statement from an independent, qualified registered professional engineer certifying that the drip pad design meets the requirements of this section.

(8) Drippage and accumulated precipitation shall be removed from the associated collection system as necessary to prevent overflow onto the drip pad.

(9) The drip pad surface shall be cleaned thoroughly in a manner and frequency such that accumulated residues of hazardous waste or other materials are removed, with residues being properly managed as hazardous waste, so as to allow weekly inspections of the entire drip pad surface without interference or hindrance from accumulated residues of hazardous waste or other materials on the drip pad. The owner or operator shall document the date and time of each cleaning and the cleaning procedure used in the facility's operating log. The owner or operator shall determine if the residues are hazardous per s. NR 662.011 and, if so, shall manage them under chs. NR 661 to 668, 670 and s. 291.05 (1), Stats.

(10) Drip pads shall be operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.

(11) After being removed from the treatment vessel, treated wood from pressure and non−pressure processes shall be held on the drip pad until drippage has ceased. The owner or operator shall maintain records sufficient to document that all treated wood is held on the pad following treatment in accordance with this requirement.

(12) Collection and holding units associated with run−on and run−off control systems shall be emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.

(13) Throughout the active life of the drip pad and as specified in the license, if the owner or operator detects a condition that may have caused or has caused a release of hazardous waste, the condition shall be repaired within a reasonably prompt period of time following discovery, in accordance with all of the following procedures:

(a) Upon detection of a condition that may have caused or has caused a release of hazardous waste (e.g., upon detection of leakage in the leak detection system), the owner or operator shall do all of the following:

1. Enter a record of the discovery in the facility operating log.

2. Immediately remove the portion of the drip pad affected by the condition from service.

3. Determine what steps must be taken to repair the drip pad and clean up any leakage from below the drip pad, and establish a schedule for accomplishing the repairs.

4. Immediately after discovery of the condition, notify the department of the condition and, within 10 working days, provide written notice to the department with a description of the steps that will be taken to repair the drip pad and clean up any leakage, and the schedule for accomplishing this work.

(b) The department will review the information submitted, make a determination regarding whether the pad must be removed from service completely or partially until repairs and clean up are complete and notify the owner or operator of the determination and the underlying rationale in writing.

(c) Upon completing all repairs and clean up, the owner or operator shall notify the department in writing and provide a certification signed by an independent, qualified registered professional engineer, that the repairs and clean up have been completed according to the written plan submitted in accordance with par. (a) 4.

(14) Should a license be necessary, the department will specify in the license all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

(15) The owner or operator shall maintain, as part of the facility operating log, documentation of past operating and waste handling practices. This shall include identification of preservative formulations used in the past, a description of drippage management practices and a description of treated wood storage and handling practices.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0574 Inspections. (1) During construction or installation, liners and cover systems (e.g., membranes, sheets or coatings) shall be inspected for uniformity, damage and imperfections (e.g., holes, cracks, thin spots or foreign materials). Immediately after construction or installation, liners shall be inspected and certified as meeting the requirements of s. NR 664.0573 by an independent qualified, registered professional engineer. This certification shall be maintained at the facility as part of the facility operating record. After installation, liners and covers shall be inspected to ensure tight seams and joints and the absence of tears, punctures or blisters.

(2) While a drip pad is in operation, it shall be inspected weekly and after storms to detect evidence of any of the following:

(a) Deterioration, malfunctions or improper operation of run−on and run−off control systems.

(b) The presence of leakage in and proper functioning of the leak detection system.

(c) Deterioration or cracking of the drip pad surface.

Note: See s. NR 664.0573(13) for remedial action required if deterioration or leakage is detected.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0575 Closure. (1) At closure, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components (such as pads and liners), contaminated subsoils, and structures and equipment contaminated with waste and leakage, and manage them as hazardous waste.

(2) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components subsoils, structures and equipment as required in sub. (1), the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, the owner or operator shall close the facility and perform long−term care in accordance with closure and long−term care requirements that apply to landfills (s. NR 664.0310). For licensed units, the requirement to have a license continues throughout the long−term care period. In addition, for the purpose of closure, long−term care and financial responsibility, such a drip pad is then considered to be landfill, and the owner or operator shall meet all of the requirements for landfills specified in subchs. G and H.

(3) (a) The owner or operator of an existing drip pad, as defined in s. NR 664.0570, that does not comply with the liner requirements of s. NR 664.0573 (2) (a) shall do both of the following:

1. Include in the closure plan for the drip pad under s. NR 664.0112 both a plan for complying with sub. (1) and a contingent plan for complying with sub. (2) in case not all contaminated subsoils can be practicably removed at closure.

2. Prepare a contingent long−term care plan under s. NR 664.0118 for complying with sub. (2) in case not all contaminated subsoils can be practicably removed at closure.

(b) The cost estimates calculated under ss. NR 664.0112 and 664.0144 for closure and long−term care of a drip pad subject to this subsection shall include the cost of complying with the contingent closure plan and the contingent long−term care plan, but are not required to include the cost of expected closure under sub. (1).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter X — Miscellaneous Units

NR 664.0600 Applicability. The requirements in this subchapter apply to owners and operators of facilities that treat, store or dispose of hazardous waste in miscellaneous units, except as s. NR 664.0001 provides otherwise.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0601 Environmental performance standards. A miscellaneous unit shall be located, designed, constructed, operated, maintained and closed in a manner that will ensure protection of human health and the environment. Licenses for miscellaneous units shall contain terms and provisions necessary to protect human health and the environment, including, as appropriate, design and operating requirements, detection and monitoring requirements and requirements for responses to releases of hazardous waste or hazardous constituents from the unit. License terms and provisions shall include those requirements of subchs. I to O and subchs. AA to CC, ch. NR 670, 40 CFR part 63 subpart EEE and ch. NR 815 that are appropriate for the miscellaneous unit being licensed. Protection of human health and the environment includes all of the following:

(1) Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in the groundwater or subsurface environment, considering all of the following:

(a) The volume and physical and chemical characteristics of the waste in the unit, including its potential for migration through soil, liners or other containing structures.

(b) The hydrologic and geologic characteristics of the unit and the surrounding area.

(c) The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater.

(d) The quantity and direction of groundwater flow.

(e) The proximity to and withdrawal rates of current and potential groundwater users.

(f) The patterns of land use in the region.

(g) The potential for deposition or migration of waste constituents into subsurface physical structures, and into the root zone of food−chain crops and other vegetation.

(h) The potential for health risks caused by human exposure to waste constituents.

(i) The potential for damage to domestic animals, wildlife, crops, vegetation and physical structures caused by exposure to waste constituents.

(2) Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in surface water or wetlands, or on the soil surface considering all of the following:

(a) The volume and physical and chemical characteristics of the waste in the unit.

(b) The effectiveness and reliability of containing, confining and collecting systems and structures in preventing migration.

(c) The hydrologic characteristics of the unit and the surrounding area, including the topography of the land around the unit.

(d) The patterns of precipitation in the region.

(e) The quantity, quality and direction of groundwater flow.

(f) The proximity of the unit to surface waters.

(g) The current and potential uses of nearby surface waters and any water quality standards established for those surface waters.

(h) The existing quality of surface waters and surface soils, including other sources of contamination and their cumulative impact on surface waters and surface soils.

(i) The patterns of land use in the region.

(j) The potential for health risks caused by human exposure to waste constituents.

(k) The potential for damage to domestic animals, wildlife, crops, vegetation and physical structures caused by exposure to waste constituents.

(3) Prevention of any release that may have adverse effects on human health or the environment due to migration of waste constituents in the air, considering all of the following:

(a) The volume and physical and chemical characteristics of the waste in the unit, including its potential for the emission and dispersal of gases, aerosols and particulates.

(b) The effectiveness and reliability of systems and structures to reduce or prevent emissions of hazardous constituents to the air.

(c) The operating characteristics of the unit.

(d) The atmospheric, meteorologic and topographic characteristics of the unit and the surrounding area.

(e) The existing quality of the air, including other sources of contamination and their cumulative impact on the air.

(f) The potential for health risks caused by human exposure to waste constituents.

(g) The potential for damage to domestic animals, wildlife, crops, vegetation and physical structures caused by exposure to waste constituents.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0602 Monitoring, analysis, inspection, response, reporting and corrective action. Monitoring, testing, analytical data, inspections, response and reporting procedures and frequencies shall ensure compliance with ss. NR 664.0015, 664.0033, 664.0075, 664.0076, 664.0077, 664.0101 and 664.0601 as well as meet any additional requirements needed to protect human health and the environment as specified in the license.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.0603 Long−term care. A miscellaneous unit that is a disposal unit shall be maintained in a manner that complies with s. NR 664.0601 during the long−term care period. If a treatment or storage unit has contaminated soils or groundwater that cannot be completely removed or decontaminated during closure, the unit shall also meet the requirements of s. NR 664.0601 during long−term care. The long−term care plan under s. NR 664.0118 shall specify the procedures that will be used to satisfy this requirement.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter AA — Air Emission Standards for Process Vents

NR 664.1030 Applicability. (1) This subchapter applies to owners and operators of facilities that treat, store or dispose of hazardous wastes (except as provided in s. NR 664.0001).

(2) Except for s. NR 664.1034 (4) and (5), this subchapter applies to process vents associated with distillation, fractionation, thin−film evaporation, solvent extraction or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10 ppmw, if these operations are conducted in one of the following:

(a) A unit that is subject to the licensing requirements of ch. NR 670.

(b) A unit (including a hazardous waste recycling unit) that is not exempt from licensing under s. NR 662.034 (1) (i.e., a hazardous waste recycling unit that is not a 90−day tank or container) and that is located at a hazardous waste management facility otherwise subject to the licensing requirements of ch. NR 670.

(c) A unit that is exempt from licensing under s. NR 662.034 (1) (i.e., a "90−day" tank or container) and is not a recycling unit under s. NR 661.06.

(3) For the owner and operator of a facility subject to this subchapter and who received an operating license under s. 291.25, Stats., prior to December 6, 1996, the requirements of this subchapter shall be incorporated into the license when the license is reissued according to s. NR 670.415 or reviewed according to s. NR 670.050 (4). Until the date when the owner and operator receives an operating license incorporating the requirements of this subchapter, the owner and operator is subject to the requirements of subch. AA of ch. NR 665.

Note: Sections NR 664.1032 to 664.1036 apply to process vents on hazardous waste recycling units previously exempt under s. NR 661.06(3)(a). Other exemptions under ss. NR 661.04 and 664.0001(7) are not affected by these requirements.

(5) This subchapter does not apply to the process vents at a facility where the facility owner or operator certifies that all of the process vents that would otherwise be subject to this subchapter are equipped with and operating air emission controls according to the process vent requirements in 40 CFR part 60, 61 or 63, and corresponding provisions of ch. NR 440, subch. III of ch. NR 446 and chs. NR 447 to 469. Keep the documentation of compliance under 40 CFR part 60, 61 or 63 and corresponding provisions of ch. NR 440, subch. III of ch. NR 446 and chs. NR 447 to 469 with, or make it readily available with, the facility operating record.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1031 Definitions. As used in this subchapter:

(1) "Air stripping operation" means a desorption operation employed to transfer one or more volatile components from a liquid mixture into a gas (air) either with or without the application of heat to the liquid. Packed towers, spray towers and bubble−cap, sieve or valve−type plate towers are among the process configurations used for contacting the air and a liquid.

(2) "Bottoms receiver" means a container or tank used to receive and collect the heavier bottoms fractions of the distillation feed stream that remain in the liquid phase.

(3) "Closed−vent system" means a system that is not open to the atmosphere and that is composed of piping, connections and, if necessary, flow−inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device.

(4) "Condenser" means a heat−transfer device that reduces a thermodynamic fluid from its vapor phase to its liquid phase.

(5) "Connector" means flanged, screwed, welded or other joined fittings used to connect 2 pipelines or a pipeline and a piece of equipment. For the purposes of reporting and recordkeeping, connector means flanged fittings that are not covered by insulation or other materials that prevent location of the fittings.

(6) "Continuous recorder" means a data−recording device recording an instantaneous data value at least once every 15 minutes.

(7) "Control device" means an enclosed combustion device, vapor recovery system or flare. Any device the primary function of which is the recovery or capture of solvents or other organics for use, reuse or sale (e.g., a primary condenser on a solvent recovery unit) is not a control device.

(8) "Control device shutdown" means the cessation of operation of a control device for any purpose.

(9) "Distillate receiver" means a container or tank used to receive and collect liquid material (condensed) from the overhead condenser of a distillation unit and from which the condensed liquid is pumped to larger storage tanks or other process units.

(10) "Distillation operation" means an operation, either batch or continuous, separating one or more feed streams into 2 or more exit streams, each exit stream having component concentrations different from those in the feed stream. The separation is achieved by the redistribution of the components between the liquid and vapor phase as they approach equilibrium within the distillation unit.

(11) "Double block and bleed system" means 2 block valves connected in series with a bleed valve or line that can vent the line between the 2 block valves.

(12) "Equipment" means each valve, pump, compressor, pressure relief device, sampling connection system, open−ended valve or line or flange or other connector and any control devices or systems required by this subchapter.

(13) "Flame zone" means the portion of the combustion chamber in a boiler occupied by the flame envelope.

(14) "Flow indicator" means a device that indicates whether gas flow is present in a vent stream.

(15) "First attempt at repair" means to take rapid action for the purpose of stopping or reducing leakage of organic material to the atmosphere using best practices.

(16) "Fractionation operation" means a distillation operation or method used to separate a mixture of several volatile components of different boiling points in successive stages, each stage removing from the mixture some proportion of one of the components.

(17) "Hazardous waste management unit shutdown" means a work practice or operational procedure that stops operation of a hazardous waste management unit or part of a hazardous waste management unit. An unscheduled work practice or operational procedure that stops operation of a hazardous waste management unit or part of a hazardous waste management unit for less than 24 hours is not a hazardous waste management unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping operation are not hazardous waste management unit shutdowns.

(18) "Hot well" means a container for collecting condensate as in a steam condenser serving a vacuum−jet or steam−jet ejector.

(19) "In gas or vapor service" means that the piece of equipment contains or contacts a hazardous waste stream that is in the gaseous state at operating conditions.

(20) "In heavy liquid service" means that the piece of equipment is not in gas or vapor service or in light liquid service.

(21) "In light liquid service" means that the piece of equipment contains or contacts a waste stream where the vapor pressure of one or more of the organic components in the stream is greater than 0.3 kilopascals (kPa) at 20°C, the total concentration of the pure organic components having a vapor pressure greater than 0.3 kilopascals (kPa) at 20°C is equal to or greater than 20% by weight and the fluid is a liquid at operating conditions.

(22) "In situ sampling systems" means nonextractive samplers or in−line samplers.

(23) "In vacuum service" means that equipment is operating at an internal pressure that is at least 5 kPa below ambient pressure.

(24) "Malfunction" means any sudden failure of a control device or a hazardous waste management unit or failure of a hazardous waste management unit to operate in a normal or usual manner, so that organic emissions are increased.

(25) "Open−ended valve or line" means any valve, except pressure relief valves, having one side of the valve seat in contact with hazardous waste and one side open to the atmosphere, either directly or through open piping.

(26) "Pressure release" means the emission of materials resulting from the system pressure being greater than the set pressure of the pressure relief device.

(27) "Process heater" means a device that transfers heat liberated by burning fuel to fluids contained in tubes, including all fluids except water that are heated to produce steam.

(28) "Process vent" means any open−ended pipe or stack that is vented to the atmosphere either directly, through a vacuum−producing system or through a tank (e.g., distillate receiver, condenser, bottoms receiver, surge control tank, separator tank or hot well) associated with hazardous waste distillation, fractionation, thin−film evaporation, solvent extraction or air or steam stripping operations.

(29) "Repaired" means that equipment is adjusted, or otherwise altered, to eliminate a leak.

(30) "Sampling connection system" means an assembly of equipment within a process or waste management unit used during periods of representative operation to take samples of the process or waste fluid. Equipment used to take non−routine grab samples is not considered a sampling connection system.

(31) "Sensor" means a device that measures a physical quantity or the change in a physical quantity, such as temperature, pressure, flow rate, pH or liquid level.

(32) "Separator tank" means a device used for separation of 2 immiscible liquids.

(33) "Solvent extraction operation" means an operation or method of separation in which a solid or solution is contacted with a liquid solvent (the 2 being mutually insoluble) to preferentially dissolve and transfer one or more components into the solvent.

(34) "Startup" means the setting in operation of a hazardous waste management unit or control device for any purpose.

(35) "Steam stripping operation" means a distillation operation in which vaporization of the volatile constituents of a liquid mixture takes place by the introduction of steam directly into the charge.

(36) "Surge control tank" means a large−sized pipe or storage reservoir sufficient to contain the surging liquid discharge of the process tank to which it is connected.

(37) "Thin−film evaporation operation" means a distillation operation that employs a heating surface consisting of a large diameter tube that may be either straight or tapered, horizontal or vertical. Liquid is spread on the tube wall by a rotating assembly of blades that maintain a close clearance from the wall or actually ride on the film of liquid on the wall.

(38) "Vapor incinerator" means any enclosed combustion device that is used for destroying organic compounds and does not extract energy in the form of steam or process heat.

(39) "Vented" means discharged through an opening, typically an open−ended pipe or stack, allowing the passage of a stream of liquids, gases or fumes into the atmosphere. The passage of liquids, gases or fumes is caused by mechanical means such as compressors or vacuum−producing systems or by process−related

means such as evaporation produced by heating and not caused by tank loading and unloading (working losses) or by natural means such as diurnal temperature changes.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1032 Standards: process vents. (1) The owner or operator of a facility with process vents associated with distillation, fractionation, thin−film evaporation, solvent extraction or air or steam stripping operations managing hazardous wastes with organic concentrations of at least 10 ppmw shall do any of the following:

(a) Reduce total organic emissions from all affected process vents at the facility below 1.4 kg/h (3 lb/h) and 2.8 Mg/yr (3.1 tons/yr).

(b) Reduce, by use of a control device, total organic emissions from all affected process vents at the facility by 95 weight percent.

(2) If the owner or operator installs a closed−vent system and control device to comply with sub. (1), the closed−vent system and control device shall meet s. NR 664.1033.

(3) Determinations of vent emissions and emission reductions or total organic compound concentrations achieved by add−on control devices may be based on engineering calculations or performance tests. If performance tests are used to determine vent emissions, emission reductions or total organic compound concentrations achieved by add−on control devices, the performance tests shall conform with s. NR 664.1034 (3).

(4) When an owner or operator and the department do not agree on determinations of vent emissions, emission reductions or total organic compound concentrations achieved by add−on control devices based on engineering calculations, use the procedures in s. NR 664.1034 (3) to resolve the disagreement.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1033 Standards: closed−vent systems and control devices. (1) (a) Owners or operators of closed−vent systems and control devices used to comply with provisions of this chapter shall comply with this section.

(b) 1. The owner or operator of an existing facility who cannot install a closed−vent system and control device to comply with this subchapter on the effective date that the facility becomes subject to this subchapter shall prepare an implementation schedule that includes dates by which the closed−vent system and control device will be installed and in operation. The controls shall be installed as soon as possible, but the implementation schedule may allow up to 30 months after the effective date that the facility becomes subject to this subchapter for installation and startup.

2. Any unit that begins operation after June 1, 1995, and is subject to this subchapter when operation begins, shall comply with the rules immediately (i.e., shall have control devices installed and operating on startup of the affected unit; the 30−month implementation schedule does not apply).

3. The owner or operator of any facility in existence on the effective date of a department rule amendment that renders the facility subject to this subchapter shall comply with this subchapter as soon as practicable but no later than 30 months after the amendment's effective date. When control equipment required by this subchapter cannot be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes specific calendar dates for award of contracts or issuance of purchase orders for the control equipment, initiation of on−site installation of the control equipment, completion of the control equipment installation and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this subchapter. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility.

4. Owners and operators of facilities and units that become newly subject to the requirements of this subchapter after August 1, 2006, due to an action other than those described in subd. 3. shall comply with all applicable requirements immediately (i.e., shall have control devices installed and operating on the date the facility or unit becomes subject to this subchapter; the 30−month implementation schedule does not apply).

(2) Design and operate a control device involving vapor recovery (e.g., a condenser or adsorber) to recover the organic vapors vented to it with an efficiency of 95 weight percent or greater unless the total organic emission limits of s. NR 664.1032 (1) (a) for all affected process vents can be attained at an efficiency less than 95 weight percent.

(3) Design and operate an enclosed combustion device (e.g., a vapor incinerator, boiler or process heater) to reduce the organic emissions vented to it by 95 weight percent or greater; to achieve a total organic compound concentration of 20 ppmv, expressed as the sum of the actual compounds, not carbon equivalents, on a dry basis corrected to 3 percent oxygen; or to provide a minimum residence time of 0.50 seconds at a minimum temperature of 760°C. If a boiler or process heater is used as the control device, introduce the vent stream into the flame zone of the boiler or process heater.

(4) (a) A flare shall be designed for and operated with no visible emissions as determined by the methods specified in sub. (5) (a), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

(b) Operate a flare with a flame present at all times, as determined by the methods specified in sub. (6) (b) 3.

(c) Use a flare only if the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam−assisted or air−assisted, or if the net heating value of the gas being combusted is 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. Determine the net heating value of the gas being combusted by the methods specified in sub. (5) (b).

(d) 1. Design a steam−assisted or nonassisted flare for and operate it with an exit velocity, determined by the methods specified in sub. (5) (c), less than 18.3 m/s (60 ft/s), except as provided in subds. 2. and 3.

2. A steam−assisted or nonassisted flare designed for and operated with an exit velocity, determined by the methods specified in sub. (5) (c), equal to or greater than 18.3 m/s (60 ft/s) but less than 122 m/s (400 ft/s) is allowed if the net heating value of the gas being combusted greater than 37.3 MJ/scm (1,000 Btu/scf).

3. A steam−assisted or nonassisted flare designed for and operated with an exit velocity, determined by the methods specified in sub. (5) (c), less than the velocity, V_{max}, determined by the method specified in sub. (5) (d) and less than 122 m/s (400 ft/s) is allowed.

(e) Design and operate an air−assisted flare with an exit velocity less than the velocity, V_{max}, determined by the method specified in sub. (5) (e).

(f) A flare used to comply with this section shall be steam−assisted, air−assisted or nonassisted.

(5) (a) Use Method 22 in appendix A of 40 CFR part 60, incorporated by reference in s. NR 660.11, to determine the compliance of a flare with the visible emission provisions of this subchapter. Use an observation period of 2 hours according to Method 22.

(b) Calculate the net heating value of the gas being combusted in a flare using the following equation:

$$H_T = K \left[\sum_{i=1}^{n} C_i H_i \right]$$

where:

H_T = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to 1 mol is 20 °C

K = Constant, 1.74×10^{-7} (1/ppm) (g mol/scm) (MJ/kcal) where standard temperature for (g mol/scm) is 20°C

C_i = Concentration of sample component i in ppm on a wet basis, measured for organics by Method 18 in appendix A of 40 CFR part 60 and measured for hydrogen and carbon monoxide by ASTM D1946−82, both incorporated by reference in s. NR 660.11

H_i = Net heat of combustion of sample component i, kcal/9 mol at 25°C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382−83, incorporated by reference in s. NR 660.11, if published values are not available or cannot be calculated

(c) Determine the actual exit velocity of a flare by dividing the volumetric flow rate (in units of standard temperature and pressure), determined by Methods 2, 2A, 2C or 2D in appendix A of 40 CFR part 60, incorporated by reference in s. NR 660.11, as appropriate, by the unobstructed (free) cross−sectional area of the flare tip.

(d) Determine the maximum allowed velocity in m/s, V_{max}, for a flare complying with sub. (4) (d) 3. by the following equation:

$$\mathrm{Log}_{10}(V_{max}) = (H_T + 28.8)/31.7$$

where:

28.8 = Constant

31.7 = Constant

H_T = The net heating value determined in par. (b)

(e) Determine the maximum allowed velocity in m/s, V_{max}, for an air−assisted flare by the following equation:

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

where:

8.706 = Constant

0.7084 = Constant

H_T = The net heating value determined in par. (b)

(6) The owner or operator shall monitor and inspect each control device required to comply with this section to ensure proper operation and maintenance of the control device by implementing all of the following requirements:

(a) Install, calibrate, maintain and operate according to the manufacturer's specifications a flow indicator that provides a record of vent stream flow from each affected process vent to the control device at least once every hour. Install the flow indicator sensor in the vent stream at the nearest feasible point to the control device inlet, but before the point at which the vent streams are combined.

(b) Install, calibrate, maintain and operate according to the manufacturer's specifications a device to continuously monitor control device operation according to one of the following:

1. For a thermal vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ±1% of the temperature being monitored in °C or ±0.5°C, whichever is greater. Install the temperature sensor at a location in the combustion chamber downstream of the combustion zone.

2. For a catalytic vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature at 2 locations and have an accuracy of ±1% of the temperature being monitored in °C or ±0.5°C, whichever is greater. Install one temperature sensor in the vent stream at the nearest feasible point to the catalyst bed inlet and install a second temperature sensor in the vent stream at the nearest feasible point to the catalyst bed outlet.

3. For a flare, a heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame.

4. For a boiler or process heater having a design heat input capacity less than 44 MW, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ±1% of the temperature being monitored in °C or ±0.5°C, whichever is greater. Install the temperature sensor at a location in the furnace downstream of the combustion zone.

5. For a boiler or process heater having a design heat input capacity greater than or equal to 44 MW, a monitoring device equipped with a continuous recorder to measure a parameter or parameters that indicates good combustion operating practices are being used.

6. For a condenser, any of the following:

a. A monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the condenser.

b. A temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature with an accuracy of ±1% of the temperature being monitored in °C or ±0.5°C, whichever is greater. Install the temperature sensor at a location in the exhaust vent stream from the condenser exit (i.e., product side).

7. For a carbon adsorption system that regenerates the carbon bed directly in the control device such as a fixed−bed carbon adsorber, any of the following:

a. A monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the carbon bed.

b. A monitoring device equipped with a continuous recorder to measure a parameter that indicates the carbon bed is regenerated on a regular, predetermined time cycle.

(c) Inspect the readings from each monitoring device required by pars. (a) and (b) at least once each operating day to check control device operation and, if necessary, immediately implement the corrective measures necessary to ensure the control device operates in compliance with this section.

(7) An owner or operator using a carbon adsorption system such as a fixed−bed carbon adsorber that regenerates the carbon bed directly onsite in the control device shall replace the existing carbon in the control device with fresh carbon at a regular, predetermined time interval that is no longer than the carbon service life established as a requirement of s. NR 664.1035 (2) (d) 3. f.

(8) An owner or operator using a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device shall replace the existing carbon in the control device with fresh carbon on a regular basis using one of the following procedures:

(a) Monitor the concentration level of the organic compounds in the exhaust vent stream from the carbon adsorption system on a regular schedule and replace the existing carbon with fresh carbon immediately when carbon breakthrough is indicated. The monitoring frequency shall be daily or at an interval no greater than 20% of the time required to consume the total carbon working capacity established as a requirement of s. NR 664.1035 (2) (d) 3. g., whichever is longer.

(b) Replace the existing carbon with fresh carbon at a regular, predetermined time interval that is less than the design carbon replacement interval established as a requirement of s. NR 664.1035 (2) (d) 3. g.

(9) An alternative operational or process parameter may be monitored if it can be demonstrated that another parameter will ensure that the control device is operated in conformance with these standards and the control device's design specifications.

(10) An owner or operator of an affected facility seeking to comply with this chapter by using a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser or carbon adsorption system shall develop documentation including sufficient information to

describe the control device operation and identify the process parameter or parameters that indicate proper operation and maintenance of the control device.

(11) A closed−vent system shall meet any of the following design requirements:

(a) Design a closed−vent system to operate with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background determined by the procedure in s. NR 664.1034 (2), and by visual inspections.

(b) Design a closed−vent system to operate at a pressure below atmospheric pressure. Equip the system with at least one pressure gauge or other pressure measurement device that can be read from a readily accessible location to verify that negative pressure is being maintained in the closed−vent system when the control device is operating.

(12) The owner or operator shall monitor and inspect each closed−vent system required to comply with this section to ensure proper operation and maintenance of the closed−vent system by implementing all of the following requirements:

(a) Inspect and monitor each closed−vent system that is used to comply with sub. (11) (a) according to all of the following requirements:

1. Conduct an initial leak detection monitoring of the closed−vent system on or before the date that the system becomes subject to this section. Monitor the closed−vent system components and connections using the procedures in s. NR 664.1034 (2) to demonstrate that the closed−vent system operates with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background.

2. After initial leak detection monitoring required in subd. 1., inspect and monitor the closed−vent system as follows:

a. Visually inspect closed−vent system joints, seams or other connections that are permanently or semi−permanently sealed (e.g., a welded joint between 2 sections of hard piping or a bolted and gasketed ducting flange) at least once per year to check for defects that could result in air pollutant emissions. Monitor a component or connection using the procedures in s. NR 664.1034 (2) to demonstrate that it operates with no detectable emissions following any time the component is repaired or replaced (e.g., a section of damaged hard piping is replaced with new hard piping) or the connection is unsealed (e.g., a flange is unbolted).

b. Monitor closed−vent system components or connections other than those specified in subd. 2. a. annually and at other times requested by the department, except as provided for in sub. (15), using the procedures in s. NR 664.1034 (2) to demonstrate that the components or connections operate with no detectable emissions.

3. In the event that a defect or leak is detected, repair the defect or leak according to par. (c).

4. Maintain a record of the inspection and monitoring according to s. NR 664.1035.

(b) Inspect and monitor each closed−vent system that is used to comply with sub. (11) (b) according to all of the following requirements:

1. Visually inspect the closed−vent system to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes or gaps in ductwork or piping or loose connections.

2. Perform an initial inspection of the closed−vent system on or before the date that the system becomes subject to this section. Thereafter, perform the inspections at least once every year.

3. In the event that a defect or leak is detected, repair the defect according to par. (c).

4. Maintain a record of the inspection and monitoring according to s. NR 664.1035.

(c) Repair all detected defects according to all of the following:

1. Control detectable emissions, as indicated by visual inspection, or by an instrument reading greater than 500 ppmv above background, as soon as practicable, but not later than 15 calendar days after the emission is detected, except as provided for in subd. 3.

2. Make a first attempt at repair no later than 5 calendar days after the emission is detected.

3. Delay of repair of a closed−vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Complete repair of the equipment by the end of the next process unit shutdown.

4. Maintain a record of the defect repair according to s. NR 664.1035.

(13) Operate closed−vent systems and control devices used to comply with this subchapter at all times when emissions may be vented to them.

(14) The owner or operator using a carbon adsorption system to control air pollutant emissions shall document that all carbon that is a hazardous waste and that is removed from the control device is managed in one of the following manners, regardless of the average volatile organic concentration of the carbon:

(a) Regenerated or reactivated in a thermal treatment unit that meets one of the following:

1. The owner or operator of the unit has been issued an operating license under ch. NR 670 which implements the requirements of subch. X.

2. The unit is equipped with and operating air emission controls according to the applicable requirements of this subchapter and subch. CC or subch. AA of ch. NR 665 and subch. CC of ch. NR 665.

3. The unit is equipped with and operating air emission controls according to a national emission standard for hazardous air pollutants under 40 CFR part 61 or 63, or corresponding provisions of subch. III of ch. NR 446 and chs. NR 447 to 469.

(b) Incinerated in a hazardous waste incinerator for which any of the following conditions has been met:

1. The owner or operator has been issued an operating license under ch. NR 670 which implements the requirements of subch. O.

2. The owner or operator has designed and operates the incinerator according to the interim license requirements of subch. O of ch. NR 665.

(c) Burned in a boiler or industrial furnace for which any of the following conditions has been met:

1. The owner or operator has been issued an operating license under ch. NR 670 which implements the requirements of subch. H of ch. NR 666.

2. The owner or operator has designed and operates the boiler or industrial furnace according to the interim license requirements of subch. H of ch. NR 666.

(15) Any components of a closed−vent system that are designated, as described in s. NR 664.1035 (3) (i), as unsafe to monitor are exempt from sub. (12) (a) 2. b. if the owner or operator does all of the following:

(a) Determines that the components of the closed−vent system are unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with sub. (12) (a) 2. b.

(b) Adheres to a written plan that requires monitoring the closed−vent system components using the procedure in sub. (12) (a) 2. b. as frequently as practicable during safe−to−monitor times.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; **correction in (14) (a) 2. made under s. 13.92 (4) (b) 7., Stats., Register March 2013 No. 687.**

NR 664.1034 Test methods and procedures. **(1)** Each owner or operator subject to this subchapter shall comply with the test methods and procedures requirements in this section.

(2) When a closed−vent system is tested for compliance with no detectable emissions, as required in s. NR 664.1033 (12), the test shall comply with all of the following requirements:

(a) Monitoring shall comply with Method 21 in appendix A of 40 CFR part 60, incorporated by reference in s. NR 660.11.

(b) The detection instrument shall meet the performance criteria of Method 21 in appendix A of 40 CFR part 60, incorporated by reference in s. NR 660.11.

(c) The instrument shall be calibrated before use on each day of its use by the procedures in Method 21 in appendix A of 40 CFR part 60, incorporated by reference in s. NR 660.11.

(d) Calibration gases shall be all of the following:

1. Zero air (less than 10 ppm of hydrocarbon in air).

2. A mixture of methane or n−hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n−hexane.

(e) Determine the background level according to Method 21 in appendix A of 40 CFR part 60, incorporated by reference in s. NR 660.11.

(f) Traverse the instrument probe around all potential leak interfaces as close to the interface as possible as described in Method 21 in appendix A of 40 CFR part 60, incorporated by reference in s. NR 660.11.

(g) Compare the arithmetic difference between the maximum concentration indicated by the instrument and the background level with 500 ppm for determining compliance.

(3) Performance tests to determine compliance with s. NR 664.1032 (1) and with the total organic compound concentration limit of s. NR 664.1033 (3) shall comply with all of the following:

(a) Conduct performance tests to determine total organic compound concentrations and mass flow rates entering and exiting control devices and reduce data according to all of the following methods and calculation procedures:

1. Method 2 in appendix A of 40 CFR part 60, incorporated by reference in s. NR 660.11, for velocity and volumetric flow rate.

2. Method 18 in appendix A of 40 CFR part 60, incorporated by reference in s. NR 660.11, for organic content.

3. Each performance test shall consist of 3 separate runs; conduct each run for at least one hour under the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. For the purpose of determining total organic compound concentrations and mass flow rates, average the results of all runs. Compute the average on a time−weighted basis.

4. Determine total organic mass flow rates by the following equation:

$$E_h = Q_{sd}\left\{\sum_{i=1}^{n} C_i MW_i\right\}[0.0416][10^{-6}]$$

where:

E_h = Total organic mass flow rate, kg/h

Q_{sd} = Volumetric flow rate of gases entering or exiting control device, determined by Method 2, dscm/h

n = Number of organic compounds in the vent gas

C_i = Organic concentration in ppm, dry basis, of compound i in the vent gas, determined by Method 18

MW_i = Molecular weight of organic compound i in the vent gas, kg/kg−mol

0.0416 = Conversion factor for molar volume, kg−mol/m^3 (at 293 K and 760 mm Hg)

10^{-6} = Conversion from ppm, ppm^{-1}

5. Determine the annual total organic emission rate by the following equation:

$$E_A = (E_h)(H)$$

where:

E_A = Total organic mass emission rate, kg/y

E_h = Total organic mass flow rate for the process vent, kg/h

H = Total annual hours of operations for the affected unit, h

6. Determine total organic emissions from all affected process vents at the facility by summing the hourly total organic mass emission rates (E_h, determined in subd. 4.) and by summing the annual total organic mass emission rates (E_A, determined in subd. 5.) for all affected process vents at the facility.

(b) Record the process information as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown and malfunction may not constitute representative conditions for the purpose of a performance test.

(c) For an affected facility, provide, or cause to be provided, all of the following performance testing facilities:

1. Sampling ports adequate for the test methods specified in par. (a).

2. A safe sampling platform or platforms.

3. Safe access to the sampling platform or platforms.

4. Utilities for sampling and testing equipment.

(d) For the purpose of making compliance determinations, use the time−weighted average of the results of the 3 runs. In the event that a sample is accidentally lost or conditions occur in which one of the 3 runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions or other circumstances beyond the owner or operator's control, compliance may, upon the department's approval, be determined using the average of the results of the 2 other runs.

(4) To show that a process vent associated with a hazardous waste distillation, fractionation, thin−film evaporation, solvent extraction or air or steam stripping operation is not subject to this subchapter, the owner or operator shall make an initial determination that the time−weighted, annual average total organic concentration of the waste managed by the waste management unit is less than 10 ppmw using one of the following 2 methods:

(a) *Direct measurement of the organic concentration of the waste.* This method requires all of the following:

1. Take a minimum of 4 grab samples of waste for each waste stream managed in the affected unit under process conditions expected to cause the maximum waste organic concentration.

2. For waste generated onsite, collect the grab samples at a point before the waste is exposed to the atmosphere such as in an enclosed pipe or other closed system that is used to transfer the waste after generation to the first affected distillation, fractionation, thin−film evaporation, solvent extraction or air or steam stripping operation. For waste generated off−site, collect the grab samples at the inlet to the first waste management unit that receives the waste provided the waste has been transferred to the facility in a closed system such as a tank truck and the waste is not diluted or mixed with other waste.

3. Analyze each sample and compute the total organic concentration of the sample using Method 9060 or 8260 of EPA SW−846, incorporated by reference in s. NR 660.11.

4. Use the arithmetic mean of the results of the analyses of the 4 samples for each waste stream managed in the unit in determining the time−weighted, annual average total organic concentration of the waste. Calculate the time−weighted average using the annual quantity of each waste stream processed and the mean organic concentration of each waste stream managed in the unit.

(b) *Using knowledge of the waste to determine that its total organic concentration is less than 10 ppmw.* This method requires documentation of the waste determination. Examples of documentation that shall be used to support a determination under this paragraph include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to generate a waste stream having a total organic content less than 10 ppmw, or prior speciation analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

(5) Make the determination that distillation, fractionation, thin−film evaporation, solvent extraction or air or steam stripping operations manage hazardous wastes with time−weighted, annual average total organic concentrations less than 10 ppmw according to pars. (a) and (b) or (c):

(a) By the effective date that the facility becomes subject to this subchapter or by the date when the waste is first managed in a waste management unit, whichever is later.

(b) For continuously generated waste, annually.

(c) Whenever there is a change in the waste being managed or a change in the process that generates or treats the waste.

(6) When an owner or operator and the department do not agree on whether a distillation, fractionation, thin−film evaporation, solvent extraction or air or steam stripping operation manages a hazardous waste with organic concentrations of at least 10 ppmw based on knowledge of the waste, the procedures in Method 8260 of EPA SW−846, incorporated by reference in s. NR 660.11, may be used to resolve the dispute.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1035 Recordkeeping requirements. (1) (a) Each owner or operator subject to this subchapter shall comply with this section.

(b) An owner or operator of more than one hazardous waste management unit subject to this subchapter may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.

(2) Record all of the following information in the facility operating record:

(a) For facilities that comply with s. NR 664.1033 (1) (b), an implementation schedule that includes dates by which the closed−vent system and control device will be installed and in operation. The schedule shall also include a rationale of why the installation cannot be completed at an earlier date. The implementation schedule shall be in the facility operating record by the effective date that the facility becomes subject to this subchapter.

(b) Up−to−date documentation of compliance with the process vent standards in s. NR 664.1032, including all of the following:

1. Information and data identifying all affected process vents, annual throughput and operating hours of each affected unit, estimated emission rates for each affected vent and for the overall facility (i.e., the total emissions for all affected vents at the facility) and the approximate location within the facility of each affected unit (e.g., identify the hazardous waste management units on a facility plot plan).

2. Information and data supporting determinations of vent emissions and emission reductions achieved by add−on control devices based on engineering calculations or source tests. For the purpose of determining compliance, make determinations of vent emissions and emission reductions using operating parameter values (e.g., temperatures, flow rates or vent stream organic compounds and concentrations) that represent the conditions that result in maximum organic emissions, such as when the waste management unit is operating at the highest load or capacity level reasonably expected to occur. If the owner or operator takes any action (e.g., managing a waste of different composition or increasing operating hours of affected waste management units) that would result in an increase in total organic emissions from affected process vents at the facility, a new determination is required.

(c) Where an owner or operator chooses to use test data to determine the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan. The test plan shall include all of the following:

1. A description of how it is determined that the planned test is going to be conducted when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. This shall include the estimated or design flow rate and organic content of each vent stream and define the acceptable operating ranges of key process and control device parameters during the test program.

2. A detailed engineering description of the closed−vent system and control device including all of the following:

a. Manufacturer's name and model number of control device.

b. Type of control device.

c. Dimensions of the control device.

d. Capacity.

e. Construction materials.

3. A detailed description of sampling and monitoring procedures, including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency and planned analytical procedures for sample analysis.

(d) Documentation of compliance with s. NR 664.1033 shall include all of the following information:

1. A list of all information references and sources used in preparing the documentation.

2. Records, including the dates, of each compliance test required by s. NR 664.1033 (11).

3. If engineering calculations are used, a design analysis, specifications, drawings, schematics and piping and instrumentation diagrams based on the appropriate sections of "APTI Course 415: Control of Gaseous Emissions", incorporated by reference in s. NR 660.11, or other engineering texts acceptable to the department that present basic control device design information. Documentation provided by the control device manufacturer or vendor that describes the control device design according to subd. 3. a. to g. may be used to comply with this requirement. The design analysis shall address the vent stream characteristics and control device operation parameters as follows:

a. For a thermal vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations and flow rate. The design analysis shall also establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.

b. For a catalytic vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations and flow rate. The design analysis shall also establish the design minimum and average temperatures across the catalyst bed inlet and outlet.

c. For a boiler or process heater, the design analysis shall consider the vent stream composition, constituent concentrations and flow rate. The design analysis shall also establish the design minimum and average flame zone temperatures, combustion zone residence time and description of method and location where the vent stream is introduced into the combustion zone.

d. For a flare, the design analysis shall consider the vent stream composition, constituent concentrations and flow rate. The design analysis shall also consider the requirements in s. NR 664.1033 (4).

e. For a condenser, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, rela-

tive humidity and temperature. The design analysis shall also establish 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.

f. For a carbon adsorption system such as a fixed−bed adsorber that regenerates the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total steam flow over the period of each complete carbon bed regeneration cycle, duration of the carbon bed steaming and cooling or drying cycles, design carbon bed temperature after regeneration, design carbon bed regeneration time and design service life of carbon.

g. For a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity and temperature. The design analysis shall also establish the design outlet organic concentration level, capacity of carbon bed, 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.

4. A statement signed and dated by the owner or operator certifying that the operating parameters used in the design analysis reasonably represent the conditions that exist when the hazardous waste management unit is or would be operating at the highest load or capacity level reasonably expected to occur.

5. A statement signed and dated by the owner or operator certifying that the control device is designed to operate at an efficiency of 95% or greater, unless the total organic concentration limit of s. NR 664.1032 (1) is achieved at an efficiency less than 95 weight percent or the total organic emission limits of s. NR 664.1032 (1) for affected process vents at the facility can be attained by a control device involving vapor recovery at an efficiency less than 95 weight percent. A statement provided by the control device manufacturer or vendor certifying that the control equipment meets the design specifications may be used to comply with this requirement.

6. If performance tests are used to demonstrate compliance, all test results.

(3) Record and keep up−to−date in the facility operating record design documentation and monitoring, operating and inspection information for each closed−vent system and control device required to comply with this chapter. The information shall include all of the following:

(a) Description and date of each modification that is made to the closed−vent system or control device design.

(b) Identification of operating parameter, description of monitoring device and diagram of monitoring sensor location or locations used to comply with s. NR 664.1033 (6) (a) and (b).

(c) Monitoring, operating and inspection information required by s. NR 664.1033 (6) to (11).

(d) Date, time and duration of each period that occurs while the control device is operating when any monitored parameter exceeds the value established in the control device design analysis as follows:

1. For a thermal vapor incinerator designed to operate with a minimum residence time of 0.50 seconds at a minimum temperature of 760°C, period when the combustion temperature is below 760°C.

2. For a thermal vapor incinerator designed to operate with an organic emission reduction efficiency of 95 weight percent or greater, period when the combustion zone temperature is more than 28°C below the design average combustion zone temperature established as a requirement of sub. (2) (d) 3. a.

3. For a catalytic vapor incinerator, period when any of the following occurs:

a. Temperature of the vent stream at the catalyst bed inlet is more than 28°C below the average temperature of the inlet vent stream established as a requirement of sub. (2) (d) 3. b.

b. Temperature difference across the catalyst bed is less than 80% of the design average temperature difference established as a requirement of sub. (2) (d) 3. b.

4. For a boiler or process heater, period when any of the following occurs:

a. Flame zone temperature is more than 28°C below the design average flame zone temperature established as a requirement of sub. (2) (d) 3. c.

b. Position changes where the vent stream is introduced to the combustion zone from the location established as a requirement of sub. (2) (d) 3. c.

5. For a flare, period when the pilot flame is not ignited.

6. For a condenser that complies with s. NR 664.1033 (6) (b) 6. a., period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the condenser are more than 20% greater than the design outlet organic compound concentration level established as a requirement of sub. (2) (d) 3. e.

7. For a condenser that complies with s. NR 664.1033 (6) (b) 6. b., period when any of the following occurs:

a. Temperature of the exhaust vent stream from the condenser is more than 6°C above the design average exhaust vent stream temperature established as a requirement of sub. (2) (d) 3. e.

b. Temperature of the coolant fluid exiting the condenser is more than 6°C above the design average coolant fluid temperature at the condenser outlet established as a requirement of sub. (2) (d) 3. e.

8. For a carbon adsorption system such as a fixed−bed carbon adsorber that regenerates the carbon bed directly onsite in the control device and complies with s. NR 664.1033 (6) (b) 7. a., period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the carbon bed are more than 20% greater than the design exhaust vent stream organic compound concentration level established as a requirement of sub. (2) (d) 3. f.

9. For a carbon adsorption system such as a fixed−bed carbon adsorber that regenerates the carbon bed directly onsite in the control device and complies with s. NR 664.1033 (6) (b) 7. b., period when the vent stream continues to flow through the control device beyond the predetermined carbon bed regeneration time established as a requirement of sub. (2) (d) 3. f.

(e) Explanation for each period recorded under par. (d) of the cause for control device operating parameter exceeding the design value and the measures implemented to correct the control device operation.

(f) For a carbon adsorption system operated subject to s. NR 664.1033 (7) or (8) (b), date when existing carbon in the control device is replaced with fresh carbon.

(g) For a carbon adsorption system operated subject to s. NR 664.1033 (8) (a), a log that records all of the following:

1. Date and time when control device is monitored for carbon breakthrough and the monitoring device reading.

2. Date when existing carbon in the control device is replaced with fresh carbon.

(h) Date of each control device startup and shutdown.

(i) An owner or operator designating any components of a closed−vent system as unsafe to monitor pursuant to s. NR 664.1033 (15) shall record in a log that is kept in the facility operating record the identification of closed−vent system components that are designated as unsafe to monitor according to s. NR 664.1033 (15), an explanation for each closed−vent system component stating why the closed−vent system component is unsafe to monitor and the plan for monitoring each closed−vent system component.

(j) When each leak is detected as specified in s. NR 664.1033 (12), record all of the following information:

1. The instrument identification number, the closed−vent system component identification number and the operator name, initials or identification number.

2. The date the leak was detected and the date of first attempt to repair the leak.

3. The date of successful repair of the leak.

4. Maximum instrument reading measured by Method 21 in appendix A of 40 CFR part 60, incorporated by reference in s. NR 660.11, after the leak is successfully repaired or determined to be nonrepairable.

5. "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

a. The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. In those cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

b. If delay of repair was caused by depletion of stocked parts, there shall be documentation that the spare parts were sufficiently stocked on−site before depletion and the reason for depletion.

(4) Maintain records of the monitoring, operating and inspection information required by sub. (3) (c) to (j) for at least 3 years following the date of each occurrence, measurement, maintenance, corrective action or record.

(5) For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser or carbon adsorption system, the department shall specify the appropriate recordkeeping requirements.

(6) Record up−to−date information and data used to determine whether or not a process vent is subject to s. NR 664.1032, including supporting documentation required by s. NR 664.1034 (4) (b) when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used, in a log that is kept in the facility operating record.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1036 Reporting requirements. (1) Owners and operators subject to this subchapter shall submit a semiannual report to the department by dates specified by the department. The report shall include all of the following information:

(a) The EPA identification number, name and address of the facility.

(b) For each month during the semiannual reporting period, dates when the control device exceeded or operated outside of the design specifications as defined in s. NR 664.1035 (3) (d) and as indicated by the control device monitoring required by s. NR 664.1033 (6) and the exceedances were not corrected within 24 hours, or that a flare operated with visible emissions as defined in s. NR 664.1033 (4) and as determined by Method 22 in appendix A of 40 CFR part 60, incorporated by reference in s. NR 660.11, monitoring, the duration and cause of each exceedance or visible emissions and any corrective measures taken.

(2) If, during the semiannual reporting period, the control device does not exceed or operate outside of the design specifications as defined in s. NR 664.1035 (3) (d) for more than 24 hours or a flare does not operate with visible emissions as defined in s. NR 664.1033 (4), a report is not required.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter BB — Air Emission Standards for Equipment Leaks

NR 664.1050 Applicability. (1) This subchapter applies to owners and operators of facilities that treat, store or dispose of hazardous wastes (except as provided in s. NR 664.0001).

(2) Except as provided in s. NR 664.1064 (11), this subchapter applies to equipment that contains or contacts hazardous wastes with organic concentrations of at least 10% by weight that are managed in one of the following:

(a) A unit that is subject to the licensing requirements of ch. NR 670.

(b) A unit (including a hazardous waste recycling unit) that is not exempt from licensing under s. NR 662.034 (1) (i.e., a hazardous waste recycling unit that is not a "90−day" tank or container) and that is located at a hazardous waste management facility otherwise subject to the licensing requirements of ch. NR 670.

(c) A unit that is exempt from licensing under s. NR 662.034 (1) (i.e., a "90−day" tank or container) and is not a recycling unit under s. NR 661.06.

(3) For the owner or operator of a facility subject to this subchapter and who received an operating license under s. 291.25, Stats., prior to December 6, 1996, the requirements of this subchapter shall be incorporated into the license when the license is reissued according to the requirements of s. NR 670.415 or reviewed according to s. NR 670.050 (4). Until the date when the owner or operator receives an operating license incorporating the requirements of this subchapter, the owner or operator is subject to the requirements of subch. BB of ch. NR 665.

(4) Each piece of equipment to which this subchapter applies shall be marked in such a manner that it can be distinguished readily from other pieces of equipment.

(5) Equipment that is in vacuum service is excluded from ss. NR 664.1052 to 664.1060 if it is identified as required in s. NR 664.1064 (7) (e).

(6) Equipment that contains or contacts hazardous waste with an organic concentration of at least 10% by weight for less than 300 hours per calendar year is excluded from ss. NR 664.1052 to 664.1060 if it is identified, as required in s. NR 664.1064 (7) (f).

Note: Sections NR 664.1052 to 664.1065 apply to equipment associated with hazardous waste recycling units previously exempt under s. NR 661.06(3)(a). Other exemptions under ss. NR 661.04 and 664.0001(7) are not affected by these requirements.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1051 Definitions. As used in this subchapter, all terms shall have the meaning given them in s. NR 664.1031, ch. 291, Stats., and chs. NR 660 to 666.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1052 Standards: pumps in light liquid service. (1) (a) Monitor each pump in light liquid service monthly to detect leaks by the methods specified in s. NR 664.1063 (2), except as provided in subs. (4) to (6).

(b) Check each pump in light liquid service by visual inspection each calendar week for indications of liquids dripping from the pump seal.

(2) (a) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(b) If there are indications of liquids dripping from the pump seal, a leak is detected.

(3) (a) When a leak is detected, repair it as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in s. NR 664.1059.

(b) Make a first attempt at repair (e.g., tightening the packing gland) no later than 5 calendar days after each leak is detected.

(4) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from sub. (1), provided all of the following requirements are met:

(a) Each dual mechanical seal system shall be one of the following:

1. Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure.

2. Equipped with a barrier fluid degassing reservoir that is connected by a closed−vent system to a control device that complies with s. NR 664.1060.

3. Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to the atmosphere.

(b) The barrier fluid system may not be a hazardous waste with organic concentrations 10% or greater by weight.

(c) Equip each barrier fluid system with a sensor that will detect failure of the seal system, the barrier fluid system or both.

(d) Check each pump by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

(e) 1. Check each sensor as described in par. (c) daily, or equip it with an audible alarm and check the alarm monthly to ensure that it is functioning properly.

2. Determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system or both.

(f) 1. If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system or both based on the criterion determined in par. (e) 2., a leak is detected.

2. When a leak is detected, repair it as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in s. NR 664.1059.

3. Make a first attempt at repair (e.g., relapping the seal) no later than 5 calendar days after each leak is detected.

(5) Any pump that is designated, as described in s. NR 664.1064 (7) (b), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from subs. (1), (3) and (4) if the pump meets all of the following requirements:

(a) It has no externally actuated shaft penetrating the pump housing.

(b) It operates with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background measured by the methods specified in s. NR 664.1063 (3).

(c) It is tested for compliance with par. (b) initially upon designation, annually and at other times requested by the department.

(6) If any pump is equipped with a closed−vent system capable of capturing and transporting any leakage from the seal or seals to a control device that complies with s. NR 664.1060, it is exempt from subs. (1) to (5).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1053 Standards: compressors. (1) Equip each compressor with a seal system that includes a barrier fluid system and that prevents leakage of total organic emissions to the atmosphere, except as provided in subs. (8) and (9).

(2) Each compressor seal system as required in sub. (1) shall be one of the following:

(a) Operated with the barrier fluid at a pressure that is at all times greater than the compressor stuffing box pressure.

(b) Equipped with a barrier fluid system that is connected by a closed−vent system to a control device that complies with s. NR 664.1060.

(c) Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to atmosphere.

(3) The barrier fluid may not be a hazardous waste with organic concentrations 10% or greater by weight.

(4) Equip each barrier fluid system described in subs. (1) to (3) with a sensor that will detect failure of the seal system, barrier fluid system or both.

(5) (a) Check each sensor required in sub. (4) daily or equip it with an audible alarm and check the alarm monthly to ensure it is functioning properly, unless the compressor is located within the boundary of an unmanned plant site, in which case check the sensor daily.

(b) Determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system or both.

(6) If the sensor indicates failure of the seal system, the barrier fluid system or both based on the criterion determined under sub. (5) (b), a leak is detected.

(7) (a) When a leak is detected, repair it as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in s. NR 664.1059.

(b) Make a first attempt at repair (e.g., tightening the packing gland) no later than 5 calendar days after each leak is detected.

(8) A compressor is exempt from subs. (1) and (2) if it is equipped with a closed−vent system capable of capturing and transporting any leakage from the seal to a control device that complies with s. NR 664.1060, except as provided in sub. (9).

(9) Any compressor that is designated, as described in s. NR 664.1064 (7) (b), for no detectable emissions as indicated by an instrument reading of less than 500 ppm above background is exempt from subs. (1) to (8) if the compressor meets all of the following requirements:

(a) It is determined to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, measured by the method specified in s. NR 664.1063 (3).

(b) It is tested for compliance with par. (a) initially upon designation, annually and at other times requested by the department.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1054 Standards: pressure relief devices in gas or vapor service. (1) Except during pressure releases, operate each pressure relief device in gas or vapor service with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, measured by the method specified in s. NR 664.1063 (3).

(2) (a) After each pressure release, return the pressure relief device to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in s. NR 664.1059.

(b) No later than 5 calendar days after the pressure release, monitor the pressure relief device to confirm the condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, measured by the method specified in s. NR 664.1063 (3).

(3) Any pressure relief device that is equipped with a closed−vent system capable of capturing and transporting leakage from the pressure relief device to a control device described in s. NR 664.1060 is exempt from subs. (1) and (2).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1055 Standards: sampling connection systems. (1) Equip each sampling connection system with a closed−purge, closed−loop or closed−vent system. The system shall collect the sample purge for return to the process or for routing to the appropriate treatment system. Gases displaced during

filling of the sample container are not required to be collected or captured.

(2) Each closed−purge, closed−loop or closed−vent system required in sub. (1) shall meet one of the following requirements:

(a) It returns the purged process fluid directly to the process line.

(b) It collects and recycles the purged process fluid.

(c) It is designed and operated to capture and transport all the purged process fluid to a waste management unit that complies with the applicable requirements of ss. NR 664.1084 to 664.1086 or a control device that complies with s. NR 664.1060.

(3) In−situ sampling systems and sampling systems without purges are exempt from subs. (1) and (2).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1056 Standards: open−ended valves or lines. (1) (a) Equip each open−ended valve or line with a cap, blind flange, plug or a second valve.

(b) The cap, blind flange, plug or second valve shall seal the open end at all times except during operations requiring hazardous waste stream flow through the open−ended valve or line.

(2) Operate each open−ended valve or line equipped with a second valve in a manner such that the valve on the hazardous waste stream end is closed before the second valve is closed.

(3) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with sub. (1) at all other times.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1057 Standards: valves in gas or vapor service or in light liquid service. (1) Monitor each valve in gas, vapor or light liquid service monthly to detect leaks by the methods specified in s. NR 664.1063 (2) and comply with subs. (2) to (5), except as provided in subs. (6) to (8) and ss. NR 664.1061 and 664.1062.

(2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(3) (a) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every succeeding quarter, beginning with the next quarter, until a leak is detected.

(b) If a leak is detected, monitor the valve monthly until a leak is not detected for 2 successive months.

(4) (a) When a leak is detected, repair it as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in s. NR 664.1059.

(b) Make a first attempt at repair no later than 5 calendar days after each leak is detected.

(5) First attempts at repair include, but are not limited to, the following best practices where practicable:

(a) Tightening of bonnet bolts.

(b) Replacement of bonnet bolts.

(c) Tightening of packing gland nuts.

(d) Injection of lubricant into lubricated packing.

(6) Any valve that is designated, as described in s. NR 664.1064 (7) (b), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from sub. (1) if the valve meets all of the following requirements:

(a) It has no external actuating mechanism in contact with the hazardous waste stream.

(b) It is operated with emissions less than 500 ppm above background determined by the method specified in s. NR 664.1063 (3).

(c) It is tested for compliance with par. (b) initially upon designation, annually and at other times requested by the department.

(7) Any valve that is designated, as described in s. NR 664.1064 (8) (a), as an unsafe−to−monitor valve is exempt from sub. (1) if the owner or operator does all of the following:

(a) Determines that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with sub. (1).

(b) Adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe−to−monitor times.

(8) Any valve that is designated, as described in s. NR 664.1064 (8) (b), as a difficult−to−monitor valve is exempt from sub. (1) if any of the following requirements are met:

(a) The owner or operator of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.

(b) The hazardous waste management unit within which the valve is located was in operation before June 1, 1995.

(c) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1058 Standards: pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service and flanges and other connectors. (1) Monitor pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service and flanges and other connectors within 5 days by the method specified in s. NR 664.1063 (2) if evidence of a potential leak is found by visual, audible, olfactory or any other detection method.

(2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(3) (a) When a leak is detected, repair it as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in s. NR 664.1059.

(b) Make the first attempt at repair no later than 5 calendar days after each leak is detected.

(4) First attempts at repair include, but are not limited to, the best practices described under s. NR 664.1057 (5).

(5) Any connector that is inaccessible or is ceramic or ceramic−lined (e.g., porcelain, glass or glass−lined) is exempt from sub. (1) and from s. NR 664.1064.

NR 664.1059 Standards: delay of repair. (1) Delay of repair of equipment for which leaks have been detected shall be allowed if the repair is technically infeasible without a hazardous waste management unit shutdown. In such a case, repair the equipment before the end of the next hazardous waste management unit shutdown.

(2) Delay of repair of equipment for which leaks have been detected shall be allowed for equipment that is isolated from the hazardous waste management unit and that does not continue to contain or contact hazardous waste with organic concentrations at least 10% by weight.

(3) Delay of repair for valves shall be allowed if all of the following conditions are met:

(a) The owner or operator determines that emissions of purged material resulting from immediate repair are greater than the emissions likely to result from delay of repair.

(b) When repair procedures are effected, collect and destroy or recover the purged material in a control device complying with s. NR 664.1060.

(4) Delay of repair for pumps shall be allowed if all of the following conditions are met:

(a) The repair requires use of a dual mechanical seal system that includes a barrier fluid system.

(b) The repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

(5) Delay of repair beyond a hazardous waste management unit shutdown shall be allowed for a valve if valve assembly replacement is necessary during the hazardous waste management unit shutdown, valve assembly supplies have been depleted and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Repair may not be delayed beyond the next hazardous waste management unit shutdown unless the next hazardous waste management unit shutdown occurs sooner than 6 months after the first hazardous waste management unit shutdown.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1060 Standards: closed−vent systems and control devices. (1) Owners and operators of closed−vent systems and control devices subject to this subchapter shall comply with s. NR 664.1033.

(2) (a) The owner or operator of an existing facility who cannot install a closed−vent system and control device to comply with this subchapter on the effective date that the facility becomes subject to this subchapter shall prepare an implementation schedule that includes dates by which the closed−vent system and control device will be installed and in operation. Install the controls as soon as possible, but the implementation schedule may allow up to 30 months after the effective date that the facility becomes subject to this subchapter for installation and startup.

(b) Any unit that begins operation after June 1, 1995, and is subject to this subchapter when operation begins, shall comply with the rules immediately (i.e., shall have control devices installed and operating on startup of the affected unit; the 30−month implementation schedule does not apply).

(c) The owner or operator of any facility in existence on the effective date of a department rule amendment that renders the facility subject to this subchapter shall comply with this subchapter as soon as practicable but no later than 30 months after the amendment's effective date. When control equipment required by this subchapter cannot be installed and begin operation by the effective date of the amendment, prepare an implementation schedule that includes specific calendar dates for award or contracts or issuance of purchase orders for the control equipment, initiation of on−site installation of the control equipment, completion of the control equipment installation and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this subchapter. Enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility.

(d) Owners and operators of facilities and units that become newly subject to this subchapter after August 1, 2006, due to an action other than those described in par. (c) shall comply with all applicable requirements immediately (i.e., shall have control devices installed and operating on the date the facility or unit becomes subject to this subchapter; the 30−month implementation schedule does not apply).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1061 Alternative standards for valves in gas or vapor service or in light liquid service: percentage of valves allowed to leak. (1) An owner or operator subject to s. NR 664.1057 may elect to have all valves within a hazardous waste management unit comply with an alternative standard that allows no greater than 2% of the valves to leak.

(2) An owner or operator who decides to comply with the alternative standard of allowing 2% of valves to leak shall meet all of the following requirements:

(a) Notify the department that the owner or operator has elected to comply with this section.

(b) Conduct a performance test as specified in sub. (3) initially upon designation, annually and at other times requested by the department.

(c) If a valve leak is detected, repair it according to s. NR 664.1057 (4) and (5).

(3) Conduct performance tests according to all of the following:

(a) Monitor all valves subject to s. NR 664.1057, within the hazardous waste management unit, within one week by the methods specified in s. NR 664.1063 (2).

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c) Determine the leak percentage by dividing the number of valves subject to s. NR 664.1057 for which leaks are detected, by the total number of valves subject to s. NR 664.1057 within the hazardous waste management unit.

(4) An owner or operator who decides to no longer comply with this section, shall notify the department in writing that the owner or operator will follow the work practice standard described in s. NR 664.1057 (1) to (5).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1062 Alternative standards for valves in gas or vapor service or in light liquid service: skip period leak detection and repair. (1) (a) An owner or operator subject to s. NR 664.1057 may elect for all valves within a hazardous waste management unit to comply with one of the alternative work practices specified in sub. (2) (b) and (c).

(b) An owner or operator shall notify the department before implementing one of the alternative work practices.

(2) (a) An owner or operator shall comply with the requirements for valves in s. NR 664.1057, except as described in pars. (b) and (c).

(b) After 2 consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2%, an owner or operator may begin to skip one of the quarterly leak detection periods (i.e., monitor for leaks once every 6 months) for the valves subject to s. NR 664.1057.

(c) After 5 consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2%, an owner or operator may begin to skip 3 of the quarterly leak detection periods (i.e., monitor for leaks once every year) for the valves subject to s. NR 664.1057.

(d) If the percentage of valves leaking is greater than 2%, the owner or operator shall monitor monthly in compliance with s. NR 664.1057, but may again elect to use this section after meeting s. NR 664.1057 (3) (a).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1063 Test methods and procedures. (1) Each owner or operator subject to this subchapter shall comply with the test methods and procedures requirements in this section.

(2) Leak detection monitoring, as required in ss. NR 664.1052 to 664.1062, shall comply with all of the following requirements:

(a) Monitoring shall comply with Method 21 in appendix A of 40 CFR part 60, incorporated by reference in s. NR 660.11.

(b) The detection instrument shall meet the performance criteria of Method 21.

(c) Calibrate the instrument before use on each day of its use by the procedures in Method 21.

(d) Calibration gases shall be all of the following:

1. Zero air (less than 10 ppm of hydrocarbon in air).

2. A mixture of methane or n−hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n−hexane.

(e) Traverse the instrument probe around all potential leak interfaces as close to the interface as possible as described in Method 21.

(3) When equipment is tested for compliance with no detectable emissions, as required in ss. NR 664.1052 (5), 664.1053 (9),

664.1054 and 664.1057 (6), the test shall comply with all of the following requirements:

(a) Comply with sub. (2) (a) to (d).

(b) Determine the background level, as set forth in Method 21.

(c) Traverse the instrument probe around all potential leak interfaces as close to the interface as possible as described in Method 21.

(d) Compare the arithmetic difference between the maximum concentration indicated by the instrument and the background level with 500 ppm for determining compliance.

(4) According to the waste analysis plan required by s. NR 664.0013 (2), an owner or operator of a facility shall determine, for each piece of equipment, whether the equipment contains or contacts a hazardous waste with an organic concentration that equals or exceeds 10% by weight using any of the following:

(a) Methods described in ASTM Methods D2267−88, E169−87, E168−88 or E260−85, incorporated by reference in s. NR 660.11.

(b) Method 9060 or 8260 of EPA SW−846, incorporated by reference in s. NR 660.11.

(c) Application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced. This method requires documentation of a waste determination. Examples of documentation that shall be used to support a determination under this paragraph include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to have a total organic content less than 10% or prior speciation analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

(5) If an owner or operator determines that a piece of equipment contains or contacts a hazardous waste with organic concentrations at least 10% by weight, the determination can be revised only after following the procedures in sub. (4) (a) or (b).

(6) When an owner or operator and the department do not agree on whether a piece of equipment contains or contacts a hazardous waste with organic concentrations at least 10% by weight, the procedures in sub. (4) (a) or (b) can be used to resolve the dispute.

(7) Samples used in determining the percent organic content shall be representative of the highest total organic content hazardous waste that is expected to be contained in or contact the equipment.

(8) To determine if pumps or valves are in light liquid service, the vapor pressures of constituents may be obtained from standard reference texts or may be determined by ASTM D2879−86, incorporated by reference in s. NR 660.11.

(9) Performance tests to determine if a control device achieves 95 weight percent organic emission reduction shall comply with s. NR 664.1034 (3) (a) to (d).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1064 Recordkeeping requirements. (1) (a) Each owner or operator subject to this subchapter shall comply with this section.

(b) An owner or operator of more than one hazardous waste management unit subject to this subchapter may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.

(2) Owners and operators shall record all of the following information in the facility operating record:

(a) For each piece of equipment to which this subchapter applies:

1. Equipment identification number and hazardous waste management unit identification.

2. Approximate locations within the facility (e.g., identify the hazardous waste management unit on a facility plot plan).

3. Type of equipment (e.g., a pump or pipeline valve).

4. Percent−by−weight total organics in the hazardous waste stream at the equipment.

5. Hazardous waste state at the equipment (e.g., gas or vapor or liquid).

6. Method of compliance with the standard (e.g., "monthly leak detection and repair" or "equipped with dual mechanical seals").

(b) For facilities that comply with s. NR 664.1033 (1) (b), an implementation schedule as specified in s. NR 664.1033 (1) (b).

(c) Where an owner or operator chooses to use test data to demonstrate the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan as specified in s. NR 664.1035 (2) (c).

(d) Documentation of compliance with s. NR 664.1060, including the detailed design documentation or performance test results specified in s. NR 664.1035 (2) (d).

(3) When each leak is detected as specified in ss. NR 664.1052, 664.1053, 664.1057 and 664.1058, all of the following requirements apply:

(a) Attach to the leaking equipment a weatherproof and readily visible identification, marked with the equipment identification number, the date evidence of a potential leak was found according to s. NR 664.1058 (1) and the date the leak was detected.

(b) The identification on equipment, except on a valve, may be removed after it has been repaired.

(c) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in s. NR 664.1057 (3) and no leak has been detected during those 2 months.

(4) When each leak is detected as specified in ss. NR 664.1052, 664.1053, 664.1057 and 664.1058, record all of the following information in an inspection log and keep it in the facility operating record:

(a) The instrument and operator identification numbers and the equipment identification number.

(b) The date evidence of a potential leak was found according to s. NR 664.1058 (1).

(c) The date the leak was detected and the dates of each attempt to repair the leak.

(d) Repair methods applied in each attempt to repair the leak.

(e) "Above 10,000" if the maximum instrument reading measured by the methods specified in s. NR 664.1063 (2) after each repair attempt is equal to or greater than 10,000 ppm.

(f) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(g) Documentation supporting the delay of repair of a valve in compliance with s. NR 664.1059 (3).

(h) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a hazardous waste management unit shutdown.

(i) The expected date of successful repair of the leak if a leak is not repaired within 15 calendar days.

(j) The date of successful repair of the leak.

(5) Record design documentation and monitoring, operating and inspection information for each closed−vent system and control device required to comply with s. NR 664.1060 and keep them up−to−date in the facility operating record as specified in s. NR 664.1035 (3). Design documentation is specified in s. NR 664.1035 (3) (a) and (b) and monitoring, operating and inspection information in s. NR 664.1035 (3) (c) to (h).

(6) For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser

or carbon adsorption system, the department shall specify the appropriate recordkeeping requirements.

(7) Record all of the following information pertaining to all equipment subject to ss. NR 664.1052 to 664.1060 in a log that is kept in the facility operating record:

(a) A list of identification numbers for equipment (except welded fittings) subject to this subchapter.

(b) 1. A list of identification numbers for equipment that the owner or operator elects to designate for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, under ss. NR 664.1052 (5), 664.1053 (9) and 664.1057 (6).

2. The designation of this equipment as subject to s. NR 664.1052 (5), 664.1053 (9) or 664.1057 (6), signed by the owner or operator.

(c) A list of equipment identification numbers for pressure relief devices required to comply with s. NR 664.1054 (1).

(d) 1. The dates of each compliance test required in ss. NR 664.1052 (5), 664.1053 (9), 664.1054 and 664.1057 (6).

2. The background level measured during each compliance test.

3. The maximum instrument reading measured at the equipment during each compliance test.

(e) A list of identification numbers for equipment in vacuum service.

(f) Identification, either by list or location (area or group) of equipment that contains or contacts hazardous waste with an organic concentration of at least 10% by weight for less than 300 hours per calendar year.

(8) Record all of the following information pertaining to all valves subject to s. NR 664.1057 (7) and (8) in a log that is kept in the facility operating record:

(a) A list of identification numbers for valves that are designated as unsafe to monitor, an explanation for each valve stating why the valve is unsafe to monitor and the plan for monitoring each valve.

(b) A list of identification numbers for valves that are designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor and the planned schedule for monitoring each valve.

(9) Record all of the following information in the facility operating record for valves complying with s. NR 664.1062:

(a) A schedule of monitoring.

(b) The percent of valves found leaking during each monitoring period.

(10) Record all of the following information in a log that is kept in the facility operating record:

(a) Criteria required in ss. NR 664.1052 (4) (e) 2. and 664.1053 (5) (b) and an explanation of the design criteria.

(b) Any changes to these criteria and the reasons for the changes.

(11) Record all of the following information in a log that is kept in the facility operating record for use in determining exemptions in the applicability section of this subchapter and other specific subchapters:

(a) An analysis determining the design capacity of the hazardous waste management unit.

(b) A statement listing the hazardous waste influent to and effluent from each hazardous waste management unit subject to ss. NR 664.1052 to 664.1060 and an analysis determining whether these hazardous wastes are heavy liquids.

(c) An up−to−date analysis and the supporting information and data used to determine whether or not equipment is subject to ss. NR 664.1052 to 664.1060. The record shall include supporting documentation as required by s. NR 664.1063 (4) (c) when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used. If the owner or operator takes any action (e.g., changing the process that produced the waste) that could result in an increase in the total organic content of the waste contained in or contacted by equipment determined not to be subject to ss. NR 664.1052 to 664.1060, then a new determination is required.

(12) Keep records of the equipment leak information required by sub. (4) and the operating information required by sub. (5) for at least 3 years.

(13) The owner or operator of a facility with equipment that is subject to this subchapter and to 40 CFR part 60, 61 or 63, or to corresponding provisions of ch. NR 440, subch. III of ch. NR 446 and chs. NR 447 to 469, may elect to determine compliance with this subchapter either by documentation pursuant to this section, or by documentation of compliance with 40 CFR part 60, 61 or 63, or with corresponding provisions of ch. NR 440, subch. III of ch. NR 446 and chs. NR 447 to 469, pursuant to the relevant provisions of 40 CFR part 60, 61 or 63, or the corresponding provisions of ch. NR 440, subch. III of ch. NR 446 and chs. NR 447 to 469. Keep the documentation of compliance with 40 CFR part 60, 61 or 63, or corresponding provisions of ch. NR 440, subch. III of ch. NR 446 and chs. NR 447 to 469, with or make it readily available with the facility operating record.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1065 Reporting requirements. (1) Owners and operators subject to this subchapter shall submit a semiannual report to the department by dates specified by the department. The report shall include all of the following information:

(a) The EPA identification number, name and address of the facility.

(b) For each month during the semiannual reporting period:

1. The equipment identification number of each valve for which a leak was not repaired as required in s. NR 664.1057 (4).

2. The equipment identification number of each pump for which a leak was not repaired as required in s. NR 664.1052 (3) and (4) (f).

3. The equipment identification number of each compressor for which a leak was not repaired as required in s. NR 664.1053 (7).

(c) Dates of hazardous waste management unit shutdowns that occurred within the semiannual reporting period.

(d) For each month during the semiannual reporting period, dates when the control device installed as required by s. NR 664.1052, 664.1053, 664.1054 or 664.1055 exceeded or operated outside of the design specifications as defined in s. NR 664.1064 (5) and as indicated by the control device monitoring required by s. NR 664.1060 and was not corrected within 24 hours, the duration and cause of each exceedance and any corrective measures taken.

(2) If, during the semiannual reporting period, leaks from valves, pumps and compressors are repaired as required in ss. NR 664.1057 (4), 664.1052 (3) and (4) (f), and 664.1053 (7), respectively, and the control device does not exceed or operate outside of the design specifications as defined in s. NR 664.1064 (5) for more than 24 hours, a report to the department is not required.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter CC — Air Emission Standards for Tanks, Surface Impoundments and Containers

NR 664.1080 Applicability. (1) This subchapter applies to owners and operators of all facilities that treat, store or dispose of hazardous waste in containers, tanks or surface impoundments subject to subch. I, J or K except as s. NR 664.0001 and sub. (2) provide otherwise.

(2) This subchapter does not apply to the following waste management units at the facility:

(a) A waste management unit that holds hazardous waste placed in the unit before June 1, 1998, and in which no hazardous waste is added to the unit on or after June 1, 1998.

(b) A container that has a design capacity less than or equal to 0.1 m^3.

(c) A tank in which an owner or operator has stopped adding hazardous waste and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.

(d) A surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.

(e) A waste management unit that is used solely for on−site treatment or storage of hazardous waste that is placed in the unit as a result of implementing remedial activities required under the corrective action authorities of 42 USC 6924(u) or (v), 6928(h) or 9601 to 9675, similar federal authorities or s. 291.37 or 292.11, Stats.

(f) A waste management unit that is used solely for the management of radioactive mixed waste according to all applicable regulations under the authority of 42 USC 2011 to 2297 and 10101 to 10270.

Note: The U.S. code (USC) cites in this paragraph are also known as the federal atomic energy act and the federal nuclear waste policy act, respectively.

(g) A hazardous waste management unit that the owner or operator certifies is equipped with and operating air emission controls according to 40 CFR part 60, 61 or 63, or to corresponding provisions of ch. NR 440, subch. III of ch. NR 446 and chs. NR 447 to 469. For the purpose of complying with this paragraph, a tank for which the air emission control includes an enclosure, as opposed to a cover, shall be in compliance with the enclosure and control device requirements of s. NR 664.1084 (9), except as provided in s. NR 664.1082 (3) (e).

(h) A tank that has a process vent as defined in s. NR 664.1031.

(3) For the owner and operator of a facility subject to this subchapter who received an operating license under s. 291.25, Stats., prior to June 1, 1998, the requirements of this subchapter shall be incorporated into the license when it is reissued according to s. NR 670.415 or reviewed according to s. NR 670.050 (4). Until the date when the license is reissued according to s. NR 670.415 or reviewed according to s. NR 670.050 (4), the owner and operator is subject to subch. CC of ch. NR 665.

(4) The requirements of this subchapter, except for the recordkeeping requirements in s. NR 664.1089 (9), are administratively stayed for a tank or a container used to manage hazardous waste generated by organic peroxide manufacturing and its associated laboratory operations when the owner or operator of the unit meets all of the following conditions:

(a) The owner or operator identifies that the tank or container receives hazardous waste generated by an organic peroxide manufacturing process producing more than one functional family of organic peroxides or multiple organic peroxides within one functional family, that one or more of these organic peroxides could potentially undergo self−accelerating thermal decomposition at or below ambient temperatures and that organic peroxides are the predominant products manufactured by the process. For the purpose of meeting the conditions of this subsection, "organic peroxide" means an organic compound that contains the bivalent —O—O— structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

(b) The owner or operator prepares documentation, according to s. NR 664.1089 (9), explaining why an undue safety hazard would be created if air emission controls specified in ss. NR 664.1084 to 664.1087 are installed and operated on the tanks and containers used at the facility to manage the hazardous waste generated by the organic peroxide manufacturing process or processes meeting par. (a).

(c) The owner or operator notifies the department in writing that hazardous waste generated by an organic peroxide manufacturing process or processes meeting par. (a) are managed at the facility in tanks or containers meeting par. (b). The notification shall state the name and address of the facility and be signed and dated by an authorized representative of the facility owner or operator.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1081 Definitions. As used in this subchapter, all terms shall have the meaning given them in s. NR 665.1081, ch. 291, Stats., and chs. NR 660 to 666.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1082 Standards: general. (1) This section applies to the management of hazardous waste in tanks, surface impoundments and containers subject to this subchapter.

(2) The owner or operator shall control air pollutant emissions from each hazardous waste management unit according to the standards in ss. NR 664.1084 to 664.1087, as applicable to the hazardous waste management unit, except as provided in sub. (3).

(3) A tank, surface impoundment or container is exempt from the standards in ss. NR 664.1084 to 664.1087, as applicable, provided that the waste management unit is one of the following:

(a) A tank, surface impoundment or container for which all hazardous waste entering the unit has an average VO concentration at the point of waste origination of less than 500 parts per million by weight (ppmw). Determine the average VO concentration using the procedures in s. NR 664.1083 (1). Review and update, as necessary, this determination at least once every 12 months following the date of the initial determination for the hazardous waste streams entering the unit.

(b) A tank, surface impoundment or container for which the organic content of all the hazardous waste entering the waste management unit has been reduced by an organic destruction or removal process that achieves any one of the following conditions:

1. A process that removes or destroys the organics contained in the hazardous waste to a level such that the average VO concentration of the hazardous waste at the point of waste treatment is less than the exit concentration limit (C_t) established for the process. Determine the average VO concentration of the hazardous waste at the point of waste treatment and the exit concentration limit for the process using the procedures in s. NR 664.1083 (2).

2. A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than 95%, and the average VO concentration of the hazardous waste at the point of waste treatment is less than 100 ppmw. Determine the organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste treatment using the procedures in s. NR 664.1083 (2).

3. A process that removes or destroys the organics contained in the hazardous waste to a level such that the actual organic mass removal rate (MR) for the process is equal to or greater than the required organic mass removal rate (RMR) established for the process. Determine the required organic mass removal rate and the actual organic mass removal rate for the process using the procedures in s. NR 664.1083 (2).

4. A biological process that destroys or degrades the organics contained in the hazardous waste, such that any of the following conditions is met:

a. The organic reduction efficiency (R) for the process is equal to or greater than 95%, and the organic biodegradation efficiency (R_{bio}) for the process is equal to or greater than 95%. Determine the organic reduction efficiency and the organic biodegrada-

tion efficiency for the process using the procedures in s. NR 664.1083 (2).

b. The total actual organic mass biodegradation rate (MR_{bio}) for all hazardous waste treated by the process is equal to or greater than the required organic mass removal rate (RMR). Determine the required organic mass removal rate and the actual organic mass biodegradation rate for the process using the procedures in s. NR 664.1083 (2).

5. A process that removes or destroys the organics contained in the hazardous waste and meets all of the following conditions:

a. From the point of waste origination through the point where the hazardous waste enters the treatment process, the hazardous waste is managed continuously in waste management units which use air emission controls according to the standards in ss. NR 664.1084 to 664.1087, as applicable to the waste management unit.

b. From the point of waste origination through the point where the hazardous waste enters the treatment process, any transfer of the hazardous waste is accomplished through continuous hard−piping or other closed system transfer that does not allow exposure of the waste to the atmosphere. A drain system that meets 40 CFR part 63, subpart RR──National Emission Standards for Individual Drain Systems is a closed system.

c. The average VO concentration of the hazardous waste at the point of waste treatment is less than the lowest average VO concentration at the point of waste origination determined for each of the individual waste streams entering the process or 500 ppmw, whichever value is lower. Determine the average VO concentration of each individual waste stream at the point of waste origination using the procedures in s. NR 664.1083 (1). Determine the average VO concentration of the hazardous waste at the point of waste treatment using the procedures in s. NR 664.1083 (2).

6. A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than 95% and the owner or operator certifies that the average VO concentration at the point of waste origination for each of the individual waste streams entering the process is less than 10,000 ppmw. Determine the organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste origination using the procedures in s. NR 664.1083 (2) and (1), respectively.

7. A hazardous waste incinerator for which any of the following conditions has been met:

a. The owner or operator has been issued an operating license under ch. NR 670 which implements subch. O.

b. The owner or operator has designed and operates the incinerator according to the interim license requirements of subch. O of ch. NR 665.

8. A boiler or industrial furnace for which any of the following conditions has been met:

a. The owner or operator has been issued an operating license under ch. NR 670 which implements subch. H of ch. NR 666.

b. The owner or operator has designed and operates the boiler or industrial furnace according to the interim license requirements of subch. H of ch. NR 666.

9. For the purpose of determining the performance of an organic destruction or removal process according to subds. 1. to 6., the owner or operator shall account for VO concentrations determined to be below the limit of detection of the analytical method using the following VO concentration:

a. If Method 25D in appendix A of 40 CFR part 60, incorporated by reference in s. NR 660.11, is used for the analysis, one−half the blank value determined in the method at section 4.4, or a value of 25 ppmw, whichever is less.

b. If any other analytical method is used, one−half the sum of the limits of detection established for each organic constituent in the waste that has a Henry's law constant value at least 0.1 mole−fraction−in−the−gas−phase/mole−fraction−in−the−liquid−phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram−mole/m^3] at 25°C.

(c) A tank or surface impoundment used for biological treatment of hazardous waste according to par. (b) 4.

(d) A tank, surface impoundment or container for which all hazardous waste placed in the unit meets any of the following conditions:

1. The waste meets the numerical concentration limits for organic hazardous constituents, applicable to the hazardous waste, as specified in ch. NR 668──Hazardous Waste Land Disposal Restrictions under Table "Treatment Standards for Hazardous Waste" in s. NR 668.40.

2. The organic hazardous constituents in the waste have been treated by the treatment technology established by the department for the waste in s. NR 668.42 (1), or have been removed or destroyed by an equivalent method of treatment approved by EPA pursuant to 40 CFR 268.42(b).

(e) A tank used for bulk feed of hazardous waste to a waste incinerator and all of the following conditions are met:

1. The tank is located inside an enclosure vented to a control device that is designed and operated according to all applicable requirements in 40 CFR part 61, subpart FF──National Emission Standards for Benzene Waste Operations, for a facility at which the total annual benzene quantity from the facility waste is equal to or greater than 10 megagrams per year.

2. The enclosure and control device serving the tank were installed and began operation prior to June 1, 1998.

3. The enclosure is designed and operated according to the criteria for a permanent total enclosure in Method 204──"Criteria for and Verification of a Permanent or Temporary Total Enclosure" of appendix M of 40 CFR part 51, incorporated by reference in s. NR 660.11. The enclosure may have permanent or temporary openings to allow worker access, passage of material into or out of the enclosure by conveyor, vehicles or other mechanical or electrical equipment or to direct air flow into the enclosure. Perform the verification procedure for the enclosure in Section 8 of Method 204 annually.

(4) The department may at any time perform or request that the owner or operator perform a waste determination for a hazardous waste managed in a tank, surface impoundment or container exempted from using air emission controls under this section as follows:

(a) Perform the waste determination for average VO concentration of a hazardous waste at the point of waste origination using direct measurement according to the applicable requirements of s. NR 664.1083 (1). Perform the waste determination for a hazardous waste at the point of waste treatment according to the applicable requirements of s. NR 664.1083 (2).

(b) In performing a waste determination pursuant to par. (a), conduct the sample preparation and analysis as follows:

1. According to the method used by the owner or operator to perform the waste analysis, except in the case specified in subd. 2.

2. If the department determines that the method used by the owner or operator was not appropriate for the hazardous waste managed in the tank, surface impoundment or container, then the department may choose an appropriate method.

(c) In a case when the owner or operator is requested to perform the waste determination, the department may elect to have an authorized representative observe the collection of the hazardous waste samples used for the analysis.

(d) In a case when the results of the waste determination performed or requested by the department do not agree with the results of a waste determination performed by the owner or opera-

tor using knowledge of the waste, use the results of the waste determination performed according to par. (a) to establish compliance with this subchapter.

(e) In a case when the owner or operator has used an averaging period greater than one hour for determining the average VO concentration of a hazardous waste at the point of waste origination, the department may elect to establish compliance with this subchapter by performing, or requesting that the owner or operator perform, a waste determination using direct measurement based on waste samples collected within a one−hour period as follows:

1. Determine the average VO concentration of the hazardous waste at the point of waste origination by direct measurement according to s. NR 664.1083 (1).

2. Results of the waste determination performed or requested by the department showing that the average VO concentration of the hazardous waste at the point of waste origination is equal to or greater than 500 ppmw shall constitute noncompliance with this subchapter except in a case provided for in subd. 3.

3. For the case when the average VO concentration of the hazardous waste at the point of waste origination previously has been determined by the owner or operator using an averaging period greater than one hour to be less than 500 ppmw but because of normal operating process variations the VO concentration of the hazardous waste determined by direct measurement for any given one−hour period may be equal to or greater than 500 ppmw, the department shall consider information that was used by the owner or operator to determine the average VO concentration of the hazardous waste (e.g., test results, measurements, calculations and other documentation) and recorded in the facility records according to ss. NR 664.1083 (1) and 664.1089 together with the results of the waste determination performed or requested by the department in establishing compliance with this subchapter.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1083 Waste determination procedures. (1) PROCEDURE TO DETERMINE AVERAGE VO CONCENTRATION OF A HAZARDOUS WASTE AT THE POINT OF WASTE ORIGINATION. (a) An owner or operator shall determine the average VO concentration at the point of waste origination for each hazardous waste placed in a waste management unit exempted under s. NR 664.1082 (3) (a) from using air emission controls according to the standards in ss. NR 664.1084 to 664.1087, as applicable to the waste management unit. Make the determinations according to all of the following:

1. Make an initial determination of the average VO concentration of the waste stream before the first time any portion of the material in the hazardous waste stream is placed in a waste management unit exempted under s. NR 664.1082 (3) (a) from using air emission controls, and thereafter make an initial determination of the average VO concentration of the waste stream for each averaging period that a hazardous waste is managed in the unit.

2. Perform a new waste determination whenever changes to the source generating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level that is equal to or greater than the applicable VO concentration limits in s. NR 664.1082.

(b) For a waste determination that is required by par. (a), determine the average VO concentration of a hazardous waste at the point of waste origination according to the procedures in s. NR 665.1084 (1) (b) to (d).

(2) PROCEDURES FOR TREATED HAZARDOUS WASTE. (a) An owner or operator shall perform the applicable waste determinations for each treated hazardous waste placed in waste management units exempted under s. NR 664.1082 (3) (b) 1. to 6. from using air emission controls according to standards in ss. NR 664.1084 to 664.1087, as applicable to the waste management unit. Make the determinations according to all of the following:

1. Make an initial determination of the average VO concentration of the waste stream before the first time any portion of the material in the treated waste stream is placed in the exempt waste management unit, and thereafter update the information used for the waste determination at least once every 12 months following the date of the initial waste determination.

2. Perform a new waste determination whenever changes to the process generating or treating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level such that the applicable treatment conditions specified in s. NR 664.1082 (3) (b) are not achieved.

(b) Perform the waste determination for a treated hazardous waste according to the procedures in s. NR 665.1084 (2) (b) to (i), as applicable to the treated hazardous waste.

(3) PROCEDURE TO DETERMINE THE MAXIMUM ORGANIC VAPOR PRESSURE OF A HAZARDOUS WASTE IN A TANK. (a) An owner or operator shall determine the maximum organic vapor pressure for each hazardous waste placed in a tank using Tank Level 1 controls according to standards in s. NR 664.1084 (3).

(b) The maximum organic vapor pressure of the hazardous waste may be determined according to the procedures in s. NR 665.1084 (3) (b) to (d).

(4) PROCEDURE FOR DETERMINING NO DETECTABLE ORGANIC EMISSIONS. For the purpose of complying with this subchapter, an owner or operator shall determine no detectable organic emissions according to the procedures in s. NR 665.1084 (4).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1084 Standards: tanks. (1) This section applies to the control of air pollutant emissions from tanks for which s. NR 664.1082 (2) references the use of this section for the air emission control.

(2) The owner or operator shall control air pollutant emissions from each tank subject to this section according to one of the following requirements as applicable:

(a) For a tank that manages hazardous waste that meets all of the following conditions, control air pollutant emissions from the tank according to the Tank Level 1 controls specified in sub. (3) or the Tank Level 2 controls specified in sub. (4):

1. The hazardous waste in the tank has a maximum organic vapor pressure which is less than the maximum organic vapor pressure limit for the tank's design capacity category as follows:

a. For a tank design capacity equal to or greater than 151 m^3, the maximum organic vapor pressure limit for the tank is 5.2 kPa.

b. For a tank design capacity equal to or greater than 75 m^3 but less than 151 m^3, the maximum organic vapor pressure limit for the tank is 27.6 kPa.

c. For a tank design capacity less than 75 m^3, the maximum organic vapor pressure limit for the tank is 76.6 kPa.

2. The hazardous waste in the tank is not heated to a temperature that is greater than the temperature at which the maximum organic vapor pressure of the hazardous waste is determined for the purpose of complying with subd. 1.

3. The hazardous waste in the tank is not treated using a waste stabilization process, as defined in s. NR 665.1081.

(b) For a tank that manages hazardous waste that does not meet all of the conditions in par. (a) 1. to 3., control air pollutant emissions from the tank using Tank Level 2 controls according to sub. (4). Examples of tanks required to use Tank Level 2 controls include a tank used for a waste stabilization process, and a tank for which the hazardous waste in the tank has a maximum organic vapor pressure that is equal to or greater than the maximum organic vapor pressure limit for the tank's design capacity category as specified in par. (a) 1.

(3) Owners and operators controlling air pollutant emissions from a tank using Tank Level 1 controls shall meet all of the following requirements:

(a) Determine the maximum organic vapor pressure for a hazardous waste to be managed in the tank using Tank Level 1 controls before the first time the hazardous waste is placed in the tank. Determine the maximum organic vapor pressure using the procedures in s. NR 664.1083 (3). Thereafter, perform a new determination whenever changes to the hazardous waste managed in the tank could potentially cause the maximum organic vapor pressure to increase to a level that is equal to or greater than the maximum organic vapor pressure limit for the tank design capacity category specified in sub. (2) (a) 1., as applicable to the tank.

(b) Equip the tank with a fixed roof designed to meet all of the following specifications:

1. Design the fixed roof and its closure devices to form a continuous barrier over the entire surface area of the hazardous waste in the tank. The fixed roof may be a separate cover installed on the tank (e.g., a removable cover mounted on an open−top tank) or may be an integral part of the tank structural design (e.g., a horizontal cylindrical tank equipped with a hatch).

2. Install the fixed roof in a manner such that there are no visible cracks, holes, gaps or other open spaces between roof section joints or between the interface of the roof edge and the tank wall.

3. Each opening in the fixed roof, and any manifold system associated with the fixed roof, shall be any of the following:

a. Equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps or other open spaces in the closure device or between the perimeter of the opening and the closure device.

b. Connected by a closed−vent system that is vented to a control device. The control device shall remove or destroy organics in the vent stream, and shall be operating whenever hazardous waste is managed in the tank, except as follows:

1) During periods when it is necessary to provide access to the tank for performing the activities of subd. 3. b.2), venting of the vapor headspace underneath the fixed roof to the control device is not required, opening of closure devices is allowed and removal of the fixed roof is allowed. After completing the activity, promptly secure the closure device in the closed position or reinstall the cover, as applicable, and resume operation of the control device.

2) During periods of routine inspection, maintenance or other activities needed for normal operations, and for removal of accumulated sludge or other residues from the bottom of the tank.

4. Make the fixed roof and its closure devices of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to consider when selecting the materials for and designing the fixed roof and closure devices shall include organic vapor permeability, the effects of any contact with the hazardous waste or its vapors managed in the tank, the effects of outdoor exposure to wind, moisture and sunlight and the operating practices used for the tank on which the fixed roof is installed.

(c) Whenever a hazardous waste is in the tank, install the fixed roof with each closure device secured in the closed position except as follows:

1. Opening of closure devices or removal of the fixed roof is allowed at the following times:

a. To provide access to the tank for performing routine inspection, maintenance or other activities needed for normal operations. Examples of those activities include those times when a worker needs to open a port to sample the liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. After completing the activity, promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.

b. To remove accumulated sludge or other residues from the bottom of the tank.

2. Opening of a spring−loaded pressure−vacuum relief valve, conservation vent or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the tank internal pressure according to the tank design specifications. Design the device to operate with no detectable organic emissions when the device is secured in the closed position. Establish the settings at which the device opens such that the device remains in the closed position whenever the tank internal pressure is within the internal pressure operating range determined by the owner or operator based on the tank manufacturer recommendations, applicable rules, fire protection and prevention codes, standard engineering codes and practices or other requirements for the safe handling of flammable, ignitable, explosive, reactive or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the tank internal pressure exceeds the internal pressure operating range for the tank as a result of loading operations or diurnal ambient temperature fluctuations.

3. Opening of a safety device, as defined in s. NR 665.1081, is allowed at any time conditions require doing so to avoid an unsafe condition.

(d) Inspect the air emission control equipment according to all of the following requirements:

1. Visually inspect the fixed roof and its closure devices to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes or gaps in the roof sections or between the roof and the tank wall, broken, cracked or otherwise damaged seals or gaskets on closure devices and broken or missing hatches, access covers, caps or other closure devices.

2. Perform an initial inspection of the fixed roof and its closure devices on or before the date that the tank becomes subject to this section. Thereafter, perform the inspections at least once every year except under the special conditions provided for in sub. (12).

3. In the event that a defect is detected, repair the defect according to sub. (11).

4. Maintain a record of the inspection according to s. NR 664.1089 (2).

(4) Owners and operators controlling air pollutant emissions from a tank using Tank Level 2 controls shall use one of the following tanks:

(a) A fixed−roof tank equipped with an internal floating roof according to sub. (5).

(b) A tank equipped with an external floating roof according to sub. (6).

(c) A tank vented through a closed−vent system to a control device according to sub. (7).

(d) A pressure tank designed and operated according to sub. (8).

(e) A tank located inside an enclosure that is vented through a closed−vent system to an enclosed combustion control device according to sub. (9).

(5) The owner or operator who controls air pollutant emissions from a tank using a fixed roof with an internal floating roof shall meet pars. (a) to (c).

(a) Equip the tank with a fixed roof and an internal floating roof according to all of the following requirements:

1. Design the internal floating roof to float on the liquid surface except when the floating roof must be supported by the leg supports.

2. Equip the internal floating roof with a continuous seal between the wall of the tank and the floating roof edge that meets any of the following requirements:

a. A single continuous seal that is either a liquid−mounted seal or a metallic shoe seal, as defined in s. NR 665.1081.

b. Two continuous seals mounted one above the other. The lower seal may be a vapor−mounted seal.

3. The internal floating roof shall meet all of the following specifications:

a. Each opening in a non−contact internal floating roof, except for automatic bleeder vents (vacuum breaker vents) and the rim space vents, provides a projection below the liquid surface.

b. Each opening in the internal floating roof is equipped with a gasketed cover or a gasketed lid except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells and stub drains.

c. Each penetration of the internal floating roof for the purpose of sampling has a slit fabric cover that covers at least 90% of the opening.

d. Each automatic bleeder vent and rim space vent is gasketed.

e. Each penetration of the internal floating roof that allows for passage of a ladder has a gasketed sliding cover.

f. Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof has a flexible fabric sleeve seal or a gasketed sliding cover.

(b) Operate the tank according to all of the following requirements:

1. When the floating roof is resting on the leg supports, the process of filling, emptying or refilling shall be continuous and shall be completed as soon as practical.

2. Set automatic bleeder vents to set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

3. Prior to filling the tank, bolt or fasten closed (i.e., no visible gaps) each cover, access hatch, gauge float well or lid on any opening in the internal floating roof. Set rim space vents to open only when the internal floating roof is not floating or when the pressure beneath the rim exceeds the manufacturer's recommended setting.

(c) Inspect the internal floating roof according to all of the following requirements:

1. Visually inspect the floating roof and its closure devices to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, the internal floating roof is not floating on the surface of the liquid inside the tank, liquid has accumulated on top of the internal floating roof, any portion of the roof seals have detached from the roof rim, holes, tears or other openings are visible in the seal fabric, the gaskets no longer close off the hazardous waste surface from the atmosphere or the slotted membrane has more than 10% open area.

2. Inspect the internal floating roof components as follows, except as provided in subd. 3.:

a. Visually inspect the internal floating roof components through openings on the fixed−roof (e.g., manholes and roof hatches) at least once every 12 months after initial fill.

b. Visually inspect the internal floating roof, primary seal, secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the tank is emptied and degassed and at least every 10 years.

3. As an alternative to performing the inspections in subd. 2. for an internal floating roof equipped with 2 continuous seals mounted one above the other, visually inspect the internal floating roof, primary and secondary seals, gaskets, slotted membranes and sleeve seals (if any) each time the tank is emptied and degassed and at least every 5 years.

4. Prior to each inspection required by subd. 2. or 3., notify the department in advance of each inspection to provide the department with the opportunity to have an observer present during the inspection. Notify the department of the date and location of the inspection as follows:

a. Prior to each visual inspection of an internal floating roof in a tank that has been emptied and degassed, prepare and send written notification so that the department receives it at least 30 calendar days before refilling the tank, except when an inspection is not planned as provided for in subd. 4. b.

b. When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, notify the department as soon as possible, but no later than 7 calendar days before refilling the tank. Make this notification by telephone and immediately follow with a written explanation for why the inspection is unplanned. Alternatively, send written notification, including the explanation for the unplanned inspection, so that the department receives it at least 7 calendar days before refilling the tank.

5. In the event that a defect is detected, repair the defect according to sub. (11).

6. Maintain a record of the inspection according to the requirements in s. NR 664.1089 (2).

(d) Safety devices, as defined in s. NR 665.1081, may be installed and operated as necessary on any tank complying with this subsection.

(6) The owner or operator who controls air pollutant emissions from a tank using an external floating roof shall meet pars. (a) to (c).

(a) Design the external floating roof according to all of the following requirements:

1. Design the external floating roof to float on the liquid surface except when the floating roof must be supported by the leg supports.

2. Equip the floating roof with 2 continuous seals, one above the other, between the wall of the tank and the roof edge. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

a. The primary seal shall be a liquid−mounted seal or a metallic shoe seal, as defined in s. NR 665.1081. The total area of the gaps between the tank wall and the primary seal may not exceed 212 square centimeters (cm^2) per meter of tank diameter, and the width of any portion of these gaps may not exceed 3.8 centimeters (cm). If a metallic shoe seal is used for the primary seal, design the metallic shoe seal so that one end extends into the liquid in the tank and the other end extends a vertical distance of at least 61 centimeters above the liquid surface.

b. Mount the secondary seal above the primary seal and cover the annular space between the floating roof and the wall of the tank. The total area of the gaps between the tank wall and the secondary seal may not exceed 21.2 square centimeters (cm^2) per meter of tank diameter, and the width of any portion of these gaps may not exceed 1.3 centimeters (cm).

3. The external floating roof shall meet all of the following specifications:

a. Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in a non−contact external floating roof shall project below the liquid surface.

b. Except for automatic bleeder vents, rim space vents, roof drains and leg sleeves, equip each opening in the roof with a gasketed cover, seal or lid.

c. Equip each access hatch and each gauge float well with a cover designed to be bolted or fastened when the cover is secured in the closed position.

d. Equip each automatic bleeder vent and each rim space vent with a gasket.

e. Equip each roof drain that empties into the liquid managed in the tank with a slotted membrane fabric cover that covers at least 90% of the area of the opening.

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f. Equip each unslotted and slotted guide pole well with a gasketed sliding cover or a flexible fabric sleeve seal.

g. Equip each unslotted guide pole with a gasketed cap on the end of the pole.

h. Equip each slotted guide pole with a gasketed float or other device which closes off the liquid surface from the atmosphere.

i. Equip each gauge hatch and each sample well with a gasketed cover.

(b) Operate the tank according to all of the following requirements:

1. When the floating roof is resting on the leg supports, the process of filling, emptying or refilling shall be continuous and shall be completed as soon as practical.

2. Except for automatic bleeder vents, rim space vents, roof drains and leg sleeves, secure and maintain each opening in the roof in a closed position at all times except when the closure device must be open for access.

3. Bolt or fasten covers on each access hatch and each gauge float well when secured in the closed position.

4. Set closed automatic bleeder vents at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

5. Set to open rim space vents only at those times that the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

6. Secure the cap on the end of each unslotted guide pole in the closed position at all times except when measuring the level of the liquid in the tank or collecting samples of the liquid.

7. Secure the cover on each gauge hatch or sample well in the closed position at all times except when the hatch or well must be opened for access.

8. Both the primary seal and the secondary seal shall completely cover the annular space between the external floating roof and the wall of the tank in a continuous fashion except during inspections.

(c) Inspect the external floating roof according to all of the following procedures:

1. Measure the external floating roof seal gaps according to all of the following requirements:

a. Perform measurements of gaps between the tank wall and the primary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every 5 years.

b. Perform measurements of gaps between the tank wall and the secondary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every year.

c. If a tank ceases to hold hazardous waste for a period of one year or more, subsequent introduction of hazardous waste into the tank is an initial operation for the purposes of subd. 1. a. and b.

d. Determine the total surface area of gaps in the primary seal and in the secondary seal individually using the following procedure:

1) Perform the seal gap measurements at one or more floating roof levels when the roof is floating off the roof supports.

2) Measure seal gaps, if any, around the entire perimeter of the floating roof in each place where a 0.32−centimeter (cm) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the tank and measure the circumferential distance of each location.

3) For a seal gap measured under this paragraph, determine the gap surface area by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each width by its respective circumferential distance.

4) Calculate the total gap area by adding the gap surface areas determined for each identified gap location for the primary seal and the secondary seal individually, and then dividing the sum for each seal type by the nominal diameter of the tank. Then compare these total gap areas per unit of tank diameter for the primary seal and secondary seal to the respective standards for the seal type in par. (a) 2.

e. In the event that the seal gap measurements do not conform to the specifications in par. (a) 2., repair the defect according to sub. (11).

f. Maintain a record of the inspection according to s. NR 664.1089 (2).

2. Visually inspect the external floating roof according to all of the following requirements:

a. Visually inspect the floating roof and its closure devices to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, holes, tears or other openings in the rim seal or seal fabric of the floating roof, a 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.

b. Perform an initial inspection of the external floating roof and its closure devices on or before the date that the tank becomes subject to this section. Thereafter, perform the inspections at least once every year except for the special conditions provided for in sub. (12).

c. In the event that a defect is detected, repair the defect according to sub. (11).

d. Maintain a record of the inspection according to s. NR 664.1089 (2).

3. Prior to each inspection required by subd. 1. or 2., notify the department in advance of each inspection to provide the department with the opportunity to have an observer present during the inspection. Notify the department of the date and location of the inspection as follows:

a. Prior to each inspection to measure external floating roof seal gaps as required under subd. 1., prepare and send written notification so that the department receives it at least 30 calendar days before the date the measurements are scheduled to be performed.

b. Prior to each visual inspection of an external floating roof in a tank that has been emptied and degassed, prepare and send written notification so that the department receives it at least 30 calendar days before refilling the tank except when an inspection is not planned as provided for in subd. 3. c.

c. When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, notify the department as soon as possible, but no later than 7 calendar days before refilling the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that the department receives it at least 7 calendar days before refilling the tank.

(d) Safety devices, as defined in s. NR 665.1081, may be installed and operated as necessary on any tank complying with this subsection.

(7) The owner or operator who controls air pollutant emissions from a tank by venting the tank to a control device shall meet all of the following requirements:

(a) Cover the tank with a fixed roof and vent the tank directly through a closed−vent system to a control device according to all of the following requirements:

1. Design the fixed roof and its closure devices to form a continuous barrier over the entire surface area of the liquid in the tank.

2. Equip each opening in the fixed roof not vented to the control device with a closure device. If the pressure in the vapor headspace underneath the fixed roof is less than atmospheric pressure when the control device is operating, design the closure devices to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the fixed roof is equal to or greater than atmospheric pressure when the control device is operating, design the closure device to operate with no detectable organic emissions.

3. Make the fixed roof and its closure devices of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to consider when selecting the materials for and designing the fixed roof and closure devices shall include organic vapor permeability, the effects of any contact with the liquid and its vapor managed in the tank, the effects of outdoor exposure to wind, moisture and sunlight and the operating practices used for the tank on which the fixed roof is installed.

4. Design and operate the closed−vent system and control device according to s. NR 664.1087.

(b) Whenever a hazardous waste is in the tank, install the fixed roof with each closure device secured in the closed position and the vapor headspace underneath the fixed roof vented to the control device except as follows:

1. Venting to the control device is not required, and opening of closure devices or removal of the fixed roof is allowed at the following times:

a. To provide access to the tank for performing routine inspection, maintenance or other activities needed for normal operations. Examples of those activities include those times when a worker needs to open a port to sample liquid in the tank or when a worker needs to open a hatch to maintain or repair equipment. After completing the activity, promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.

b. To remove accumulated sludge or other residues from the bottom of the tank.

2. Opening of a safety device, as defined in s. NR 665.1081, is allowed at any time conditions require doing so to avoid an unsafe condition.

(c) Inspect and monitor the air emission control equipment according to all of the following procedures:

1. Visually inspect the fixed roof and its closure devices to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes or gaps in the roof sections or between the roof and the tank wall, broken, cracked or otherwise damaged seals or gaskets on closure devices and broken or missing hatches, access covers, caps or other closure devices.

2. Inspect and monitor the closed−vent system and control device according to the procedures in s. NR 664.1087.

3. Perform an initial inspection of the air emission control equipment on or before the date that the tank becomes subject to this section. Thereafter, perform the inspections at least once every year except for the special conditions provided for in sub. (12).

4. In the event that a defect is detected, repair the defect according to sub. (11).

5. Maintain a record of the inspection according to s. NR 664.1089 (2).

(8) The owner or operator who controls air pollutant emissions by using a pressure tank shall meet all of the following requirements:

(a) Design the tank to not vent to the atmosphere as a result of compression of the vapor headspace in the tank during filling of the tank to its design capacity.

(b) Equip all tank openings with closure devices designed to operate with no detectable organic emissions determined using the procedure in s. NR 664.1083 (4).

(c) Whenever hazardous waste is in the tank, operate the tank as a closed system that does not vent to the atmosphere except under any of the following conditions:

1. At those times when opening of a safety device, as defined in s. NR 665.1081, is required to avoid an unsafe condition.

2. At those times when purging of inerts from the tank is required and the purge stream is routed to a closed−vent system and control device designed and operated according to s. NR 664.1087.

(9) The owner or operator who controls air pollutant emissions by using an enclosure vented through a closed−vent system to an enclosed combustion control device shall meet all of the following requirements:

(a) Locate the tank inside an enclosure. Design and operate the enclosure according to the criteria for a permanent total enclosure in Method 204—"Criteria for and Verification of a Permanent or Temporary Total Enclosure" of appendix M of 40 CFR part 51, incorporated by reference in s. NR 660.11. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles or other mechanical means; entry of permanent mechanical or electrical equipment or direct airflow into the enclosure. Perform the verification procedure for the enclosure in Section 8 of Method 204 initially when the enclosure is first installed and, thereafter, annually.

(b) Vent the enclosure through a closed−vent system to an enclosed combustion control device that is designed and operated according to the standards for a vapor incinerator, boiler or process heater in s. NR 664.1087.

(c) Safety devices, as defined in s. NR 665.1081, may be installed and operated as necessary on any enclosure, closed−vent system or control device used to comply with pars. (a) and (b).

(d) Inspect and monitor the closed−vent system and control device as specified in s. NR 664.1087.

(10) The owner or operator shall transfer hazardous waste to a tank subject to this section according to all of the following requirements:

(a) Except as provided in par. (b), transfer hazardous waste to the tank from another tank subject to this section or from a surface impoundment subject to s. NR 664.1085 using continuous hard−piping or another closed system that does not allow exposure of the hazardous waste to the atmosphere. For the purpose of complying with this paragraph, an individual drain system is a closed system when it meets 40 CFR part 63, subpart RR—National Emission Standards for Individual Drain Systems.

(b) Paragraph (a) does not apply when transferring a hazardous waste to the tank under any of the following conditions:

1. The hazardous waste meets the average VO concentration conditions in s. NR 664.1082 (3) (a) at the point of waste origination.

2. The hazardous waste has been treated by an organic destruction or removal process to meet s. NR 664.1082 (3) (b).

3. The hazardous waste meets s. NR 664.1082 (3) (d).

(11) The owner or operator shall repair each defect detected during an inspection performed according to sub. (3) (d), (5) (c), (6) (c) or (7) (c) as follows:

(a) Make first efforts at repair of the defect no later than 5 calendar days after detection, and complete the repair as soon as possible but no later than 45 calendar days after detection except as provided in par. (b).

(b) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires 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, repair the defect the next time the process or unit that is generating the hazardous waste managed in the tank stops operation. Complete repair of the defect before the process or unit resumes operation.

(12) Following the initial inspection and monitoring of the cover as required by the applicable provisions of this subchapter, subsequent inspection and monitoring may be performed at intervals longer than one year under the following special conditions:

(a) In the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous or other unsafe conditions, the owner or operator may designate a cover as an "unsafe to inspect and monitor cover" and comply with all of the following requirements:

1. Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.

2. Develop and implement a written plan and schedule to inspect and monitor the cover, using the procedures specified in the applicable section of this subchapter, as frequently as practicable during those times when a worker can safely access the cover.

(b) In the case when a tank is buried partially or entirely underground, inspect and monitor, as required by the applicable provisions of this section, only those portions of the tank cover and those connections to the tank (e.g., fill ports, access hatches, gauge wells, etc.) that are located on or above the ground surface.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1085 Standards: surface impoundments. **(1)** This section applies to the control of air pollutant emissions from surface impoundments for which s. NR 664.1082 (2) references the use of this section for the air emission control.

(2) The owner or operator shall control air pollutant emissions from the surface impoundment by installing and operating any of the following:

(a) A floating membrane cover according to sub. (3).

(b) A cover that is vented through a closed−vent system to a control device according to sub. (4).

(3) The owner or operator who controls air pollutant emissions from a surface impoundment using a floating membrane cover shall meet all of the following requirements:

(a) Equip the surface impoundment with a floating membrane cover designed to meet all of the following specifications:

1. Design the floating membrane cover to float on the liquid surface during normal operations and form a continuous barrier over the entire surface area of the liquid.

2. Fabricate the cover from a synthetic membrane material that is any of the following:

a. High density polyethylene (HDPE) with a thickness no less than 2.5 millimeters (mm).

b. A material or a composite of different materials determined to have both organic permeability properties that are equivalent to those of the material listed in subd. 2. a. and chemical and physical properties that maintain the material integrity for the intended service life of the material.

3. Install the cover in a manner such that there are no visible cracks, holes, gaps or other open spaces between cover section seams or between the interface of the cover edge and its foundation mountings.

4. Except as provided for in subd. 5., equip each opening in the floating membrane cover with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps or other open spaces in the closure device or between the perimeter of the cover opening and the closure device.

5. The floating membrane cover may be equipped with one or more emergency cover drains for removal of stormwater. Equip each emergency cover drain with a slotted membrane fabric cover that covers at least 90% of the area of the opening or a flexible fabric sleeve seal.

6. Make the closure devices of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the closure devices throughout their intended service life. Factors to consider when selecting the materials of construction and designing the cover and closure devices shall include organic vapor permeability, the effects of any contact with the liquid and its vapor managed in the surface impoundment, the effects of outdoor exposure to wind, moisture and sunlight and the operating practices used for the surface impoundment on which the floating membrane cover is installed.

(b) Whenever hazardous waste is in the surface impoundment, float the floating membrane cover on the liquid and secure each closure device in the closed position except as follows:

1. Opening of closure devices or removal of the cover is allowed at the following times:

a. To provide access to the surface impoundment for performing routine inspection, maintenance or other activities needed for normal operations. Examples of those activities include those times when a worker needs to open a port to sample the liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. After completing the activity, promptly replace the cover and secure the closure device in the closed position, as applicable.

b. To remove accumulated sludge or other residues from the bottom of the surface impoundment.

2. Opening of a safety device, as defined in s. NR 665.1081, is allowed at any time conditions require doing so to avoid an unsafe condition.

(c) Inspect the floating membrane cover according to all of the following procedures:

1. Visually inspect the floating membrane cover and its closure devices to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings; broken, cracked or otherwise damaged seals or gaskets on closure devices and broken or missing hatches, access covers, caps or other closure devices.

2. Perform an initial inspection of the floating membrane cover and its closure devices on or before the date that the surface impoundment becomes subject to this section. Thereafter, perform the inspections at least once every year except for the special conditions provided for in sub. (7).

3. In the event that a defect is detected, repair the defect according to sub. (6).

4. Maintain a record of the inspection according to s. NR 664.1089 (3).

(4) The owner or operator who controls air pollutant emissions from a surface impoundment using a cover vented to a control device shall meet all of the following requirements:

(a) Cover the surface impoundment and directly vent it through a closed−vent system to a control device according to all of the following requirements:

1. Design the cover and its closure devices to form a continuous barrier over the entire surface area of the liquid in the surface impoundment.

2. Equip each opening in the cover not vented to the control device with a closure device. If the pressure in the vapor headspace underneath the cover is less than atmospheric pressure when the control device is operating, design the closure devices to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the cover is equal to or greater than atmospheric pressure when the control device is operating, design the closure device to operate with no detectable organic emissions using the procedure in s. NR 664.1083 (4).

3. Make the cover and its closure devices of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the cover and closure devices throughout their intended service life. Factors to consider when selecting the materials of construction and designing the cover and closure devices shall include organic vapor permeability, the effects of any contact with the liquid or its vapors managed in the surface impoundment, the effects of outdoor exposure to wind, moisture and sunlight and the operating practices used for the surface impoundment on which the cover is installed.

4. Design and operate the closed−vent system and control device according to s. NR 664.1087.

(b) Whenever hazardous waste is in the surface impoundment, install the cover with each closure device secured in the closed position and the vapor headspace underneath the cover vented to the control device except as follows:

1. Venting to the control device is not required, and opening of closure devices or removal of the cover is allowed at the following times:

a. To provide access to the surface impoundment for performing routine inspection, maintenance or other activities needed for normal operations. Examples of those activities include those times when a worker needs to open a port to sample liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. After completing the activity, promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the surface impoundment.

b. To remove accumulated sludge or other residues from the bottom of the surface impoundment.

2. Opening of a safety device, as defined in s. NR 665.1081, is allowed at any time conditions require doing so to avoid an unsafe condition.

(c) Inspect and monitor the air emission control equipment according to all of the following procedures:

1. Visually inspect the surface impoundment cover and its closure devices to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings, broken, cracked or otherwise damaged seals or gaskets on closure devices and broken or missing hatches, access covers, caps or other closure devices.

2. Inspect and monitor the closed−vent system and control device according to s. NR 664.1087.

3. Perform an initial inspection of the air emission control equipment on or before the date that the surface impoundment becomes subject to this section. Thereafter, perform the inspections at least once every year except for the special conditions provided for in sub. (7).

4. In the event that a defect is detected, repair the defect according to sub. (6).

5. Maintain a record of the inspection according to s. NR 664.1089 (3).

(5) The owner or operator shall transfer hazardous waste to a surface impoundment subject to this section according to all of the following requirements:

(a) Except as provided in par. (b), transfer hazardous waste to the surface impoundment from another surface impoundment subject to this section or from a tank subject to s. NR 664.1084 using continuous hard−piping or another closed system that does not allow exposure of the waste to the atmosphere. For the purpose of complying with this paragraph, an individual drain system is a closed system when it meets 40 CFR part 63, subpart RR—National Emission Standards for Individual Drain Systems.

(b) Paragraph (a) does not apply when transferring a hazardous waste to the surface impoundment under any of the following conditions:

1. The hazardous waste meets the average VO concentration conditions in s. NR 664.1082 (3) (a) at the point of waste origination.

2. The hazardous waste has been treated by an organic destruction or removal process to meet s. NR 664.1082 (3) (b).

3. The hazardous waste meets s. NR 664.1082 (3) (d).

(6) The owner or operator shall repair each defect detected during an inspection performed according to sub. (3) (c) or (4) (c) as follows:

(a) Make first efforts at repair of the defect no later than 5 calendar days after detection, and complete the repair as soon as possible but no later than 45 calendar days after detection except as provided in par. (b).

(b) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the surface impoundment and no alternative capacity is available at the site to accept the hazardous waste normally managed in the surface impoundment. In this case, repair the defect the next time the process or unit that is generating the hazardous waste managed in the surface impoundment stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

(7) Following the initial inspection and monitoring of the cover as required by the applicable provisions of this subchapter, subsequent inspection and monitoring may be performed at intervals longer than one year in the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous or other unsafe conditions. In this case, the owner or operator may designate the cover as an "unsafe to inspect and monitor cover" and comply with all of the following requirements:

(a) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.

(b) Develop and implement a written plan and schedule to inspect and monitor the cover using the procedures in the applicable section of this subchapter as frequently as practicable during those times when a worker can safely access the cover.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1086 Standards: containers. (1) APPLICABILITY. This section applies to the control of air pollutant emissions from containers for which s. NR 664.1082 (2) references the use of this section for the air emission control.

(2) GENERAL REQUIREMENTS. (a) The owner or operator shall control air pollutant emissions from each container subject to this section according to the following requirements, as applicable to the container, except when the special provisions for waste stabilization processes specified in par. (b) apply to the container:

1. For a container having a design capacity greater than 0.1 m^3 and less than or equal to 0.46 m^3, control air pollutant emis-

sions from the container according to the Container Level 1 standards in sub. (3).

2. For a container having a design capacity greater than 0.46 m^3 that is not in light material service, control air pollutant emissions from the container according to the Container Level 1 standards in sub. (3).

3. For a container having a design capacity greater than 0.46 m^3 that is in light material service, control air pollutant emissions from the container according to the Container Level 2 standards in sub. (4).

(b) When a container having a design capacity greater than 0.1 m^3 is used for treatment of a hazardous waste by a waste stabilization process, control air pollutant emissions from the container according to the Container Level 3 standards in sub. (5) at those times during the waste stabilization process when the hazardous waste in the container is exposed to the atmosphere.

(3) CONTAINER LEVEL 1 STANDARDS. (a) A container using Container Level 1 controls is one of the following:

1. A container that meets the applicable U.S. department of transportation (DOT) regulations on packaging hazardous materials for transportation as specified in sub. (6).

2. A container equipped with a cover and closure devices that form a continuous barrier over the container openings such that when the cover and closure devices are secured in the closed position there are no visible holes, gaps or other open spaces into the interior of the container. The cover may be a separate cover installed on the container (e.g., a lid on a drum or a suitably secured tarp on a roll−off box) or may be an integral part of the container structural design (e.g., a "portable tank" or bulk cargo container equipped with a screw−type cap).

3. An open−top container in which an organic−vapor suppressing barrier is placed on or over the hazardous waste in the container such that no hazardous waste is exposed to the atmosphere. One example of such a barrier is application of a suitable organic−vapor suppressing foam.

(b) Equip a container used to meet par. (a) 2. or 3. with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere and to maintain the equipment integrity, for as long as the container is in service. Factors to consider in selecting the materials of construction and designing the cover and closure devices shall include organic vapor permeability, the effects of contact with the hazardous waste or its vapor managed in the container, the effects of outdoor exposure of the closure device or cover material to wind, moisture and sunlight and the operating practices for which the container is intended to be used.

(c) Whenever hazardous waste is in a container using Container Level 1 controls, install all covers and closure devices for the container, as applicable to the container, and secure and maintain each closure device in the closed position except as follows:

1. Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

a. In the case when the container is filled to the intended final level in one continuous operation, promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

b. In the case when discrete quantities or batches of material are intermittently added to the container over a period of time, promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level, the completion of a batch loading after which no additional material will be added to the container within 15 minutes, the person performing the loading operation leaving the immediate vicinity of the container or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

2. Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

a. For the purpose of meeting the requirements of this section, an empty container as defined in s. NR 661.07 (2) may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container).

b. In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container in s. NR 661.07 (2), promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

3. Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of those activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. After completing the activity, promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

4. Opening of a spring−loaded, pressure−vacuum relief valve, conservation vent or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container according to the container design specifications. Design the device to operate with no detectable organic emissions when the device is secured in the closed position. Establish the settings at which the device opens such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable rules, fire protection and prevention codes, standard engineering codes and practices or other requirements for the safe handling of flammable, ignitable, explosive, reactive or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

5. Opening of a safety device, as defined in s. NR 665.1081, is allowed at any time conditions require doing so to avoid an unsafe condition.

(d) For containers using Container Level 1 controls, inspect the containers and their covers and closure devices as follows:

1. In the case when hazardous waste is already in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., does not meet the conditions for an empty container in s. NR 661.07 (2)), visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. Conduct the container visual inspection on or before the date that the container is accepted at the facility (i.e., the date the container becomes subject to this subchapter). For purposes of this subdivision, the date of acceptance is the date of signature that the facility owner or operator enters on item 20 of the uniform hazardous waste manifest (EPA forms 8700−22 and 8700−22A), as required in s. NR 664.0071. If a defect is detected, repair the defect according to subd. 3.

2. In the case when a container used for managing hazardous waste remains at the facility for a period of one year or more, visually inspect the container and its cover and closure devices ini-

tially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, repair the defect according to subd. 3.

3. When a defect is detected for the container, cover or closure devices, make first efforts at repair of the defect no later than 24 hours after detection and complete the repair as soon as possible but no later than 5 calendar days after detection. If repair of a defect cannot be completed within 5 calendar days, remove the hazardous waste from the container and do not use the container to manage hazardous waste until the defect is repaired.

(e) Maintain at the facility a copy of the procedure used to determine that containers with capacity of 0.46 m^3 or greater, which do not meet applicable U.S. department of transportation (DOT) regulations as specified in sub. (6), are not managing hazardous waste in light material service.

(4) CONTAINER LEVEL 2 STANDARDS. (a) A container using Container Level 2 controls is one of the following:

1. A container that meets the applicable U.S. department of transportation (DOT) regulations on packaging hazardous materials for transportation as specified in sub. (6).

2. A container that operates with no detectable organic emissions as defined in s. NR 665.1081 and determined according to sub. (7).

3. A container that has been demonstrated within the preceding 12 months to be vapor−tight using Method 27 in appendix A of 40 CFR part 60, incorporated by reference in s. NR 660.11, according to sub. (8).

(b) Transfer hazardous waste in or out of a container using Container Level 2 controls in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive or other hazardous materials. Examples of container loading procedures that meet this paragraph include using a submerged−fill pipe or other submerged−fill method to load liquids into the container, a vapor−balancing system or a vapor−recovery system to collect and control the vapors displaced from the container during filling operations or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

(c) Whenever hazardous waste is in a container using Container Level 2 controls, install all covers and closure devices for the container, and secure and maintain each closure device in the closed position except as follows:

1. Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

a. In the case when the container is filled to the intended final level in one continuous operation, promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

b. In the case when discrete quantities or batches of material are intermittently added to the container over a period of time, promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the container being filled to the intended final level, the completion of a batch loading after which no additional material will be added to the container within 15 minutes, the person performing the loading operation leaving the immediate vicinity of the container, or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

2. Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

a. For the purpose of meeting the requirements of this section, an empty container as defined in s. NR 661.07 (2) may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container).

b. In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container in s. NR 661.07 (2), promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

3. Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of those activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. After completing the activity, promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

4. Opening of a spring−loaded, pressure−vacuum relief valve, conservation vent or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container according to the container design specifications. Design the device to operate with no detectable organic emission when the device is secured in the closed position. Establish the settings at which the device opens such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable rules, fire protection and prevention codes, standard engineering codes and practices or other requirements for the safe handling of flammable, ignitable, explosive, reactive or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

5. Opening of a safety device, as defined in s. NR 665.1081, is allowed at any time conditions require doing so to avoid an unsafe condition.

(d) Inspect containers using Container Level 2 controls and their covers and closure devices as follows:

1. In the case when hazardous waste is already in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., does not meet the conditions for an empty container in s. NR 661.07 (2)), visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. Conduct the container visual inspection on or before the date that the container is accepted at the facility (i.e., the date the container becomes subject to the standards in this subchapter). For purposes of this subdivision, the date of acceptance is the date of signature that the facility owner or operator enters on item 20 of the uniform hazardous waste manifest (EPA forms 8700−22 and 8700−22A), as required in s. NR 664.0071. If a defect is detected, repair the defect according to subd. 3.

2. In the case when a container used for managing hazardous waste remains at the facility for a period of one year or more, visually inspect the container and its cover and closure devices ini-

tially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, repair the defect according to subd. 3.

3. When a defect is detected for the container, cover or closure devices, make first efforts at repair of the defect no later than 24 hours after detection, and complete the repair as soon as possible but no later than 5 calendar days after detection. If repair of a defect cannot be completed within 5 calendar days, remove the hazardous waste from the container and do not use the container to manage hazardous waste until the defect is repaired.

(5) CONTAINER LEVEL 3 STANDARDS. (a) A container using Container Level 3 controls is one of the following:

1. A container that is vented directly through a closed−vent system to a control device according to par. (b) 2.

2. A container that is vented inside an enclosure which is exhausted through a closed−vent system to a control device according to par. (b) 1. and 2.

(b) Meet the following requirements, as applicable to the type of air emission control equipment selected:

1. Design and operate the container enclosure according to the criteria for a permanent total enclosure in Method 204—"Criteria for and Verification of a Permanent or Temporary Total Enclosure" in appendix M of 40 CFR part 51, incorporated by reference in s. NR 660.11. The enclosure may have permanent or temporary openings to allow worker access, passage of containers through the enclosure by conveyor or other mechanical means, entry of permanent mechanical or electrical equipment or direct airflow into the enclosure. Perform the verification procedure for the enclosure in Section 8 of Method 204 initially when the enclosure is first installed and, thereafter, annually.

2. Design and operate the closed−vent system and control device according to s. NR 664.1087.

(c) Safety devices, as defined in s. NR 665.1081, may be installed and operated as necessary on any container, enclosure, closed−vent system or control device used to comply with par. (a).

(d) If using Container Level 3 controls according to this subchapter, inspect and monitor the closed−vent systems and control devices as specified in s. NR 664.1087.

(e) If using Container Level 3 controls according to this subchapter, prepare and maintain the records specified in s. NR 664.1089 (4).

(f) Transfer hazardous waste in or out of a container using Container Level 3 controls in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive or other hazardous materials. Examples of container loading procedures that meet this paragraph include using a submerged−fill pipe or other submerged−fill method to load liquids into the container, a vapor−balancing system or a vapor−recovery system to collect and control the vapors displaced from the container during filling operations, or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

(6) HAZARDOUS MATERIALS PACKAGING REQUIREMENTS. For the purpose of compliance with sub. (3) (a) 1. or (4) (a) 1., use containers that meet the applicable U.S. department of transportation (DOT) regulations on packaging hazardous materials for transportation as follows:

(a) The container meets the applicable requirements in 49 CFR part 178—Specifications for Packaging or part 179—Specifications for Tank Cars.

(b) Hazardous waste is managed in the container according to the applicable requirements in 49 CFR part 107, subpart B—Exemptions; 49 CFR part 172—Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements; 49 CFR part 173—Shippers—General Requirements for Shipments and Packages and 49 CFR part 180—Continuing Qualification and Maintenance of Packagings.

(c) For the purpose of complying with this subchapter, no exceptions to the 49 CFR part 178 or 179 regulations are allowed except as provided for in par. (d).

(d) For a lab pack that is managed according to 49 CFR part 178 for the purpose of complying with this subchapter, an owner or operator may comply with the exceptions for combination packagings in 49 CFR 173.12(b).

(7) PROCEDURE FOR DETERMINING NO DETECTABLE ORGANIC EMISSIONS. To determine compliance with the no detectable organic emissions requirement of sub. (4) (a) 2., use the procedure in s. NR 664.1083 (4) as follows:

(a) Check each potential leak interface (i.e., a location where organic vapor leakage could occur) on the container, its cover and associated closure devices, as applicable to the container. Potential leak interfaces that are associated with containers include, but are not limited to, 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.

(b) Perform the test when the container is filled with a material having a volatile organic concentration representative of the range of volatile organic concentrations for the hazardous wastes expected to be managed in this type of container. During the test, secure the container cover and closure devices in the closed position.

(8) PROCEDURE FOR DETERMINING A CONTAINER TO BE VAPOR−TIGHT. To determine compliance with the vapor−tight container requirement of sub. (4) (a) 3., use the following procedure:

(a) Perform the test according to Method 27 in appendix A of 40 CFR part 60, incorporated by reference in s. NR 660.11.

(b) Use a pressure measurement device that has a precision of ± 2.5 mm water and is capable of measuring above the pressure at which the container is to be tested for vapor tightness.

(c) If the test results determined by Method 27 indicate that the container sustains a pressure change less than or equal to 750 Pascals within 5 minutes after it is pressurized to a minimum of 4,500 Pascals, the container is vapor−tight.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06; CR 06−102: am. (3) (d) 1. and (4) (d) 1. Register March 2007 No. 615, eff. 4−1−07.

NR 664.1087 Standards: closed−vent systems and control devices. (1) This section applies to each closed−vent system and control device installed and operated by the owner or operator to control air emissions according to the standards of this subchapter.

(2) The closed−vent system shall meet all of the following requirements:

(a) The closed−vent system shall route the gases, vapors and fumes emitted from the hazardous waste in the waste management unit to a control device that meets sub. (3).

(b) Design and operate the closed−vent system according to s. NR 664.1033 (11).

(c) In the case when 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, equip each bypass device with either a flow indicator as specified in subd. 1. or a seal or locking device as specified in subd. 2. For the purpose of complying with this paragraph, low leg drains, high point bleeds, ana-

lyzer vents, open−ended valves or lines, spring loaded pressure relief valves and other fittings used for safety purposes are not bypass devices.

1. If a flow indicator is used to comply with this paragraph, install the indicator at the inlet to the bypass line used to divert gases and vapors from the closed−vent system to the atmosphere at a point upstream of the control device inlet. For this paragraph, a flow indicator means a device which indicates the presence of either gas or vapor flow in the bypass line.

2. If a seal or locking device is used to comply with this paragraph, place the device on the mechanism by which the bypass device position is controlled (e.g., valve handle, damper lever) 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. Examples of the devices include, but are not limited to, a car−seal or a lock−and−key configuration valve. Visually inspect the seal or closure mechanism at least once every month to verify that the bypass mechanism is maintained in the closed position.

(d) Inspect and monitor the closed−vent system according to s. NR 664.1033 (12).

(3) The control device shall meet all of the following applicable requirements:

(a) The control device shall be one of the following devices:

1. A control device designed and operated to reduce the total organic content of the inlet vapor stream vented to the control device by at least 95% by weight.

2. An enclosed combustion device designed and operated according to s. NR 664.1033 (3).

3. A flare designed and operated according to s. NR 664.1033 (4).

(b) If using a closed−vent system and control device to comply with this section, comply with all of the following requirements:

1. Periods of planned routine maintenance of the control device, during which the control device does not meet par. (a) 1., 2. or 3., as applicable, may not exceed 240 hours per year.

2. The specifications and requirements in par. (a) 1., 2. and 3. for control devices do not apply during periods of planned routine maintenance.

3. The specifications and requirements in par. (a) 1., 2. and 3. for control devices do not apply during a control device system malfunction.

4. Demonstrate compliance with subd. 1. (i.e., planned routine maintenance of a control device, during which the control device does not meet the specifications of par. (a) 1., 2. or 3., as applicable, may not exceed 240 hours per year) by recording the information specified in s. NR 664.1089 (5) (e).

5. Correct control device system malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of air pollutants.

6. Operate the closed−vent system such that gases, vapors or fumes are not actively vented to the control device during periods of planned maintenance or control device system malfunction (i.e., periods when the control device is not operating or not operating normally) except in cases when it is necessary to vent the gases, vapors or fumes to avoid an unsafe condition or to implement malfunction corrective actions or planned maintenance actions.

(c) If using a carbon adsorption system to comply with par. (a), operate and maintain the control device according to all of the following requirements:

1. Following the initial startup of the control device, replace all activated carbon in the control device with fresh carbon on a regular basis according to s. NR 664.1033 (7) or (8).

2. Manage all carbon that is hazardous waste and that is removed from the control device according to s. NR 664.1033 (14), regardless of the average volatile organic concentration of the carbon.

(d) If using a control device other than a thermal vapor incinerator, flare, boiler, process heater, condenser or carbon adsorption system to comply with par. (a), operate and maintain the control device according to s. NR 664.1033 (10).

(e) Demonstrate that a control device achieves the performance requirements of par. (a) as follows:

1. Demonstrate, using either a performance test in subd. 3. or a design analysis in subd. 4., the performance of each control device except for any of the following:

a. A flare.

b. A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

c. A boiler or process heater into which the vent stream is introduced with the primary fuel.

d. A boiler or industrial furnace burning hazardous waste for which the owner or operator has been issued an operating license under ch. NR 670 and has designed and operates the unit according to subch. H of ch. NR 666.

e. A boiler or industrial furnace burning hazardous waste which the owner or operator has designed and operates according to the interim license requirements of subch. H of ch. NR 666.

2. Demonstrate the performance of each flare according to s. NR 664.1033 (5).

3. For a performance test conducted to meet subd. 1., use the test methods and procedures in s. NR 664.1034 (3) (a) to (d).

4. For a design analysis conducted to meet subd. 1., meet the requirements in s. NR 664.1035 (2) (d) 3.

5. Demonstrate that a carbon adsorption system achieves the performance requirements of par. (a) based on the total quantity of organics vented to the atmosphere from all carbon adsorption system equipment that is used for organic adsorption, organic desorption or carbon regeneration, organic recovery and carbon disposal.

(f) If the owner or operator and the department do not agree on a demonstration of control device performance using a design analysis, resolve the disagreement using the results of a performance test performed by the owner or operator according to par. (e) 3. The department may choose to have an authorized representative observe the performance test.

(g) Inspect and monitor the closed−vent system and control device according to s. NR 664.1033 (6) (b) and (12). Inspect the readings from each monitoring device required by s. NR 664.1033 (6) (b) at least once each operating day to check control device operation. Immediately implement any necessary corrective measures to ensure the control device is operated in compliance with this section.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1088 Inspection and monitoring requirements. (1) The owner or operator shall inspect and monitor air emission control equipment used to comply with this subchapter according to the applicable requirements in ss. NR 664.1084 to 664.1087.

(2) The owner or operator shall develop and implement a written plan and schedule to perform the inspections and monitoring required by sub. (1). The owner or operator shall incorporate this plan and schedule into the facility inspection plan required under s. NR 664.0015.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1089 Recordkeeping requirements. (1) Each owner or operator of a facility subject to requirements of this subchapter shall record and maintain the information specified in subs. (2) to (10), as applicable to the facility. Except for air emission control equipment design documentation and information required by subs. (9) and (10), maintain records required by

this section in the operating record for a minimum of 3 years. Maintain air emission control equipment design documentation in the operating record until the air emission control equipment is replaced or otherwise no longer in service. Maintain information required by subs. (9) and (10) in the operating record for as long as the waste management unit is not using air emission controls specified in ss. NR 664.1084 to 664.1087 according to the conditions in s. NR 664.1080 (4) or (2) (g), respectively.

(2) The owner or operator of a tank using air emission controls according to s. NR 664.1084 shall prepare and maintain records for the tank that include all of the following information:

(a) For each tank using air emission controls according to s. NR 664.1084, record all of the following:

1. A tank identification number (or other unique identification description selected by the owner or operator).

2. A record for each inspection required by s. NR 664.1084 that includes all of the following information:

a. Date inspection was conducted.

b. For each defect detected during the inspection, the location of the defect, a description of the defect, the date of detection and corrective action taken to repair the defect. In the event that repair of the defect is delayed according to s. NR 664.1084, also record the reason for the delay and the date that completion of repair of the defect is expected.

(b) In addition to the information required by par. (a), record the following information, as applicable to the tank:

1. If using a fixed roof to comply with the Tank Level 1 control requirements in s. NR 664.1084 (3), prepare and maintain records for each determination for the maximum organic vapor pressure of the hazardous waste in the tank performed according to s. NR 664.1084 (3). The records shall include the date and time the samples were collected, the analysis method used and the analysis results.

2. If using an internal floating roof to comply with the Tank Level 2 control requirements in s. NR 664.1084 (5), prepare and maintain documentation describing the floating roof design.

3. If using an external floating roof to comply with the Tank Level 2 control requirements in s. NR 664.1084 (6), prepare and maintain all of the following records:

a. Documentation describing the floating roof design and the dimensions of the tank.

b. Records for each seal gap inspection required by s. NR 664.1084 (6) (c) describing the results of the seal gap measurements. The records shall include the date that the measurements were performed, the raw data obtained for the measurements and the calculations of the total gap surface area. In the event that the seal gap measurements do not conform to the specifications in s. NR 664.1084 (6) (a), the records shall include a description of the repairs that were made, the date the repairs were made and the date the tank was emptied, if necessary.

4. If using an enclosure to comply with the Tank Level 2 control requirements in s. NR 664.1084 (9), prepare and maintain all of the following records:

a. Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria for a permanent total enclosure in Method 204—"Criteria for and Verification of a Permanent or Temporary Total Enclosure" in appendix M of 40 CFR part 51, incorporated by reference in s. NR 660.11.

b. Records required for the closed−vent system and control device according to sub. (5).

(3) The owner or operator of a surface impoundment using air emission controls according to s. NR 664.1085 shall prepare and maintain records for the surface impoundment that include all of the following information:

(a) A surface impoundment identification number (or other unique identification description selected by the owner or operator).

(b) Documentation describing the floating membrane cover or cover design, as applicable to the surface impoundment, that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications in s. NR 664.1085 (3).

(c) A record for each inspection required by s. NR 664.1085 that includes all of the following information:

1. Date inspection was conducted.

2. For each defect detected during the inspection, the location of the defect, a description of the defect, the date of detection and corrective action taken to repair the defect. In the event that repair of the defect is delayed according to s. NR 664.1085 (6), also record the reason for the delay and the date that completion of repair of the defect is expected.

(d) For a surface impoundment equipped with a cover and vented through a closed−vent system to a control device, prepare and maintain the records specified in sub. (5).

(4) The owner or operator of containers using Container Level 3 air emission controls according to s. NR 664.1086 shall prepare and maintain records that include all of the following information:

(a) Records for the most recent set of calculations and measurements performed to verify that the enclosure meets the criteria for a permanent total enclosure in Method 204—"Criteria for and Verification of a Permanent or Temporary Total Enclosure" in appendix M of 40 CFR part 51, incorporated by reference in s. NR 660.11.

(b) Records required for the closed−vent system and control device according to sub. (5).

(5) The owner or operator using a closed−vent system and control device according to s. NR 664.1087 shall prepare and maintain records for the closed−vent system and control device that include all of the following information:

(a) Certification that is signed and dated by the owner or operator stating that the control device is designed to operate at the performance level documented by a design analysis as specified in par. (b) or by performance tests as specified in par. (c) when the tank, surface impoundment or container is or would be operating at capacity or the highest level reasonably expected to occur.

(b) If a design analysis is used, design documentation as specified in s. NR 664.1035 (2) (d). The documentation shall include information prepared by the owner or operator or provided by the control device manufacturer or vendor that describes the control device design according to s. NR 664.1035 (2) (d) 3. and certification by the owner or operator that the control equipment meets the applicable specifications.

(c) If performance tests are used, a performance test plan as specified in s. NR 664.1035 (2) (c) and all test results.

(d) Information required by s. NR 664.1035 (3) (a) and (b), as applicable.

(e) On a semiannual basis, record all of the following information for those planned routine maintenance operations that would require the control device not to meet s. NR 664.1087 (3) (a) 1., 2. or 3., as applicable:

1. A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6−month period. This description shall include the type of maintenance necessary, planned frequency of maintenance and lengths of maintenance periods.

2. A description of the planned routine maintenance that was performed for the control device during the previous 6−month period. The description shall include the type of maintenance performed and the total number of hours during those 6 months that

the control device did not meet s. NR 664.1087 (3) (a) 1., 2. or 3., as applicable, due to planned routine maintenance.

(f) Record all of the following information for those unexpected control device system malfunctions that would require the control device not to meet s. NR 664.1087 (3) (a) 1., 2. or 3., as applicable:

1. The occurrence and duration of each malfunction of the control device system.

2. The duration of each period during a malfunction when gases, vapors or fumes are vented from the waste management unit through the closed−vent system to the control device while the control device is not properly functioning.

3. Actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation.

(g) Records of the management of carbon removed from a carbon adsorption system conducted according to s. NR 664.1087 (3) (c) 2.

(6) The owner or operator of a tank, surface impoundment or container exempted from standards according to s. NR 664.1082 (3) shall prepare and maintain all of the following records, as applicable:

(a) For tanks, surface impoundments and containers exempted under the hazardous waste organic concentration conditions specified in s. NR 664.1082 (3) (a) or (b) 1. to 6., record the information used for each waste determination (e.g., test results, measurements, calculations and other documentation) in the facility operating log. If analysis results for waste samples are used for the waste determination, record the date, time and location that each waste sample is collected according to the applicable requirements of s. NR 664.1083.

(b) For tanks, surface impoundments or containers exempted under s. NR 664.1082 (3) (b) 7. or 8., record the identification number for the incinerator, boiler or industrial furnace in which the hazardous waste is treated.

(7) An owner or operator designating a cover as "unsafe to inspect and monitor" pursuant to s. NR 664.1084 (12) or 664.1085 (7) shall record in a log that is kept in the facility operating record the identification numbers for waste management units with covers that are designated as "unsafe to inspect and monitor", the explanation for each cover stating why the cover is unsafe to inspect and monitor and the plan and schedule for inspecting and monitoring each cover.

(8) The owner or operator of a facility that is subject to this subchapter and to the control device standards in 40 CFR part 60, subpart VV, or s. NR 440.62, or 40 CFR part 61, subpart V, may demonstrate compliance with the applicable sections of this subchapter by documentation either pursuant to this subchapter, or pursuant to 40 CFR part 60, subpart VV, or s. NR 440.62, or 40 CFR part 61, subpart V, to the extent that the documentation required by 40 CFR part 60 or 61 or ch. NR 440 duplicates the documentation required by this section.

(9) For each tank or container not using air emission controls specified in ss. NR 664.1084 to 664.1087 according to the conditions in s. NR 664.1080 (4), the owner or operator shall record and maintain all of the following information:

(a) A list of the individual organic peroxide compounds manufactured at the facility that meet the conditions in s. NR 664.1080 (4) (a).

(b) A description of how the hazardous waste containing the organic peroxide compounds identified in par. (a) is managed at the facility in tanks and containers. The description shall include all of the following information:

1. For the tanks used at the facility to manage this hazardous waste, provide sufficient information to describe for each tank a facility identification number for the tank, the purpose and placement of this tank in the management train of this hazardous waste and the procedures used to ultimately dispose of the hazardous waste managed in the tanks.

2. For containers used at the facility to manage these hazardous wastes, provide sufficient information to describe a facility identification number for the container or group of containers, the purpose and placement of this container, or group of containers, in the management train of this hazardous waste and the procedures used to ultimately dispose of the hazardous waste handled in the containers.

(c) An explanation of why managing the hazardous waste containing the organic peroxide compounds identified in par. (a) in the tanks and containers described in par. (b) would create an undue safety hazard if the air emission controls, required under ss. NR 664.1084 to 664.1087, were installed and operated on these waste management units. This explanation shall include all of the following information:

1. For tanks used at the facility to manage these hazardous wastes, provide sufficient information to explain how use of the required air emission controls on the tanks would affect the tank design features and facility operating procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the tanks, and why installation of safety devices on the required air emission controls, as allowed under this subchapter, will not address those situations in which evacuation of tanks equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

2. For containers used at the facility to manage these hazardous wastes, provide sufficient information to explain how use of the required air emission controls on the containers would affect the container design features and handling procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the containers, and why installation of safety devices on the required air emission controls, as allowed under this subchapter, will not address those situations in which evacuation of containers equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

(10) For each hazardous waste management unit not using air emission controls specified in ss. NR 664.1084 to 664.1087 according to s. NR 664.1080 (2) (g), the owner and operator shall record and maintain all of the following information:

(a) Certification that the waste management unit is equipped with and operating air emission controls according to 40 CFR part 60, 61 or 63 or corresponding provisions of ch. NR 440, subch. III of ch. NR 446 and chs. NR 447 to 469.

(b) Identification of the specific requirements in 40 CFR part 60, 61 or 63 or in ch. NR 440, subch. III of ch. NR 446 and chs. NR 447 to 469 with which the waste management unit is in compliance.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1090 Reporting requirements. (1) Each owner or operator managing hazardous waste in a tank, surface impoundment or container exempted from using air emission controls under s. NR 664.1082 (3) shall report to the department each occurrence when hazardous waste is placed in the waste management unit in noncompliance with the conditions in s. NR 664.1082 (3) (a) or (b), as applicable. Examples of those occurrences include placing in the waste management unit a hazardous waste having an average VO concentration equal to or greater than 500 ppmw at the point of waste origination, or placing in the waste management unit a treated hazardous waste of which the organic content has been reduced by an organic destruction or removal process that fails to achieve the applicable conditions in s. NR 664.1082 (3) (b) 1. to 6. The owner or operator shall submit a written report within 15 calendar days of the time that the owner or operator becomes aware of the occurrence. The written report shall contain the EPA identification number, facility name and

address, a description of the noncompliance event and the cause, the dates of the noncompliance and the actions taken to correct the noncompliance and prevent recurrence of the noncompliance. An authorized representative of the owner or operator shall sign and date the report.

(2) Each owner or operator using air emission controls on a tank according to s. NR 664.1084 (3) shall report to the department each occurrence when hazardous waste is managed in the tank in noncompliance with the conditions in s. NR 664.1084 (2). The owner or operator shall submit a written report within 15 calendar days of the time that the owner or operator becomes aware of the occurrence. The written report shall contain the EPA identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance and the actions taken to correct the noncompliance and prevent recurrence of the noncompliance. An authorized representative of the owner or operator shall sign and date the report.

(3) Each owner or operator using a control device according to s. NR 664.1087 shall submit a semiannual written report to the department except as provided for in sub. (4). The report shall describe each occurrence during the previous 6−month period when either a control device is operated continuously for 24 hours or longer in noncompliance with the applicable operating values defined in s. NR 664.1035 (3) (d), or a flare is operated with visible emissions for 5 minutes or longer in a 2−hour period, as defined in s. NR 664.1033 (4). The written report shall include the EPA identification number, facility name and address, an explanation why the control device could not be returned to compliance within 24 hours and actions taken to correct the noncompliance. An authorized representative of the owner or operator shall sign and date the report.

(4) A report to the department according to sub. (3) is not required for a 6−month period during which all control devices subject to this subchapter are operated by the owner or operator such that all of the following conditions are met:

(a) During no period of 24 hours or longer did a control device operate continuously in noncompliance with the applicable operating values defined in s. NR 664.1035 (3) (d).

(b) No flare was operated with visible emissions for 5 minutes or longer in a 2−hour period, as defined in s. NR 664.1033 (4).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter DD — Containment Buildings

NR 664.1100 Applicability. The requirements of this subchapter apply to owners or operators who store or treat hazardous waste in units designed and operated under s. NR 664.1101. The owner or operator is not subject to the definition of land disposal in s. NR 668.02 (3) provided that the unit complies with all of the following:

(1) The unit is a completely enclosed, self−supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, uplift, physical contact with the hazardous wastes to which they are exposed, climatic conditions and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of the equipment with containment walls.

(2) The unit has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel, wastes and handling equipment within the unit.

(3) If the unit is used to manage liquids, it has all of the following:

(a) A primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier.

(b) A liquid collection system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier.

(c) A secondary containment system designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting and removing leaks of hazardous constituents at the earliest practicable time.

(4) The unit has controls sufficient to prevent fugitive dust emissions to meet the no visible emission standard in s. NR 664.1101 (3) (a) 4.

(5) The unit is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel or equipment.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1101 Design and operating standards. (1) All containment buildings shall comply with all of the following design standards:

(a) The containment building shall be completely enclosed with a floor, walls and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run−on), and to assure containment of managed wastes.

(b) The floor and containment walls of the unit, including the secondary containment system if required under sub. (2), shall be designed and constructed of materials of sufficient strength and thickness to support themselves, the waste contents and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, uplift, physical contact with the hazardous wastes to which they are exposed, climatic conditions and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of the equipment with containment walls. The unit shall be designed so that it has sufficient structural strength to prevent collapse or other failure. All surfaces to be in contact with hazardous wastes shall be chemically compatible with those wastes. The department will consider standards established by professional organizations generally recognized by the industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirements of this paragraph. If appropriate to the nature of the waste management operation to take place in the unit, an exception to the structural strength requirement may be made for lightweight doors and windows that meet both of the following criteria:

1. They provide an effective barrier against fugitive dust emissions under sub. (3) (a) 4.

2. The unit is designed and operated in a fashion that assures that wastes will not actually come in contact with these openings.

(c) Incompatible hazardous wastes or treatment reagents may not be placed in the unit or its secondary containment system if they could cause the unit or secondary containment system to leak, corrode or otherwise fail.

(d) A containment building shall have a primary barrier designed to withstand the movement of personnel, waste and handling equipment in the unit during the operating life of the unit and appropriate for the physical and chemical characteristics of the waste to be managed.

(2) For a containment building used to manage hazardous wastes containing free liquids or treated with free liquids (the presence of which is determined by the paint filter test, a visual examination or other appropriate means), the owner or operator shall include all of the following:

(a) A primary barrier designed and constructed of materials to prevent the migration of hazardous constituents into the barrier (e.g., a geomembrane covered by a concrete wear surface).

(b) A liquid collection and removal system to minimize the accumulation of liquid on the primary barrier of the containment building in compliance with both of the following:

1. The primary barrier shall be sloped to drain liquids to the associated collection system.

2. Liquids and waste shall be collected and removed to minimize hydraulic head on the containment system at the earliest practicable time.

(c) A secondary containment system including a secondary barrier designed and constructed to prevent migration of hazardous constituents into the barrier, and a leak detection system that is capable of detecting failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practicable time.

1. The requirements of the leak detection component of the secondary containment system are satisfied by installation of a system that is, at a minimum, both of the following:

a. Constructed with a bottom slope of one percent or more.

b. Constructed of a granular drainage material with a hydraulic conductivity of $1x10^{-2}$ cm/sec or more and a thickness of 12 inches (30.5 cm) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of $3x10^{5}$ m^2/sec or more.

2. If treatment is to be conducted in the building, an area in which the treatment will be conducted shall be designed to prevent the release of liquids, wet materials or liquid aerosols to other portions of the building.

3. The secondary containment system shall be constructed of materials that are chemically resistant to the waste and liquids managed in the containment building and of sufficient strength and thickness to prevent collapse under the pressure exerted by overlaying materials and by any equipment used in the containment building. (Containment buildings can serve as secondary containment systems for tanks placed within the building under certain conditions. A containment building can serve as an external liner system for a tank, provided it meets the requirements of s. NR 664.0193 (4) (a). In addition, the containment building shall meet the requirements of s. NR 664.0193 (2) and (3) (a) and (b) to be considered an acceptable secondary containment system for a tank.)

(3) Owners or operators of all containment buildings shall do all of the following:

(a) Use controls and practices to ensure containment of the hazardous waste within the unit; and, at a minimum, do all of the following:

1. Maintain the primary barrier to be free of significant cracks, gaps, corrosion or other deterioration that could cause hazardous waste to be released from the primary barrier.

2. Maintain the level of the stored or treated hazardous waste within the containment walls of the unit so that the height of any containment wall is not exceeded.

3. Take measures to prevent the tracking of hazardous waste out of the unit by personnel or by equipment used in handling the waste. An area shall be designated to decontaminate equipment and any rinsate shall be collected and properly managed.

4. Take measures to control fugitive dust emissions such that any openings (doors, windows, vents, cracks, etc.) exhibit no visible emissions (see 40 CFR part 60, appendix A, Method 22—Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares, incorporated by reference in s. NR 660.11). In addition, all associated particulate collection devices (e.g., fabric filter, electrostatic precipitator) shall be operated and maintained with sound air pollution control practices (see s. NR 439.055 for guidance). This state of no visible emissions shall be maintained effectively at all times during routine operating and maintenance conditions, including when vehicles and personnel are entering and exiting the unit.

(b) Obtain certification by a qualified registered professional engineer that the containment building design meets the requirements of subs. (1) and (2) and this subsection. For units placed into operation prior to June 1, 1995, this certification shall be placed in the facility's operating record (on−site files for generators who are not formally required to have operating records) no later than July 31, 1995. After June 1, 1995, PE certification shall be required prior to operation of the unit.

(c) Throughout the active life of the containment building, if the owner or operator detects a condition that could lead to or has caused a release of hazardous waste, repair the condition promptly, in accordance with all of the following procedures:

1. Upon detection of a condition that has led to a release of hazardous waste (e.g., upon detection of leakage from the primary barrier), the owner or operator shall do all of the following:

a. Enter a record of the discovery in the facility operating record.

b. Immediately remove the portion of the containment building affected by the condition from service.

c. Determine what steps must be taken to repair the containment building, remove any leakage from the secondary collection system and establish a schedule for accomplishing the cleanup and repairs.

d. Within 7 days after the discovery of the condition, notify the department of the condition, and within 14 working days provide a written notice to the department with a description of the steps taken to repair the containment building and the schedule for accomplishing the work.

2. The department will review the information submitted, make a determination regarding whether the containment building must be removed from service completely or partially until repairs and cleanup are complete and notify the owner or operator of the determination and the underlying rationale in writing.

3. Upon completing all repairs and cleanup the owner or operator shall notify the department in writing and provide a verification, signed by a qualified, registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted in accordance with subd. 1. d.

(d) Inspect and record in the facility's operating record, at least once every 7 days, data gathered from monitoring equipment and leak detection equipment as well as the containment building and the area immediately surrounding the containment building to detect signs of releases of hazardous waste.

(4) For containment buildings that contain areas both with and without secondary containment, the owner or operator shall do all of the following:

(a) Design and operate each area according to the requirements in subs. (1) to (3).

(b) Take measures to prevent the release of liquids or wet materials into areas without secondary containment.

(c) Maintain in the facility's operating log a written description of the operating procedures used to maintain the integrity of areas without secondary containment.

(5) Notwithstanding any other provision of this subchapter the department may waive requirements for secondary containment for a licensed containment building where the owner or operator demonstrates that the only free liquids in the unit are limited amounts of dust suppression liquids required to meet occupational health and safety requirements, and where containment of managed wastes and liquids can be assured without a secondary containment system.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1102 Closure and long−term care. (1) At closure of a containment building, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components (liners, etc.,) contaminated subsoils

and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless s. NR 661.03 (4) applies. The closure plan, closure activities, cost estimates for closure and financial responsibility for containment buildings shall meet all of the requirements specified in subchs. G and H.

(2) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures and equipment as required in sub. (1), the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, the owner or operator shall close the facility and perform long−term care in accordance with the closure and long−term care requirements that apply to landfills (s. NR 664.0310). In addition, for the purposes of closure, long−term care and financial responsibility, the containment building is then considered to be a landfill, and the owner or operator shall meet all of the requirements for landfills specified in subchs. G and H.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

Subchapter EE — Hazardous Waste Munitions and Explosives Storage

Note: Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including containment buildings (subch. DD), tanks (subch. J) or containers (subch. I). See s. NR 666.205 for storage of waste military munitions.

NR 664.1200 Applicability. The requirements of this subchapter apply to owners or operators who store munitions and explosive hazardous wastes, except as s. NR 664.0001 provides otherwise.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1201 Design and operating standards. (1) Hazardous waste munitions and explosives storage units shall be designed and operated with containment systems, controls and monitoring, that do all of the following:

(a) Minimize the potential for detonation or other means of release of hazardous waste, hazardous constituents, hazardous decomposition products or contaminated run−off to the soil, groundwater, surface water and atmosphere.

(b) Provide a primary barrier, which may be a container (including a shell) or tank, designed to contain the hazardous waste.

(c) For wastes stored outdoors, provide that the waste and containers will not be in standing precipitation.

(d) For liquid wastes, provide a secondary containment system that assures that any released liquids are contained and promptly detected and removed from the waste area, or vapor detection system that assures that any released liquids or vapors are promptly detected and an appropriate response taken (e.g., additional containment, such as overpacking, or removal from the waste area).

(e) Provide monitoring and inspection procedures that assure the controls and containment systems are working as designed and that releases that may adversely impact human health or the environment are not escaping from the unit.

(2) Hazardous waste munitions and explosives stored under this subchapter may be stored in one of the following:

(a) *Earth−covered magazines.* Earth−covered magazines shall be all of the following:

1. Constructed of waterproofed, reinforced concrete or structural steel arches, with steel doors that are kept closed when not being accessed.

2. Designed and constructed to do all of the following:

a. Be of sufficient strength and thickness to support the weight of any explosives or munitions stored and any equipment used in the unit.

b. Provide working space for personnel and equipment in the unit.

c. Withstand movement activities that occur in the unit.

3. Located and designed, with walls and earthen covers that direct an explosion in the unit in a safe direction, so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

(b) *Above−ground magazines.* Above−ground magazines shall be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

(c) *Outdoor or open storage areas.* Outdoor or open storage areas shall be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

(3) Hazardous waste munitions and explosives shall be stored in accordance with a standard operating procedure specifying procedures to ensure safety, security and environmental protection. If these procedures serve the same purpose as the security and inspection requirements of s. NR 664.0014, the preparedness and prevention procedures of subch. C and the contingency plan and emergency procedures requirements of subch. D, then these procedures shall be used to fulfill those requirements.

(4) Hazardous waste munitions and explosives shall be packaged to ensure safety in handling and storage.

(5) Hazardous waste munitions and explosives shall be inventoried at least annually.

(6) Hazardous waste munitions and explosives and their storage units shall be inspected and monitored as necessary to ensure explosives safety and to ensure that there is no migration of contaminants out of the unit.

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.

NR 664.1202 Closure and long−term care. (1) At closure of a magazine or unit which stored hazardous waste under this subchapter, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste, and manage them as hazardous waste unless s. NR 661.03 (4) applies. The closure plan, closure activities, cost estimates for closure and financial responsibility for magazines or units shall meet all of the requirements specified in subchs. G and H, except that the owner or operator may defer closure of the unit as long as it remains in service as a munitions or explosives magazine or storage unit.

(2) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures and equipment as required in sub. (1), the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, the owner or operator shall close the facility and perform long−term care in accordance with the closure and long−term care requirements that apply to landfills (s. NR 664.0310).

History: CR 05−032: cr. Register July 2006 No. 607, eff. 8−1−06.