

CHECKLIST FOR REVIEW OF FEDERAL RCRA PERMIT APPLICATIONS**SECTION I. CLOSURE POST-CLOSURE PLANS AND FINANCIAL REQUIREMENTS**

Section and Requirement	Federal Regulation	Review Consideration ^a	Location in Application ^b	See Attached Comment Number ^c
I-1 Closure Plans	270.14(b)(13)			
I-1a Closure Performance Standard	270.14(b)(13); 264.111	Describe how closure: minimizes the need for further maintenance; controls, minimizes, or eliminates the 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; and complies with the closure requirements of Subpart G and unit-specific closure requirements.		
I-1b Time and Activities Required for Partial Closure and Final Closure Activities	270.14(b)(13); 264.112(b)(1) through 264.112(b)(7)	Describe the time and all activities required for: partial closure, if applicable; final closure; and maximum extent of operation that will be active during life of facility.		
I-1c Maximum Waste Inventory	270.14(b)(13); 264.112(b)(3)			
I-1d Schedule for Closure	270.14(b)(13); 264.112(b)(6)			
I-1(d)(1) Time Allowed for Closure	270.14(b)(13); 264.112(b)(2); 264.113(a) and (b)			
I-1d(1)(a) Extension for Closure Time	270.14(b)(13); 264.113(a) and (b)			
I-1e Closure Procedures	270.14(b)(13); 264.112;			

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	264.114			
I-1e(1) Inventory Removal	270.14(b)(13); 264.112(b)(3)	Discuss methods for removing, transporting, treating, storing, or disposing of all hazardous wastes and identify the type(s) of off-site hazardous waste management units to be used.		
I-1e(2) Disposal or Decontamination of Equipment, Structure, and Soils	270.14(b)(13); 264.112(b)(4); 264.114	Provide a detailed description of the steps needed to decontaminate or dispose of all facility equipment and structures. Demonstrate that any hazardous constituents (i.e., Appendix VII) left at the unit will not impact any environmental media in excess of Agency-established exposure levels and that direct contact will not pose a threat to human health and the environment.		
I-1e(3) Closure of Disposal Units/Contingent Closures	270.14(b)(13)			
I-1e(3)(a) Disposal Impoundments	270.14(b)(13); 264.228(a)(2)			
I-1e(3)(a)(i) Elimination of Liquids	270.14(b)(13)			
I-1e(3)(a)(ii) Waste Stabilization	270.14(b)(13); 264.228(a)(2) (ii)			
I-1e(3)(b) Cover Design	270.14(b)(13); 264.228(a)(2) (iii);264.310 (a)			
I-1e(3)(c) Minimization of Liquid Migration	270.14(b)(13);	Draft RCRA Guidance Document entitled		

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	264.228(a)(2)(iii)(A); 264.310(a)(1)	<u>Landfill (Design--Liner Systems and Final Cover</u> (1982), suggests the following design for landfill cover systems (from top to bottom): a vegetated top cover, with a minimum of 24 inches of topsoil; a middle drainage layer (at least one foot thick with a saturated conductivity of not less than 1×10^{-3} cm/sec) overlain by a geotextile filter fabric or graded granular filter; and a low permeability bottom layer consisting of two components: an upper component of at least a 20 mil synthetic membrane protected above and below by at least six inches of bedding material, a lower component of at least 24 inches of low permeability (maximum hydraulic conductivity of 1×10^{-7} cm/sec) soil emplaced in lifts not exceeding six inches. For cover designs different than EPA-recommended designs, provide engineering calculations showing the proposed cover will provide long-term minimization of liquid migration through the cover.		
I-1e(3)(d) Maintenance Needs	270.14(b)(13); 264.228(a)(2)(iii)(B); 264.310(a)(2)			
I-1e(3)(e) Drainage and Erosion	270.14(b)(13); 264.228(a)(2)(iii)(C); 264.310(a)(3)	The following information should be provided: data demonstrating that the proposed final slopes will not cause significant cover erosion; description of drainage materials and their permeabilities; engineering calculations		

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		demonstrating free drainage of precipitation off of and out of the cover; and estimation of the potential for drainage-layer clogging.		
I-1e(3)(f) Settlement and Subsidence	270.14(b)(13); 264.228(a)(2)(iii)(D); 264.310(a)(4)	Include the following information: potential foundation compression; potential soil liner compression; and potential waste consolidation and compression resulting from waste dewatering, biological oxidation and chemical conversion of solids to liquids.		
I-1e(3)(g) Cover Permeability	270.14(b)(13); 264.228(a)(2)(iii)(E); 264.310(a)(5)			
I-1e(3)(h) Freeze/Thaw Effects	270.14(b)(13); 264.228(a)(2)(iii); 264.310(a)	Identify the average depth of frost penetration and describe the effects of freeze/thaw cycles on the cover.		
I-1e(4) Closure of Containers	270.14(b)(13); 264.178; 264.112(b)(3); 270.14(b)(13)	Address the following: hazardous waste removal and disposal; container decontamination and disposal; site decontamination and disposal including linings, soil, and washes; maximum inventory.		
I-1e(5) Closure of Tanks	270.14(b)(13); 264.197; 264.112(b)(3)	The description should address the following: waste removal from tanks and equipment; decontamination of all components; verification of decontamination; disposal of wastes and residues; and maximum inventory.		
I-1e(6) Closure of Waste Piles	270.14(b)(13);	The description must address the following:		

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	270.18(h); 264.258	procedure and criteria for determining whether or not decontamination has been successful; and sampling and analytical techniques.		
I-1e(7) Closure of Surface Impoundments	270.14(b)(13); 270.17(f); 264.228(a)(1), (2), and (b)	Surface impoundments without liners or with liners that do not meet the requirements must also provide contingent plans for closure in place and a contingent post-closure plan, except for impoundments requesting a liner exemption in accordance with D-4b.		
I-1e(8) Closure of Incinerators	270.14(b)(13); 264.351	Describe how, at closure, all hazardous waste and hazardous waste residues (including, but not limited to, ash, scrubber waters, and scrubber sludges) will be removed from the incinerator, associated ductwork, piping, air pollution control equipment, sumps, and any other structures or operating equipment such as pumps, valves, etc., that have come into contact with the hazardous waste. Alternatively, describe how the incinerator and associated units and equipment will be dismantled and disposed of as a hazardous waste.		
I-1e(9) Closure of Landfills	270.14(b)(13); 270.21(e); 264.310(a)	Provide detailed plans and engineering report that describes the final cover components in detail. Cover installation and construction quality assurance procedures should be thoroughly described.		
I-1e(10) Closure of Land Treatment Facilities	270.14(b)(13); 264.280(a);			

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	270.20(f)			
I-1e(10)(a) Continuance of Treatment	270.14(b)(13); 264.280(a)(1) through (7)			
I-1e(10)(b) Vegetative Cover	270.14(b)(13); 270.20(f); 264.280(a)(8)			
I-1e(11) Closure of Miscellaneous Units	270.14(b)(13); 270.23(a)(2)			
I-1e(12) Closure of Boilers and Industrial Furnaces	270.14(b)(13); 266.102(a)(2) (vii)	Describe how, at closure, all hazardous waste and hazardous waste residues (including, but not limited to, ash, scrubber waters, and scrubber sludges) will be removed from the BIF unit, associated ductwork, piping, air pollution control equipment, sumps and any other structures or operating equipment such as pumps, valves, etc., that have come into contact with hazardous wastes. Alternatively, describe how the BIF and associated equipment will be dismantled and disposed of. If any wastes, waste residues, contaminated components, subsoils, structures or equipment remain after closure, provide plans for closing the BIF unit as a landfill and provide a post-closure care plan.		
I-1e(13) Closure of Containment Buildings	270.14(b)(13); 264.1102	Show that at closure all hazardous waste, hazardous waste residues, contaminated containment system, contaminated subsoils, and all structures and equipment contaminated with waste and leachate will be		

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		removed. If any wastes, waste residues, contaminated components, subsoils, structures or equipment remain after closure, provide plans for closing the containment building as a landfill and provide a post-closure care plan.		
I-2 Post-Closure Plans	270.14(b)(13)			
I-2a Inspection Plan	270.14(b)(13); 264.118(a); 264.197(b); 264.197(c)(2); 264.226(d)(2); 264.228(b); 264.228(c)(1)(ii); 264.258(b); 264.258(c)(1)(ii); 264.303(c); 264.310(b)	Rationale for determining the length of time between inspections should be provided.		
I-2b Monitoring Plan	270.14(b)(13); 264.118(b)(1); 264.197(b); 264.197(c)(2); 264.226(d)(2); 264.228(b); 264.228(c)(1)(ii); 264.258(b); 264.258(c)(1)(ii); 264.303(c);			

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		264.310(b)			
I-2c	Maintenance Plan	270.14(b)(13); 264.118(b)(2); 264.197(b); 264.197(c)(2); 264.228(b); 264.228(c)(1)(ii); 264.258(b); 264.258(c)(1)(ii); 264.310(b)	Describe the preventative and corrective maintenance procedures, equipment procedures, equipment requirements and material needs.		
I-2d	Land Treatment	270.14(b)(13); 264.280(c)	Describe the operation, inspection, and maintenance programs to be used at the closed facility.		
I-2e	Post-Closure Care for Miscellaneous Units	270.14(b)(13); 270.23(a)(3); 264.603			
1-2f	Post-Closure Security	270.14(b)(13); 264.117(b) and (c)	Demonstrate that for property where hazardous wastes remain after partial or final closure, post-closure use must never be allowed to disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the facility's monitoring system.		
I-2g	Post-Closure Contact	270.14(b)(13); 264.118(b)(3)			
I-3	Notices Required for Disposal	270.14(b)(13)			

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Section and Requirement	Federal Regulation	Review Consideration ^a	Location in Application ^b	See Attached Comment Number ^c
Facilities				
I-3a Certification of Closure	270.14(b)(13); 264.115; 264.280			
I-3b Survey Plat	270.14(b)(13); 264.116			
I-3c Post-Closure Certification	270.14(b)(13); 264.120			
I-3d Post-Closure Notices	270.14(b)(13); 270.14(b)(14); 264.119			
I-4 Closure Cost Estimate	270.14(b)(15); 264.142	Estimate must equal final cost estimate. Estimate must be based on third party closing facility and may use on-site disposal if capacity will exist over life of facility. Estimate must be adjusted for annual inflation as stated in 264.142(b). Estimates may not assume zero cost for hazardous waste handling, and may not incorporate salvage value, facility structures/equipment, land, or other facility assets as offsets.		
I-5 Financial Assurance for Closure	270.14(b)(15); 264.143; 264.151			
I-5a Closure Trust Fund	270.14(b)(15); 264.143(a); 264.151(a)(1)	Provide copy of fund agreement.		
I-5b Surety Bond	270.14(b)(15);			

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	264.143(b), (c); 264.151(b),(c)			
I-5b(1) Surety Bond Guaranteeing Payment into a Closure Trust Fund	270.14(b)(15); 264.143(b); 264.151(b)	Must provide bond or standby trust agreement. Bond must guarantee owner/operator will fund standby trust fund or provide financial assurance equal to penal sum.		
I-5b(2) Surety Bond Guaranteeing Performance of Closure	270.14(b)(15); 264.143(c); 264.151(c)	Guarantee owner/operator will perform closure required as worded in 246.151(c) and Subpart G.		
I-5(c) Closure Letter of Credit	270.14(b)(15); 264.143(d); 264.151(d)	Requires letter of credit for 1 year equal to amount of closure.		
I-5(d) Closure Insurance	270.14(b)(15); 264.143(e); 264.151(e)	Provide copy of certificate of insurance, wording requirement found in 264.151(e).		
I-5(e) Financial Test and Corporate Guarantee for Closure	270.14(b)(15); 264.143(f); 264.151(f),(h)	Signed letter by owner/operator or chief financial officer as specified in 264.151(f),(h) of applicant financial statement. If a parent corporation is guaranteeing closure care, corporate guarantee must accompany.		
I-5(f) Use of Multiple Financial Mechanism	270.14(b)(15); 264.143(g)	Financial assurance instruments must meet requirements stated in 264.143 (a),(b),(c),(d) or (e) that include trust funds, surety bonds, letter of credit, and insurance, respectively.		
I-5(g) Use of Multiple Financial Mechanism for Multiple Facilities	270.14(b)(15); 264.143(h)	Provide financial assurance mechanism showing amount of funds assured.		

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I-6 Post-Closure Cost Estimate	270.14(b)(16); 264.144	Estimate must be based on third party closing facility and may use on-site disposal if capacity will exist over life of facility. Estimate must be adjusted for annual inflation as stated in 264.142(b).		
I-7 Financial Assurance Mechanism for Post Closure Care	270.14(b)(16); 264.145; 264.151			
I-7a Post-Closure Trust Fund	270.14(b)(16); 264.145(a); 264.151(a)(1)	Provide copy of post-closure fund agreement. Wording requirements outlined in 264.151(a)(1).		
I-7b Surety Bond	270.14(b)(16); 264.145(b),(c); ; 264.151(b),(c)	264.145(b),(c) spells out requests for owner/operator for adjusting estimates, inflation, and reporting to regional administrator. 264.151(b),(c) outlines wording for bond agreement.		
I-7b(1) Surety Bond Guaranteeing Payment into a Post-Closure Trust Fund	270.14(b)(16); 264.145(b); 264.151(b)	Must provide bond or standby trust agreement before beginning final closure of the facility. Bond must guarantee owner/operator will fund a standby trust fund or provide financial assurance equal to penal sum.		
I-7b(2) Surety Bond Guaranteeing Performance of Closure	270.14(b)(16); 264.145(c); 264.151(c)	Guarantee owner/operator will perform closure required as stated in 246.151(c) and Subpart H.		
I-7(c) Post-Closure Letter of Credit	270.14(b)(16); 264.145(d); 264.151(d)	Requires letter of credit for 1 year equal to amount of post-closure cost.		
I-7(d) Post-Closure Insurance	270.14(b)(16);	Provide copy of certificate of insurance,		

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		264.145(e); 264.151(e)	wording requirement found in 264.151(e).		
I-7(e)	Financial Test and Corporate Guarantee for Post-Closure Care	270.14(b)(16); 264.145(f); 264.151(f),(h)	Signed letter by owner/operator or chief financial officer as specified in 264.151(f),(h) of applicant financial statement. If parent corporation is guaranteeing post-closure care, corporate guarantee must accompany.		
I-7(f)	Use of Multiple Financial Mechanism	270.14(b)(16); 264.145(g)	Provide copy of financial assurance mechanisms. Combined financial assurance must be at least equal to post-closure cost estimate.		
I-7(g)	Use of Multiple Financial Mechanism for Multiple Facilities	270.14(b)(16); 264.145(h)	Provide copy of financial assurance mechanisms for more than one facility. Amount must be no less than sum of funds that would be available if separate mechanism had been established and maintained for each facility.		
I-8	Liability Requirements	270.14(b)(17); 264.147			
I-8a	Coverage for Sudden Accidental Occurrences	270.14(b)(17); 264.147(a)	Coverage must be maintained for sudden accidental occurrences in the amount of \$1 million per occurrence with an annual agreement of at least \$2 million.		
I-8a(1)	Endorsement of Certification	270.14(b)(17); 264.147(a)(1)	Submit original Hazardous Waste Facility Liability Endorsement wording pursuant to 264.151(i), or Certificate of Liability wording pursuant to 264.151(j).		
I-8a(2)	Financial Test and Corporate Guarantee for Liability Coverage	270.14(b)(17); 264.147(a)(2),	Requires signed letter by owner or chief financial officer worded as outlined in		

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	(f),(g); 264.151(f),(g)	264.151(g) outlining applicant financial statement. 264.151(g) used if applicant is using financial test to cover cost for closure or post closure. Alternatively, owner/operator may submit corporate guarantee specified in 264.151(h)(2).		
I-8a(3) Use of Multiple Financial Mechanism	270.14(b)(17); 264.147(a)(3)	Submit items demonstrating liability coverage specified in I-8a(1) and I-8a(2). Amount of coverage must total at least minimum amount required by 264.147(a).		
I-8b Coverage for Nonsudden Accidental Occurrences	270.14(b)(17); 264.147(b)	For high risk storage facilities, surface impoundments, land disposal, land treatment facilities, liability coverage must be maintained in the amount of at least \$3 million per occurrence. Annual aggregate at least \$6 million.		
I-8b(1) Endorsement or Certification	270.14(b)(17); 264.147(b)(1)	Submit signed duplicate original of Hazardous Waste Facility Liability Endorsement.		
I-8b(2) Financial Test or Corporate Guarantee for Liability Coverage	270.14(b)(17); 264.147(b)(2); 264.151(f),(g)	Requires signed letter by owner or chief financial officer worded as outlined in 264.151(g) outlining applicant financial statement. 264.151(g) used if applicant is using financial test to cover cost for closure or post closure. Alternatively, owner/operator may submit corporate guarantee specified in 264.151(h)(2).		
I-8b(3) Use of Multiple Insurance Mechanism	270.14(b)(17); 264.147(b)(3)	Submit items demonstrating liability coverage specified in I-8a(1) and I-8a(2). Amount of coverage must total at least minimum amount		

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		required by 264.147(b).		
I-8c Requests for Variance	270.14(b)(17); 264.147(c)	Request for adjusted level of required liability must be supported by information which demonstrates 264.147(a) or (b) are not consistent with degree and duration of risk associated with treatment, storage, or disposal at facility or group of facilities.		
I-9 Use of State Required Mechanisms	270.14(b)(18)			
I-9a Use of State Required Mechanisms	270.14(b)(18); 264.149	When state has regulations equivalent or greater liability requirements for financial assurance for closure post-closure submit copy of state-required financial mechanism.		
I-9b State Assumption of Responsibility	270.14(b)(18); 264.150	If state assumes legal responsibility for compliance with closure, post-closure, or liability requirements there must be a letter submitted from state specifying assumption of responsibilities and amounts of liability.		

Notes:

^a Considerations in addition to the requirements presented in the regulations.

^b For each requirement, this column must indicate one of the following: NA for not applicable, IM for information missing, or the exact location of the information in the application.

^c If application is deficient in an area, prepare a comment describing the deficiency, attach it to the checklist, and reference the comment in this column.