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# RCRA, Superfund & EPCRA Hotline Training Module

Introduction to:

**RCRA Financial Assurance**  
(40 CFR Parts 264/265, Subpart H)

Updated October 1999

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# RCRA FINANCIAL ASSURANCE

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## 1. INTRODUCTION

Owning and operating a hazardous waste treatment, storage, and disposal facility (TSDF) is a costly venture that requires financial stability from the beginning of the permitting process through the cessation of the post-closure period. Mainly, an owner and operator must demonstrate that funds will be available to properly close the facility and provide post-closure care. A TSDF owner and operator must also have the financial resources to compensate third parties for any injury or accidents that might result from facility operations. The requirements for such financial assurance appear in Part 264/265, Subpart H.

In order to demonstrate that they have the financial resources to operate a hazardous waste facility, an owner and operator must use one or more of a set of financial assurance mechanisms designated by EPA. This training module addresses the financial assurance standards, explaining first the allowable financial assurance mechanisms and then the extent of financial coverage required. This module may introduce some unfamiliar legal and financial concepts.

After completing this module, you will be able to explain the financial assurance requirements for closure and post-closure care. Specifically, you will be able to:

- Identify the types of facilities subject to the financial assurance requirements for closure and post-closure
- Calculate cost estimates
- Describe the allowable mechanisms for financial assurance, including which mechanisms can be used together and under what conditions.

Additionally, you will be able to explain the financial assurance requirements for accident liability coverage. Specifically, you will be able to:

- Discuss the applicability of sudden and nonsudden liability provisions
- Specify the amount of liability coverage required for single facilities and multiple facilities
- List allowable mechanisms and combinations of mechanisms that can be used to satisfy financial assurance liability requirements.

Use this list of objectives to check your knowledge of this topic after you complete the training session.

## 2. REGULATORY SUMMARY

EPA established specific closure and post-closure care requirements to minimize long-term environmental and health threats posed by hazardous waste TSDFs. These requirements alone, however, do not guarantee that owners and operators of TSDFs will have sufficient funds to properly close and maintain the site. EPA promulgated the financial assurance requirements to ensure that owners and operators could not default to federal funds because they were unable or unwilling to cover significant closure and post-closure costs. Part 264/265, Subpart H, outlines the mechanisms an owner and operator may use to prove that funds will be available as well as the amounts that must be provided. Subpart H also establishes minimum amounts of liability coverage for accidents during the active life of the facility. Together, these requirements comprise the RCRA provisions known as financial assurance.

### 2.1 APPLICABILITY

According to §§264/265.140(a), the requirements of Subpart H apply to owners and operators of all hazardous waste TSDFs. The requirements of this subpart are not, however, applicable to state and federally owned or operated facilities (§§264/265.140(c)).

### CLOSURE

All TSDFs, except those exempted in §§264/265.1, must fulfill certain closure requirements. As specified in §§264/265.142 and 264/265.143, these TSDFs must demonstrate financial assurance for closure. The closure requirements in Part 264/265, Subpart G, detail steps for safely and permanently ceasing operations at active TSDFs. According to these requirements, owners and operators must submit a closure plan that details the steps necessary to close or partially close the facility. In addition to the general facility closure obligations of Subpart G, owners and operators must also comply with closure and post-closure requirements for specific hazardous waste management and disposal units (e.g., surface impoundments and landfills) in Parts 264 and 265. Even those surface impoundments and waste piles that the owner and operator intends to clean close by removing hazardous waste at closure are required to have contingent closure plans (§§264.228(c)(1)(i) and 264.258(c)(1)(i)).

### POST-CLOSURE

Post-closure care for inactive facilities entails long-term maintenance, monitoring, and recordkeeping to ensure continuing protection of human health and the environment after a TSDF has ceased operation. The financial requirements for post-closure care in

§§264/265.144 and 264/265.145 apply to all owners and operators of disposal facilities as defined in §§264/265.140(b). Disposal facilities subject to these requirements include not only landfills, but waste piles, surface impoundments, and tanks that cannot be clean-closed, and therefore must be closed as landfills. These units are then subject to full post-closure care. As part of the post-closure care requirements, owners and operators must submit a post-closure plan that details the operation and maintenance measures needed to ensure that no hazardous waste will migrate off-site. Financial assurance for post-closure care is not required for units that will be clean-closed (see §264.197 for tank systems, §264.228 for surface impoundments, and §264.258 for waste piles). On the other hand, most owners and operators will be required to prepare a contingent post-closure plan to ensure that funds will be available to monitor any migration of waste left on-site in the unforeseen event that a tank system, surface impoundment, or waste pile cannot be clean-closed.

## 2.2 CLOSURE/POST-CLOSURE CARE

After an owner and operator completes the written closure and post-closure plans for a facility, they must determine the implementation cost for both plans by preparing cost estimates based on the cost of a third-party contractor performing closure activities. These estimates provide the base figure for the amount of financial assurance a facility will need to demonstrate.

### COST ESTIMATES

According to §§264/265.142 and 264/265.144, cost estimates must reflect the cost of hiring a third party to conduct all activities outlined in the closure and post-closure plans. If a contingent closure or post-closure plan is required for a permitted surface impoundment or waste pile, the cost of its implementation must be calculated into the final cost estimate for the facility. Closure cost estimates are based on the point in the facility's operating life when closure would be the most expensive. Post-closure cost estimates are based on projected costs for a post-closure period of 30 years, which can only be reduced or extended by the Regional Administrator or state director.

### COST ADJUSTMENTS

Closure and post-closure cost estimates are adjusted annually for inflation until closure is completed. Since a dollar this year is not worth as much as a dollar last year, stating that a facility will cost one hundred dollars to close raises the question, "which dollar should we use to make cost estimates?" There are two ways owners and operators may address this issue. The more obvious and more cumbersome method would be to recalculate the cost estimates completely each year. To save time, however, a simpler method may be used. The Department of Commerce, Bureau of Economic Analysis

(BEA), publishes an official figure, called the Implicit Price Deflator (IPD), which summarizes what a certain group of goods and services costs during that year. An owner and operator can then use the IPD to determine how much prices "went up" (the inflation factor) and make a percentage adjustment to the previous year's closure and post-closure cost estimates. For example, the 1998 IPD is 112.64 and the 1997 IPD is 111.52. By dividing the 1998 IPD by the 1997 IPD, the inflation factor is determined, in this case 1.01. An owner and operator who estimated closure/post-closure costs at \$100 in 1995 dollars would multiply \$100 by the inflation factor of 1.01 to find an updated estimate of \$101 in 1998 dollars. (Note that some states require the use of the most current quarterly IPD to calculate the inflation factor while others require use of the annual figure. In addition, all IPD values are subject to change by the BEA.)

This calculation is illustrated by the following equations:

$$\frac{\text{IPD current year}}{\text{IPD previous year}} = \text{inflation factor}$$

$$(\text{inflation factor}) \times (\text{old estimate}) = \text{new estimate}$$

Inserting the figures given:

$$112.64/111.52 = 1.01 = \text{inflation factor}$$

$$(1.01) \times (\$100) = \$101 = \text{new cost estimate}$$

Historically, the Department of Commerce emphasized the use of the IPD derived from the Gross National Product (GNP), but since December 1991 the Department of Commerce has focused on the use of the Gross Domestic Product (GDP) to derive the IPD. There is only a slight difference between the numbers, and owners and operators may use either to derive the IPD as long as they are consistent in their use of GNP or GDP. If an owner or operator switches from using GNP to GDP, then previous cost estimates must be adjusted accordingly.

Owners and operators must adjust cost estimates following any changes to their closure or post-closure plan that would raise the costs involved. For example, expansion of a surface impoundment might increase the amount of contaminated soil to be removed at closure. The closure and post-closure estimates must be recalculated to reflect the additional expenses.

## **2.3 CLOSURE/POST-CLOSURE FINANCIAL ASSURANCE MECHANISMS**

An owner and operator must use one or more of the specified financial assurance mechanisms to demonstrate that funds are available to pay for closure and post-closure care of a facility.

## MECHANISMS

An owner and operator may demonstrate financial assurance for closure and post-closure by choosing from the following financial assurance mechanisms:

- Trust Fund
- Surety Bonds (two types)
  - Payment Bonds
  - Performance Bonds
- Letter of Credit
- Insurance
- Financial Test
- Corporate Guarantee.

The wording of each mechanism, or instrument, must be identical to the examples in §264.151. The criteria for using each of these mechanisms are discussed below.

### Trust Fund

A trust fund serves as a way to set aside monies specifically earmarked for closure and post-closure costs. Owners and operators pay money into the trust fund during a specified period. By the time a facility closes, the money accumulated in the fund should be adequate to cover the necessary closure costs. The pay-in period for interim status facilities is 20 years, or the remaining operating life of the facility, whichever period is shorter.

For permitted facilities, the owner and operator must make payments into the trust fund for the term of the initial permit or the remaining operating life of the entire facility (as estimated in the closure plan), whichever period is shorter.

The annual payment for the duration of the pay-in period may be calculated using the following equation, where the annual payment (AP) equals the current cost estimate (CE) minus the current value of the trust fund (CV) divided by the number of years remaining in the pay-in period (Y):

$$AP = (CE - CV)/Y$$

### Surety Bonds

A surety bond is a guarantee by a surety company that certain specified obligations will be fulfilled. If the owner and operator fail to pay the closure or post-closure costs specified in a bond, the surety company is liable for the costs. The owner and operator must also establish a standby trust fund into which any payments made by the surety company will be deposited. EPA then uses the trust fund to cover closure costs. There are two types of surety bonds:

### Payment Bond

A payment bond will, in the event an owner and operator fails to pay, fund a standby trust fund in an amount equal to the value (penal sum) of the bond.

### Performance Bond

A performance bond guarantees that the owner and operator will perform the final closure in accordance with the requirements of the facility's permit.

Performance bonds may be paid into a standby trust fund. Interim status facilities can not use performance bonds.

Surety bonds only pay when the owner and operator fails to either pay for or perform closure and post-closure activities. An owner and operator is generally obligated to repay the surety company.

### **Letter of Credit**

To use a letter of credit assuring financial coverage for closure and post-closure care, the facility owner and operator must satisfy the following requirements:

- The owner and operator must obtain a letter of credit that is irrevocable and equals the amount of the cost estimate
- The owner and operator must increase the letter of credit within 60 days whenever the current cost estimate increases
- The owner and operator must establish a standby trust fund into which any payments made by the issuing institution will be deposited
- If the owner and operator fails to fulfill closure or post-closure requirements, the Regional Administrator is entitled to direct the issuing institution to deposit funds into the owner and operator's standby trust fund.

### **Insurance**

In order for the owner and operator of a facility to use insurance as the financial mechanism covering the cost of closure and post-closure care, the following requirements must be satisfied:

- The owner and operator must obtain an insurance policy for a face amount (the total money the insurer is obligated to pay under the policy) at least equal to the cost estimate for closure or post-closure care
- The owner and operator must increase the face amount or obtain other supplementary financial assurance if the cost estimate increases

- The owner and operator must allow assignment of the insurance policy to a successor owner and operator
- The owner and operator must send a copy of the policy to the head of the hazardous waste program in the state, if the state is authorized to administer the RCRA base program. In unauthorized states, a copy is sent to the Regional Administrator
- If the owner and operator fails to pay the premium, the insurer may cancel, terminate, or decide not to renew the policy
- The insurer must be licensed by a state, as off-shore insurers are not acceptable.

### **Financial Test**

The owner and operator may satisfy the requirements for financial assurance by meeting the financial test criteria for either of the following alternatives.

#### Alternative I

- The owner and operator must meet each of the following criteria:
  - Net working capital equals 6 times current closure, post-closure, plugging, and abandonment cost estimates
  - Tangible net worth is greater than \$10 million
  - Ninety percent of total assets are located in the United States, or at least 6 times the current closure, post-closure, and plugging and abandonment cost estimates

**and**

- The owner and operator must satisfy two of the following three ratios:
  - Liabilities to net worth ratio less than 2
  - Current assets to current liabilities ratio greater than 1.5
  - Net income (plus depreciation, depletion, and amortization) to liabilities ratio greater than 0.1.

#### Alternative II

- The owner and operator must meet each of the following criteria:
  - Tangible net worth at least 6 times current closure, post-closure, plugging, and abandonment cost estimates
  - Tangible net worth is greater than \$10 million

- Ninety percent of total assets are located in the United States, or at least 6 times the current closure, post-closure, and plugging and abandonment cost estimates
- The current bond rating for the most recent bond issuance is AAA, AA, A, or BBB as issued by Standard & Poor's, or Aaa, Aa, A, or Baa as issued by Moody's.

The owner and operator must pass one of the two financial tests specified in the closure and post-closure financial assurance requirements. If the owner and operator chooses to use a financial test to meet financial assurance requirements, this must be documented in a letter to the Regional Administrator, signed by the company's Chief Financial Officer, and attached to an independent Certified Public Accountant report examining the owner and operator's annual report.

### **Corporate Guarantee**

In order for the owner and operator of a facility to use a corporate guarantee to ensure financial coverage for closure and post-closure care, the following requirements must be satisfied:

- The guarantor must be a direct corporate parent (a corporation that directly owns at least 50 percent of the voting stock of another corporation or subsidiary), a corporate grandparent (a corporation that indirectly owns over 50 percent of a company through a subsidiary), a sibling corporation (a corporation that shares the same parent corporation), or a firm with a substantial business relationship with the owner and operator
- The guarantor must meet the financial test requirements outlined above
- The guarantor must perform the required closure and post-closure care activities or establish a trust fund to pay a third party to perform them if the owner and operator fails to carry out final closure or post-closure care in accordance with the approved plan.

### **COMBINATIONS**

An owner and operator may combine several financial assurance mechanisms to cover the cost of closure and post-closure care for a facility. For example, an owner and operator can combine trust funds, payment surety bonds, insurance policies, and letters of credit may be combined to meet financial assurance requirements. Performance surety bonds, financial tests, and corporate guarantees cannot be used in combination to demonstrate assurance.

An owner and operator may also use a single financial assurance mechanism to meet the cost of closure and post-closure care for more than one facility. The dollar amount of the funds available through the mechanism must be no less than the sum of funds that would be available if a separate assurance mechanism had been established and maintained for each facility (§§264.143(h), 265.143(g), 264.145(h), and 265.145(g)).

## PERIOD OF COVERAGE

Within 60 days after an acceptable certification of final closure is received, the Regional Administrator notifies the owner and operator that financial assurance for final closure is no longer required. Within 60 days of receipt of acceptable certification that the post-closure care period has been completed, the Regional Administrator notifies the owner and operator that financial assurance for post-closure care is no longer required (§§264.143(i), 265.143(h), 264.145(i), and 265.145(h)).

## 2.4 LIABILITY REQUIREMENTS

The owner and operator are required to maintain accident liability coverage until certification of final closure (§§264/265.147). This coverage ensures that, should an accident resulting in a release of hazardous constituents occur, money will be available to compensate third parties suffering bodily injury or property damage resulting from the accident. Under §§264/265.147(c), an owner and operator may receive a variance from the Regional Administrator if the owner and operator can demonstrate that the levels of financial responsibility required by the regulations are not consistent with the levels of risk associated with the facility's operation. For permitted facilities, this would appear as a permit modification. Variances, however, are seldom granted. Liability coverage is not required for state or federally owned or operated facilities.

TSDFs may be required to demonstrate liability coverage for both sudden and nonsudden accidental occurrences. The applicability of sudden and nonsudden coverage and the differences between them are explained below. The owner and operator may use a combination of mechanisms as long as the amount covered equals the total of sudden and nonsudden liability minimum requirements.

### SUDDEN ACCIDENTAL OCCURRENCES

A sudden accidental occurrence is an event that is not continuous or repeated. Examples of sudden accidental occurrences are fires and explosions. All TSDFs that are subject to financial assurance requirements must have coverage for sudden accidental occurrences (§§264/265.147(a)).

The owner and operator must meet the minimum financial requirements for liability

coverage of sudden accidental occurrences by using one or more of the following allowable mechanisms specified in §§264/265.147(a)(6): insurance, financial test, corporate guarantee, letter of credit, surety bond, and trust fund. The minimum financial requirements include at least \$1 million per occurrence and an annual aggregate of at least \$2 million. While a per occurrence amount limits the payment for any one event, such as a fire, an annual aggregate caps the total dollar value of all claims in one year. These funds will suffice to cover all of the owner and operator's facilities. Table 1 demonstrates such a disbursement of sudden liability funds over a one-year period.

**Table 1**  
**DISBURSEMENT OF SUDDEN LIABILITY FUNDS**

Number of Accidents	Cost per Accident	Amount Paid by Liability Coverage
1	\$3 million	\$1 million
3	\$1 million	first \$2 million
6	\$500,000	\$500,000 on first four

### NONSUDDEN ACCIDENTAL OCCURRENCES

A nonsudden accidental occurrence is an event that takes place over time and involves continuous or repeated exposure to hazardous waste. An example of a nonsudden accidental occurrence is a leaking surface impoundment that contaminates a drinking water source over time. The owner and operator of a surface impoundment, landfill, land treatment facility, or miscellaneous disposal unit must have financial assurance for nonsudden accidental occurrences (§§264/265.147(b)).

The owner and operator must meet the minimum financial requirements for liability coverage of nonsudden accidental occurrences by using one or more of the following allowable mechanisms specified in §§264/265.147(a)(6): insurance, financial test, corporate guarantee, letter of credit, surety bond, or trust fund. The minimum financial requirements include at least \$3 million per occurrence and an annual aggregate of at least \$6 million. These funds will satisfy the requirements for all of the owner or operator's facilities.

Note that these liability minimums apply regardless of the number of facilities held by an owner and operator. Therefore, someone owning multiple facilities only needs one set of coverage for \$3 million/\$6 million. Table 2 demonstrates such a disbursement of nonsudden liability funds over a one-year period.

**Table 2**  
**DISBURSEMENT OF NONSUDDEN LIABILITY FUNDS**

<b>Number of Accidents</b>	<b>Cost per Accident</b>	<b>Amount Paid by Liability Coverage</b>
1	\$4 million	\$3 million
3	\$4 million	\$3 million on first \$3 million on second
6	\$2 million	\$2 million on first three

### **COMBINATION OF LIABILITY COVERAGE LEVELS**

Owners and operators who combine coverage levels for sudden and nonsudden accidental occurrences must maintain liability coverage in the amount of at least \$4 million per occurrence (\$1 million sudden plus \$3 million nonsudden) and \$8 million annual aggregate (\$2 million sudden plus \$6 million nonsudden) (§§264/265.147(b)).

### **PERIOD OF COVERAGE**

Within 60 days after an acceptable certification of final closure is received, the Regional Administrator must notify the owner and operator that liability coverage is no longer required (§§264/265.147(e)). Since final closure occurs before a facility begins post-closure activities, liability coverage is not required during the post-closure period. The Regional Administrator, however, may require liability coverage if closure was not completed in accordance with the facility's closure plan.