

incident if the deterioration or 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.

(c) 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.

(d) The owner or operator shall record inspections in an inspection log or summary. These records shall be kept 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.

(8) CLOSURE. (a) The owner or operator of a facility shall close the facility in a manner that:

1. Minimizes the need for further maintenance, and
2. Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post closure escape of wastes, leachate, contaminated rainfall, or waste decomposition products to ground or surface waters, or to the atmosphere.
3. Meets the additional closure requirements for landfills and surface impoundments as specified in s. NR 181.44 (12), if applicable.

(b) The facility operator shall submit to the department for approval a closure plan demonstrating compliance with this paragraph at the time of and as part of the application for a license under s. NR 181.53 or 181.55 and shall amend the plan whenever changes in operating plans or facility design affect the closure plan. The closure plan shall include, but not be limited to:

1. A description of how the facility shall be closed.
2. A description of possible uses of the land after closure.
3. The anticipated time until closing, the estimated time required for closure and any anticipated partial closures.
4. An estimate of the maximum inventory of wastes in storage or in treatment at any given time during the life of the facility.
5. A description of the steps needed to decontaminate facility structures or equipment.

(c) At least 120 days prior to the closing of a facility, the owner or operator shall notify the department in writing of the intent to close the site. No later than this date, the owner or operator shall notify current users of the facility of the intent to close the site.

(d) Within 60 days after ceasing to accept hazardous waste, all wastes shall be removed from storage and treatment operations and disposed of in accordance with requirements of subch. III and an approved closure plan as specified in par. (b).

(e) At completion of closure, all equipment and structures used in the operation of the facility shall be properly disposed of or decontaminated by removal of all hazardous waste and residues.

(f) At completion of closure, all required equipment shall be provided and arrangements shall be made to implement the long term care provisions contained in the approved plan of operation.

(g) At completion of closure, the owner or operator of a disposal facility shall submit to the department certification by the owner or operator and certification by a registered professional engineer that the facility has been closed in accordance with the requirements of this subchapter, the plan of operation and all applicable license conditions.

(9) **LONG-TERM CARE.** (a) The owner of a disposal facility shall provide long-term care for a period of 20 or 30 years from the date of closure, under s. 144.441, Stats., unless the owner's responsibility is terminated earlier in accordance with s. 144.441 (2) (d), Stats.

(b) Long-term care shall apply only to disposal facilities and consist of at least the following:

1. Monitoring and reporting in accordance with the requirements of s. NR 181.44 (11) and (12) (c).

2. Maintenance of facility monitoring and waste containment devices and security requirements necessary to prevent hazards to human health.

(c) The use of a site on or in which hazardous waste remains after closure shall never be allowed to disturb the integrity of the final cover, liner, or any other component of any containment system, or the facility's monitoring system, unless the owner or operator can demonstrate to the department that the disturbance:

1. Is necessary to the proposed use of the property and will not increase the potential hazard to human health or the environment; or

2. Is necessary to reduce a threat to human health or the environment.

(10) **FINANCIAL RESPONSIBILITY FOR CLOSURE AND LONG-TERM CARE.** (a) *Definitions.* 1. "Actual dollar inpayments" means equal annual payments made by the facility owner into a long-term care account.

2. "Certificate of deposit" means a certificate issued by a bank or financial institution acknowledging receipt of a specific large sum of money in a special kind of time deposit, drawing interest and requiring written notice of withdrawal.

3. "Closure period" means the 60 day period after a facility ceases for hazardous waste treatment and storage facilities and the 90 day period after a facility ceases to accept waste for hazardous waste land disposal facilities unless otherwise specified in the approved plan of operation.

4. "Equal annual outpayments" means estimated payments for long-term care which are the same amount in each year of the period of owner responsibility for the long-term care of the facility.

5. "Interest bearing accounts" means escrow accounts, trust accounts or cash deposits with the department.

6. "Non-interest bearing accounts" means letters of credit or performance or forfeiture bonds.

7. "Real dollar impayments" means payments made by the facility owner which increase each year at the rate of inflation, into a long-term care account.

8. "Unequal annual outpayments" means estimated payments for long-term care which are higher in the early years of the period of owner responsibility for long-term care than they are later in the long-term period care after the facility has stabilized.

9. "U.S. government securities" includes treasury bills, treasury bonds, treasury certificates, treasury notes, treasury stocks or other obligations guaranteed by the federal government.

(b) *Applicability.* 1. Closure. The owner of every hazardous waste storage, treatment or disposal facility shall provide, as part of an interim license submittal or an initial operating license application and annually thereafter for the period of active facility life, proof of financial responsibility to ensure compliance with the closure requirements of the approved plan of operation for the facility, or if no approved plan of operation exists for the facility, with the requirements in sub. (8).

2. Long-term care. The owner of every hazardous waste disposal facility shall provide, as part of an initial license submittal or an initial operating license application and annually thereafter for the period of active facility life, proof of financial responsibility to ensure compliance with the long-term care requirements of the approved plan of operation for the facility, or if no approved plan of operation exists for the facility, with the requirements in sub. (9). An owner responsible for long-term care shall specify at the time of submittal of the plan of operation whether the owner chooses to be responsible for 20 years, subject to department approval, or 30 years. If no plan of operation has been approved, the 30 year period of owner responsibility shall apply.

3. Successors in interest. Any person acquiring rights of ownership, possession or operation of a licensed hazardous waste storage, treatment, or disposal facility shall be subject to all requirements of the license for the facility and shall provide any required proof of financial responsibility to the department in accordance with this subsection. The previous owner is responsible for closure and long-term care, and shall maintain any required proof of financial responsibility, until the person acquiring ownership, possession or operation of the facility establishes any required proof of financial responsibility.

(c) *Methods of providing proof of financial responsibility.* Financial assurances for closure and long-term care shall be established separately. The owner shall specify, as part of the plan of operation submittal or interim license submittal, which method of providing proof of financial responsibility will be used for closure and for long-term care. To provide proof of financial responsibility, the applicant shall use one of the following methods for each account:

1. Performance or forfeiture bond. a. If the owner chooses to submit a bond, it shall be in the amount determined according to par. (e)2. conditioned upon faithful performance by the owner, and any successor in interest, of all closure or long-term care requirements of the approved plan

of operation, or if no approved plan of operation exists for the facility, all applicable requirements in sub. (8) or (9). The bond shall be delivered to the department as part of an interim license submittal or an initial operating license application. Bond forms shall be supplied by the department.

b. Bonds shall be issued by a surety company authorized to do surety business in this state. At the option of the owner, a performance bond or a forfeiture bond may be filed. The department shall be the obligee of the bond. Surety companies may have the opportunity to complete the closure or long-term care of the facility in lieu of cash payment to the department if the owner or any successor in interest fails to carry out the closure or long-term care requirements of the approved plan of operation, or the applicable requirements in sub. (8) or (9). The department shall mail notification of its intent to use the funds for that purpose to the last known address of the owner. If the owner submits a written request for a hearing to the secretary of the department within 20 days after the mailing of the notification, the department shall, prior to using the funds, hold a hearing for the purpose of determining whether or not the closure or long-term care requirements of the approved plan of operation or the applicable requirements in sub. (8) or (9) have been carried out.

c. Each bond shall provide that as long as any obligation of the owner for closure or long-term care remains, the bond may not be cancelled by the surety, unless a replacement bond or other proof of financial responsibility under this subsection is provided to the department by the owner. If the surety proposes to cancel such a bond, the surety shall provide notice to the department in writing by registered or certified mail not less than 90 days prior to the proposed cancellation date. Not less than 30 days prior to the expiration of the 90-day notice period, the owner shall deliver to the department a replacement bond or other proof of financial responsibility under this subsection, 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 or long-term care.

d. If the surety company becomes bankrupt or insolvent or its authorization to do business in the state is revoked or suspended, the owner shall, within 30 days after receiving written notice thereof, deliver to the department a replacement bond or other proof of financial responsibility under this subsection 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 or long-term care.

2. Deposit with the department. An owner may deposit cash, certificates of deposit, or U.S. government securities with the department, the amount of the deposit shall be determined according to par. (e)1. and shall be submitted as part of an interim license submittal or an initial operating license application. 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 or long-term care requirements of the approved plan of operation or the applicable requirements in sub. (8) or (9) if the owner fails to do so. The department shall mail notification of its intent to use funds for that pur-

pose to the last known address of the owner. If the owner submits a written request for a hearing to the secretary of the department within 20 days after the mailing of the notification, the department shall, prior to using the funds, hold a hearing for the purpose of determining whether or not the closure or long-term care requirements of the approved plan of operation or the applicable requirements in sub. (8) or (9) have been carried out.

3. Escrow account. If the owner establishes an escrow account, it shall be with a bank or financial institution located within the state of Wisconsin which is examined and regulated by the state or a federal agency in the amount determined according to par. (e)1. The assets in the escrow account shall consist of cash, certificates of deposit, or U.S. government securities. All interest payments shall be accumulated in the account. A duplicate original of the escrow agreement with original signatures shall be submitted to the department as part of an interim license submittal or an initial operating license application. Escrow account forms shall be supplied by the department. The department shall be a party to the escrow agreement, which shall provide that there shall be no withdrawals from the escrow account except as authorized in writing by the department. The escrow agreement shall further provide that the department shall have the right to withdraw and use part or all of the funds in the escrow account to carry out the closure or long-term care requirements of the approved plan of operation or the applicable requirements in sub. (8) or (9) if the owner fails to do so. The department shall mail notification of its intent to use funds for that purpose to the last known address of the owner. If the owner submits a written request for a hearing to the secretary of the department within 20 days after the mailing of the notification, the department shall, prior to using the funds, hold a hearing for the purpose of determining whether or not the closure or long-term care requirements of the approved plan of operation or the applicable requirements in sub. (8) or (9) have been carried out.

4. Irrevocable trust. If the owner creates an irrevocable trust, it shall be exclusively for the purpose of ensuring that the owner or any successor in interest will comply with the closure or long-term care requirements of the approved plan of operation, or if no approved plan of operation exists for the facility, the applicable requirements in sub. (8) or (9). The trust agreement shall designate the department as sole beneficiary. The trustee shall be a bank or other financial institution located within the state of Wisconsin, which has the authority to act as a trustee and whose trust operations are regulated and examined by the state or a federal agency. The trust corpus shall consist of cash, certificates of deposit or U.S. government securities in the amount determined according to par. (e)1. All interest payments shall be accumulated in the account. A duplicate original of the trust agreement with original signatures shall be submitted to the department for approval as part of an interim license submittal or an initial operating license application. Trust forms shall be supplied by the department. The trust agreement shall provide that there shall be no withdrawals from the trust fund except as authorized by the department. The trust agreement shall further provide that sufficient monies shall be paid from the trust fund to the beneficiary in the event that the owner or any successor in interest fails to complete the closure or long-term care requirements of the approved plan of operation, or if no approved plan of operation exists for the facility, the applicable requirements in sub. (8) or (9). The department shall mail notification of its

intent to use funds for that purpose to the last known address of the owner. If the owner submits a written request for a hearing to the secretary of the department within 20 days after the mailing of the notification, the department shall, prior to using the funds, hold a hearing for the purpose of determining whether or not the closure or long-term care requirements of the approved plan of operation or the applicable requirements in sub. (8) or (9) have been carried out.

5. Letter of credit. a. If the owner chooses to submit a letter of credit, it shall be in the amount determined according to par. (e)2. conditioned upon faithful performance by the owner and any successor in interest, of all closure or long-term care requirements of the approved plan of operation, or if no approved plan of operation exists for the facility, the applicable requirements in sub. (8) or (9). The original letter of credit shall be delivered to the department as part of an interim license submittal or an initial operating license application. Letter of credit forms shall be supplied by the department.

b. Letters of credit shall be issued by a bank or financial institution which is examined and regulated by a federal agency, or in the case of a bank or financial institution located within the state of Wisconsin, which is examined and regulated by the state or a federal agency. The department shall be the beneficiary of the letter of credit.

c. Each letter of credit shall provide that as long as any obligation of the owner for closure or long-term care remains, the letter of credit may not be cancelled by the bank or financial institution, unless a replacement letter of credit or other proof of financial responsibility under this subsection is provided to the department by the owner. If the bank or financial institution proposes to cancel such a letter of credit, the bank or financial institution shall provide notice to the department in writing by registered or certified mail not less than 90 days prior to the proposed cancellation date. Not less than 30 days prior to the expiration date of the 90 day notice period, the owner shall deliver to the department a replacement letter of credit or other proof of financial responsibility under this subsection, in the absence of which all storage, treatment or disposal operations shall immediately cease and the letter of credit shall remain in effect as long as any obligation of the owner remains for closure or long-term care.

d. If the bank or financial institution becomes bankrupt or insolvent or if its authorization to do business is revoked or suspended, the owner shall, within 30 days after receiving written notice thereof, deliver to the department a replacement letter of credit or other proof of financial responsibility under this subsection, in the absence of which all storage, treatment or disposal operations shall immediately cease and the letter of credit shall remain in effect as long as any obligation of the owner remains for closure or long-term care.

e. The letter of credit shall further provide that the department shall have the right to withdraw and use part or all of the funds to carry out the closure or long-term care requirements of the plan of operation or the applicable requirements in sub. (8) or (9) if the owner fails to do so. The department shall mail notification of its intent to use the funds for that purpose to the last known address of the owner. If the owner submits a written request for a hearing to the secretary of the department within 20 days after the mailing of the notification, the department shall prior

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to using the funds, hold a hearing for the purpose of determining whether or not the closure or long-term care requirements of the approved plan of operation or the applicable requirements in sub. (8) or (9) have been carried out.

6. Net worth test. a. Only a company that meets the definition in s. 144.443 (1) (b), Stats., may use the net worth method of providing proof of financial responsibility.

b. The owner shall comply with the net worth test requirements of s. 144.443 (4) and (6) or (7), Stats., and the minimum security requirements of s. 144.443 (8) or (9), Stats., whichever is applicable.

c. Companies using the net worth test to provide proof of financial responsibility for more than one facility shall use the total cost of compliance for all facilities in determining the net worth to closure and long-term care cost ratio.

d. The department determinations under the net worth test shall be done in accordance with s. 144.443 (5), Stats.

7. Insurance. a. If the owner chooses to submit an insurance policy for closure or long-term care, it shall be issued for the maximum risk limit determined according to par. (e)3. A certificate of insurance shall be delivered to the department as part of an interim license submittal or an initial operating license application. Certificates of insurance shall be supplied by the department.

b. At a minimum, the agent or broker shall be licensed as a surplus lines insurance agent or broker. The department shall determine the acceptability of a surplus lines insurance company to provide coverage for proof of financial responsibility. The department shall base the determination on any evaluations prepared in accordance with s. 618.41 (6) (d), Stats., by the office of the commissioner of insurance. The department shall be the beneficiary of the insurance policy.

c. The insurance policy shall provide that, as long as any obligation of the owner for closure or long-term care remains, the insurance policy shall not be cancelled by the insurer, unless a replacement insurance policy or other proof of financial responsibility under this subsection is provided to the department by the owner. If the insurer proposes to cancel such an insurance policy, the insurer shall provide notice to the department in writing by registered or certified mail not less than 90 days prior to the proposed cancellation date. Not less than 30 days prior to the expiration of the 90-day notice period, the owner shall deliver to the department a replacement insurance policy or other proof of financial responsibility under this subsection, in the absence of which all disposal operations shall immediately cease and the policy shall remain in effect as long as any obligation of the owner remains for closure or long-term care.

d. If the insurance company becomes bankrupt or insolvent or if the company receives an unfavorable evaluation under s. 618.41 (6) (d), Stats., the owner shall, within 30 days after receiving written notice thereof, deliver to the department a replacement insurance policy or other proof of financial responsibility under this subsection, in the absence of which all disposal operations shall immediately cease and the

policy shall remain in effect as long as any obligation of the owner remains for closure or long-term care.

e. The insurance policy shall further provide that funds, up to an amount equal to the maximum risk limit of the policy, will be available to the department to carry out the closure and long-term care requirements of the approved plan of operation, or if no approved plan of operation exists, all applicable requirements in sub. (8) or (9), if the owner fails to do so. The department shall mail notification of its intent to use the funds for that purpose to the last known address of the owner. If the insurer or owner submits a written request for a hearing to the secretary of the department within 20 days after the mailing of the notification, the department shall prior to using the funds, hold a hearing for the purpose of determining whether or not the closure or long-term care requirements of the approved plan of operation or the applicable requirements in sub. (8) or (9) have been carried out.

f. Each insurance policy shall contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditioned upon the consent of the insurer, provided such consent is not unreasonably refused.

Note: These forms may be obtained from the Department of Natural Resources, Bureau of Solid Waste Management, P.O. Box 7921, Madison, Wisconsin, 53707 or any district office.

8. Other methods. The department shall consider other financial commitments made payable to or established for the benefit of the department to ensure the owner or operator will comply with the closure or long-term care requirements of the approved plan of operation, or if no approved plan of operation exists for the facility, the applicable requirements in sub. (8) or (9). The department shall review the request of any owner or operator to establish proof of financial responsibility under this subsection. The owner shall submit the request and all supporting information as part of the plan of operation.

(d) *Cost estimates.* 1. For the purpose of determining the amount of proof of financial responsibility that is required in par. (a), the owner shall estimate the total cost of closure for the point in time in the operation of the facility when the extent or manner of its operation make closure most expensive, estimate the annual cost of long-term care of the facility for the period of owner responsibility and submit the estimated closure and long-term costs, together with all necessary justification to the department for approval, as part of an interim license submittal or a plan of operation submittal. The costs shall be reported on a per unit basis. The source of the estimates shall be indicated.

2. At a minimum, closure costs shall include any necessary cover material, topsoil, seeding, fertilizing, mulching, labor, and disposal or decontamination of hazardous waste and residues on equipment and structures.

3. At a minimum, long-term care costs shall include land surface care; gas monitoring; leachate pumping, transportation, monitoring and treatment; groundwater monitoring, collection and analysis; maintenance of facility monitoring and waste containment devices; and security requirements necessary to prevent hazards to human health.

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4. The estimated annual rate of inflation shall be the latest percent change in the annual gross national product implicit price deflator published in the survey of current business by the bureau of economic analysis, U.S. department of commerce.

5. The estimated annual rate of interest shall be the rate specified by the financial institution managing the fund or deposit.

(e) *Formulas for calculating the amount of proof of financial responsibility.* The owner shall, as part of an interim license submittal or a plan of operation submittal, perform the calculation of the formula for the chosen method of providing proof of financial responsibility for closure and for long-term care. 1. Deposits in escrow, trust or department accounts.

a. Interest bearing for closure. The formula for closure shall be:

$$D = C \frac{(1 + f)}{(1 + i)}$$

in which:

- D = the unknown deposit for closure
- C = the estimated cost of closure
- f = the estimated annual rate of inflation
- i = the estimated annual rate of interest

b. Interest bearing accounts for long-term care. 1) The following information used in calculating the amounts deposited to the long-term care account shall be specified in an interim license submittal or a plan of operation submittal: the rate of outpayment during the period of long-term care, expressed in equal annual outpayments or unequal annual outpayments, and the equal annual rate of inpayment, expressed as either real dollar inpayments or actual dollar inpayments.

When equal annual outpayments, actual dollar inpayments and a closure period are used, the formula shall be expressed as:

$$A = \left[R (1 + f)^{SL} \frac{(1 + f)^c}{(1 + i)^c} \left[\frac{1 - \left(\frac{1 + f}{1 + i} \right)^{LTC}}{\left(\frac{1 + i}{1 + f} \right) - 1} \right] \right] \div \left[(1 + i) \left[\frac{(1 + i)^{SL} - 1}{i} \right] \right]$$

3) When equal annual outpayments, actual dollar inpayments and no closure period are used, the formula shall be expressed as:

$$A = \left[R (1 + f)^{SL} \left[\frac{1 - \left(\frac{1 + f}{1 + i} \right)^{LTC}}{\left(\frac{1 + i}{1 + f} \right) - 1} \right] \right] \div \left[(1 + i) \left[\frac{(1 + i)^{SL} - 1}{i} \right] \right]$$

4) When unequal annual outpayments, actual dollar inpayments and a closure period are used, the formula shall be expressed as:

$$A = \left[\sum \left[R_x (1+f)^{SL} \left(\frac{1+f}{1+i} \right)^{x+c} \right] \right] \div \left[(1+i) \left[\frac{(1+i)^{SL} - 1}{i} \right] \right]$$

5) When unequal annual outpayments, actual dollar inpayments and no closure period are used, the formula shall be expressed as:

$$A = \left[\sum \left[R_x (1+f)^{SL} \left(\frac{1+f}{1+i} \right)^x \right] \right] \div \left[(1+i) \left[\frac{(1+i)^{SL} - 1}{i} \right] \right]$$

6) When equal annual outpayments, real dollar inpayments and a closure period are used, the formula shall be expressed as:

$$A = \left[R (1+f)^{SL} \left(\frac{1+f}{1+i} \right)^c \left[\frac{1 - \left(\frac{1+f}{1+i} \right)^{LTC}}{\left(\frac{1+f}{1+i} \right) - 1} \right] \right] \div \left[(1+i)^{SL+1} \left[\frac{1 - \left(\frac{1+f}{1+i} \right)^{SL}}{1-f} \right] \right]$$

7) When equal annual outpayments, real dollar inpayments and no closure period are used, the formula shall be expressed as:

$$A = \left[R (1+f)^{SL} \left[\frac{1 - \left(\frac{1+f}{1+i} \right)^{LTC}}{\left(\frac{1+f}{1+i} \right) - 1} \right] \right] \div \left[(1+i)^{SL+1} \left[\frac{1 - \left(\frac{1+f}{1+i} \right)^{SL}}{1-f} \right] \right]$$

8) When unequal annual outpayments, real dollar inpayments and a closure period are used, the formula shall be expressed as:

$$A = \left[\sum \left[R_x (1+f)^{SL} \left(\frac{1+f}{1+i} \right)^{x+c} \right] \right] \div \left[(1+i)^{SL+1} \left[\frac{1 - \left(\frac{1+f}{1+i} \right)^{SL}}{1-f} \right] \right]$$

9) When unequal annual outpayments, real dollar inpayments and no closure period are used, the formula shall be expressed as:

$$A = \left[\sum \left[R_x (1+f)^{SL} \left(\frac{1+f}{1+i} \right)^x \right] \right] \div \left[(1+i)^{SL+1} \left[\frac{1 - \left(\frac{1+f}{1+i} \right)^{SL}}{i-f} \right] \right]$$

in which:

A = the unknown inpayment for long-term care per year of active facility life

i = the estimated annual rate of interest

f = the estimated annual rate of inflation

SL = the estimated active life of the facility in years

R = the estimated annual cost

R_x = The estimated unequal annual costs

x = the year of long-term care

LTC = the period of long-term care

c = the closure period as a fraction of one year

Σ = the sum from year 1 through the last year of LTC

2. Bonds and letters of credit. a. Non-interest bearing accounts for closure. The formula for closure is:

$$CB = C (1 + f)$$

in which:

CB = the unknown amount of the bond or letter of credit for closure

C = the estimated closure cost

f = the estimated annual rate of inflation

b. Non-interest bearing accounts for long-term care. The rate of outpayment shall be as specified in par. (e)1.b., and the rate of inpayment shall be in equal actual dollar inpayments.

When equal annual outpayments are used, the formula shall be:

$$PB = \left[R (1 + f)^{SL+1+c} \left[\frac{(1 + f)^{LTC} - 1}{f} \right] \right] \div SL$$

When unequal annual outpayments are used, the formula shall be:

$$PB = \left[\sum \left[R_x (1 + f)^{SL+x+c} \right] \right] \div SL$$

in which:

PB = the unknown bond or letter of credit amount for long-term care to increase per year of active facility life;

f = the estimated annual rate of inflation;

SL = the estimated active life of the site facility;

R = the estimated annual costs;

R_x = the estimated unequal annual costs

LTC = the period of long-term care;

x = the year of the long-term care;

c = the closure period as a fraction of one year

Σ = the sum from year 1 through the last year of LTC

3. Insurance. a. Closure. The formula shall be:

$$CI = C (1 + f)$$

in which:

CI = the unknown amount of the closure insurance

C = the estimated closure cost

f = the estimated annual rate of inflation

b. Long-term care. 1) The rate of outpayment shall be as specified in par. (e) 1.b. When equal annual outpayments are used, the formula shall be:

$$INS = \left[R (1 + f)^{SL+1+c} \left[\frac{(1 + f)^{LTC} - 1}{f} \right] \right]$$

When unequal annual outpayments are used, the formula shall be:

$$INS = \left[\Sigma \left[R_x (1 + f)^{SL+x+c} \right] \right]$$

in which:

INS = the unknown amount of the long-term care insurance

f = the estimated annual rate of inflation

SL = the estimated action life of the facility in years

R = the estimated annual costs

R_x = the estimated unequal annual costs

LTC = the long-term care period

x = the year of long-term care

c = the closure period as a fraction of a year

Σ = the sum of year 1 through the last year of LTC

(f) *Changing methods of proof of financial responsibility.* The owner of a hazardous waste facility may change from one method of providing proof of financial responsibility under par. (c) to another, but not more than once per year. Such a change may only be made on the anniversary of the submittal of the original method of providing proof of financial responsibility.

(g) *Adjustment of financial responsibility.* The owner of a hazardous waste facility shall prepare a new closure cost estimate whenever a substantial change in the closure plan affects the cost of closure and a new long-term care cost estimate whenever a substantial change in the long-term care requirements in the approved plan of operation, or if no approved plan of operation exists, in sub. (9), affects the cost of long-term care. Proof of the increase in the amount of all bonds, letters of credit, escrow accounts and trust accounts established under this subsection shall be submitted annually to the department. The department may adjust the amount of the required proof of financial responsibility for closure or long-term care based upon prevailing or projected interest and inflation rates and the latest cost estimates, and may annually require the owner or operator to adjust the amount of proof of financial responsibility accordingly.

(h) *Access and default.* Whenever on the basis of any reliable information, and after opportunity for hearing, the department determines that an owner or operator of a hazardous waste facility is in violation of any of the requirements for closure or long-term care specified in the approved plan of operation, or if no approved plan of operation exists, in sub. (8) or (9), the department and its designees shall have the right to enter upon the facility and carry out the closure or long-term care requirements. The department may use part or all of the money deposited with it, or the money deposited in escrow or trust accounts, or performance or forfeiture bonds, or letters of credit, or funds accumulated under other approved methods to carry out the closure or long-term care requirements.

(i) *Authorization to release funds.* 1. Closure. When an owner or operator has completed closure, the owner may apply to the department for release of a bond or letter of credit or return of money held on deposit, in escrow, or in trust for closure of the facility. The application shall be accompanied by an itemized list of costs incurred. Upon determination by the department that complete closure has been accomplished, the department shall in writing authorize release and return of all funds accumulated in such accounts or give written permission for cancellation of a bond or letter of credit. Determinations shall be made within 90 days of the application.

2. Long-term care. One year after closure, and annually thereafter for the period of owner responsibility, the owner, who has carried out all necessary long-term care during the preceding year, may make application to the department for reimbursement from an escrow account, trust account, deposit with the department, or other approved methods, or for reduction of the bond, insurance or letter of credit equal to the estimated costs for long-term care for that year. The application shall be accompanied by an itemized list of costs incurred. Upon determination that the expenditures incurred are in accordance with the long-term care requirements anticipated in the approved plan of operation, or if no approved plan of operation exists, are in accordance with the requirements in sub. (9), the department may authorize in writing the release of the funds or approve a reduction in the bond or letter of credit. Prior to authorizing a release of the funds or a reduction of the bond or letter of credit, the department shall determine that adequate funds exist to complete required long-term care work for the remaining period of owner responsibility. Determinations shall be made within 90 days of the application. Any funds remaining in an escrow account, trust account, or on deposit with the department at the termination of the period owner responsibility shall be released to the owner.

(11) **FACILITY LIABILITY REQUIREMENTS.** The owner or operator of a hazardous waste facility or group of facilities shall have and maintain liability insurance from an insurer licensed or eligible to insure facilities in the jurisdiction where the facilities are located, for sudden and accidental occurrences in the amount of \$1 million per occurrence with an annual aggregate per firm of \$2 million, exclusive of legal defense costs, for claims arising out of injury to persons or property from the operations of each such hazardous waste facility or group of facilities. The deductible written into the insurance policy shall not exceed 5% of the per incident limit of liability of the policy.

(12) **WASTE MANAGEMENT FUND.** (a) *Applicability.* 1. All owners or operators of licensed hazardous waste disposal facilities shall pay to the department a tonnage fee for each ton of hazardous waste or solid waste received and disposed of at the facility, or a minimum waste management fund base fee of \$100, whichever is greater, facility no longer receives waste and begins closure activities, except as otherwise provided in s. 144.441 (3) (b) or (c), Stats. The department shall deposit all tonnage and waste management base fees into the waste management fund provided for in s. 25.45, Stats.

2. For all hazardous waste disposal facilities with a plan of operation approved under s. 144.44 (3), Stats., the owner shall choose to be responsible for the long-term care of the facility for either 20 or 30 years after

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facility closure. The fees to be paid by the owner or operator into the waste management fund shall be in accordance with par. (c) 1. and 4., if applicable, or par. (c) 2., whichever fee is greater.

3. All solid waste land disposal facilities approved and licensed under ch. NR 180, shall pay the solid waste tonnage fees for all solid waste received and disposed of at the facility and the hazardous waste tonnage fees for all small quantities of hazardous waste received and disposed of at the facility. The fees to be paid by the owner or operator into the waste management fund shall be in accordance with par. (c) 1. and 4., if applicable, or par. (c) 2., whichever fee is greater.

4. For all hazardous waste or solid waste land disposal facilities without a plan of operation approved under s. 144.44 (3), Stats., the fees to be paid by the owner or operator into the waste management fund shall be those indicated under the 30 year rate of payment in par. (c) 1. and 4., if applicable, or par. (c) 2., whichever fee is greater.

5. For those companies which have provided proof of financial responsibility by the net worth method under s. 144.443 (4) and (8), Stats., the fees to be paid by the owner or operator into the waste management fund shall be in accordance with par. (c) 3. and 4., if applicable, or par. (c) 2., whichever fee is greater.

(b) *Certification.* The owner or operator of a licensed hazardous waste disposal facility shall certify, on a form provided by the department, the amount of hazardous waste received and disposed of during the preceding reporting period. The department shall specify the term of the reporting period on the certification form. The department shall mail the certification form to the owner or operator every January. The certification form shall be completed and returned to the department with the appropriate fee within 45 days after mailing of the form by the department to the owner or operator. An owner or operator failing to submit the waste management certification form and appropriate fees within 45 days after mailing of the form to the owner or operator shall pay a late processing fee of \$50.

(c) *Fees.* 1. The hazardous waste tonnage fees established in s. 144.44 (4), Stats., are summarized in table VIII.

TABLE VIII
WASTE MANAGEMENT FUND TONNAGE FEES

Waste Type	Rate of Payment	
	20 Years	30 Years
	Period of Owner Responsibility	
a. Hazardous wastes	35¢/ton	15¢/ton
b. Hazardous ashes or sludges from electric and process steam generating facilities	3.5¢/ton	1.5¢/ton
c. Hazardous sludges produced by waste treatment or manufacturing processes at pulp or paper mills	3.5¢/ton	1.5¢/ton
d. Hazardous manufacturing process solid wastes from foundries	3.5¢/ton	1.5¢/ton
e. Hazardous sludges produced by municipal wastewater treatment facilities	3.5¢/ton	1.5¢/ton

2. As provided in s. 144.441 (5), Stats., the owner or operator shall pay to the department a waste management fund base fee of \$100 for each calendar year.

3. The facilities described in par. (a) 5. shall increase the tonnage fees in subpar. 1. and if applicable, subpar. 4. by 25%.

4. The solid waste tonnage fees established in s. 144.441 (4) (a) and (d), Stats., shall be paid for each ton of solid waste received and disposed of at a hazardous waste land disposal facility.

(d) *Use of fund.* Only an approved facility as defined in s. 144.441 (2) (a) 1., Stats., is eligible for use of the money accumulated in the waste management fund. The monies in the waste management fund shall be expended exclusively as set forth in s. 144.441 (6), Stats.

(e) *Determination of waste tonnages.* 1. Determination by owner or operator. The owner or operator shall use one of the following methods for determining the number of tons of waste received and disposed of at the land disposal facility.

- a. The owner or operator may use actual weight or volume records.
- b. The owner or operator may use manifest records.

2. Conversion factors. The conversion factors in table IX shall be used. All conversion factors are based on wet densities.

TABLE IX
CONVERSION FACTORS

Liquid wastes	Actual weighing of the waste material is required.
Pulp and papermill sludge	
As delivered - uncompacted	1,800 pound/cubic yard
In-field - compacted	2,200 pounds/cubic yard
Municipal wastewater sludge	
	1,684 pounds/cubic yard
Utility ash - fly and bottom	
As delivered - uncompacted	2,200 pound s/cubic yard
In-field - compacted	2,400 pounds/cubic yard
Foundry wastes	
As delivered - uncompacted	2,600 pounds/cubic yard
In-field - compacted	3,000 pounds/cubic yard

3. Department estimates. The department may estimate by waste category the number of tons received at a hazardous waste disposal facility. The department's estimate shall appear on the certification form and shall be the number of tons received and reported for the previous reporting period.

(f) *Waste management fund expenditures.* 1. Payments for long-term care after termination of owner responsibility. The department shall determine the necessary maintenance requirements for the long-term care of an approved hazardous waste disposal facility after the termination of the owner's responsibility. The department shall comply with s. 16.75, Stats., when applicable, for contracting services for the required long-term care maintenance of hazardous waste disposal facilities.

2. Payments of related costs. The department shall comply with s. 144.441 (6) (f), Stats., prior to making any expenditures from the waste management fund under s. 144.441 (6) (e), Stats.

3. Other payments. The department may expend monies from the waste management fund in accordance with s. 144.441 (6) (g) to (i), Stats.

History: Cr. Register, July, 1981, No. 307, eff. 8-1-81; r. and recr. (10), Register, September, 1981, No. 309, eff. 10-1-81; reprinted to correct formulas in sub. (10), Register, November, 1981, No. 311; am. (10) (c) 4., (10) (d) 1. a. and 2. a., Register, June, 1982, No. 318, eff. 7-1-82; am. (10) and (12), Register, May, 1984, No. 341, eff. 5-1-84.

NR 181.43 Storage standards. (1) GENERAL. Except as otherwise provided in sub. (2), no person shall maintain or operate a hazardous waste storage facility unless the person has obtained an interim license or an operating license from the department, in accordance with the requirements of s. NR 181.53 or 181.55.

(2) EXEMPTIONS. (a) A generator may accumulate hazardous waste on-site without a storage license for 90 days or less provided that:

1. Within 90 days, all such waste is either:

a. Shipped off-site to a designated facility which meets the requirements of s. NR 181.23 (2) (b); or

b. Treated, stored or disposed of in an on-site facility that is either licensed under subch. VI or exempt from licensing under s. NR 181.42 (1) (a).

2. The waste is placed in containers which meet the packaging requirements of s. NR 181.26 (1) and are managed in accordance with subs. (6) (a) and (8) except for sub. (8) (d), or is placed in tanks, provided the generator complies with sub. (6), with the exception of subs. (6) (c) and (d), and sub. (7), with the exception of sub. (7) (f);

3. The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container or tank;

4. Each container is properly labeled and marked according to s. NR 181.26 (2) and (3); and

5. The generator complies with the contingency plan, security and personnel training requirements for owners and operators specified in s. NR 181.42 (4) and (5).

(b) The owner or operator of industrial wastewater facilities, sewerage systems and waterworks treating liquid wastes which are approved under s. 144.04, Stats., or permitted under ch. 147, Stats., are exempt from all the requirements of this section, except that this exemption does not apply to the storage or disposal of sludges or other hazardous waste produced during the treatment process.

(c) The owner or operator of a solid waste disposal site or facility licensed under ch. NR 180, provided that the only hazardous waste the facility stores is excluded from regulation under this subchapter by s. NR 181.13 and the facility has been approved under s. NR 181.13 (7) to accept small quantities of hazardous waste.

(d) The owners or operators of facilities used for the storage of materials resulting from a mining operation as defined in s. 144.81 (5), Stats., except where requirements in this section are referenced in the rules adopted by the department under s. 144.435 (lm), Stats.

(3) FEASIBILITY REPORT. (a) Unless specifically exempted in sub. (2), no person shall establish, construct or expand a hazardous waste storage facility or be issued an initial operating license under s. NR 181.55 without first obtaining written approval of a feasibility report and subsequently obtaining approval of a plan of operation from the department. The purpose of the feasibility report is to determine whether the site has potential for use as a hazardous waste storage facility and to identify any conditions which the applicant shall include in the plan of operation. Favorable feasibility determination does not guarantee plan of operation approval and licensure. The feasibility report shall be submitted in accordance with the requirements of s. NR 181.51 and shall contain the applicable material required by s. NR 181.44 (6). The applicant is encouraged to submit an initial site report as outlined in s. NR 181.44 (5). The department may waive in writing any of the complete feasibility report requirements specified in s. NR 181.44 (6). Feasibility report re-

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