Chapter 246-250 WAC

RADIOACTIVE WASTE—LICENSING LAND DISPOSAL

WAC

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GENERAL PROVISIONS

WAC 246-250-001 Purpose and scope. (1) The regulations in this chapter establish procedures, criteria, and terms and conditions upon which the department issues licenses for land disposal of low-level radioactive wastes received from other persons. (Applicability of the requirements in this chapter to department licenses for waste disposal facilities in effect on the effective date of this regulation will be determined on a case-by-case basis and implemented through terms and conditions of the license or by orders issued by the department.) The requirements of this chapter are in addition to, and not in substitution for, other applicable requirements of these regulations or other state regulations.

(2) The regulations in this chapter do not apply to disposal of tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore where the tailings or wastes result in quantities greater than 10,000 kilograms and containing more than 185 mega becquerels (five millicuries) of radium 226, or disposal of waste provided in WAC 246-221-070, 246-221-190, or 246-221-200.

(3) This chapter establishes procedural requirements and performance objectives applicable to any method of land disposal. It establishes specific technical requirements for near-surface disposal of radioactive waste which involves disposal in the uppermost portion of the earth, approximately 30 meters. Near-surface disposal includes disposal in engineered facilities which may be built totally or partially above-grade provided that such facilities have protective earthen covers. Near-surface disposal does not include disposal facilities which are partially or fully above-grade with no protective earthen cover, which are referred to as “above-ground disposal.” Burial deeper than 30 meters may also be satisfactory. Technical requirements for alternative methods may be added in the future.

[Statutory Authority: RCW 70.98.050 and 70.98.080. 97-02-014, § 246-250-001, filed 12/20/96, effective 1/20/97. Statutory Authority: RCW 70.98.050, 94-01-073, § 246-250-001, filed 12/9/93, effective 1/9/94. Statutory Authority: RCW 70.98.050 and 70.98.080. 91-16-109 (Order 187), § 246-250-001, filed 8/7/91, effective 9/7/91. Statutory Authority: RCW 43.70.040, 91-02-049 (Order 121), recodified as § 246-250-001, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080. 87-01-031 (Order 2450), § 402-61-010, filed 12/11/86.]
(b) The tailings or wastes produced by the extraction or concentration of uranium or thorium from ore processed primarily for its source material content, including discrete surface wastes resulting from uranium solution extraction processes. Underground ore bodies depleted by these solution extraction operations do not constitute "by-product material" within this definition;

(c)(i) Any discrete source of radium-226 that is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; or

(ii) Any material that:

(A) Has been made radioactive by use of a particular accelerator; and

(B) Is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; and

(d) Any discrete source of naturally occurring radioactive material, other than source material, that:

(i) The commission, in consultation with the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of Homeland Security, and the head of any other appropriate federal agency determines would pose a threat similar to the threat posed by a discrete source of radium-226 to the public health and safety or the common defense and security; and

(ii) Before, on, or after August 8, 2005, is extracted or converted after extraction for use in a commercial, medical, or research activity.

(4) "Chelating agent" means amine polycarboxylic acids, hydroxy-carboxylic acids, gluconic acid, and polycarboxylic acids.

(5) "Commencement of construction" means any clearing of land, excavation, or other substantial action that would adversely affect the environment of a land disposal facility. The term does not mean disposal site exploration, necessary roads for disposal site exploration, borings to determine foundation conditions, or other preconstruction monitoring or testing to establish background information related to the suitability of the disposal site or the protection of environmental values.

(6) "Custodial agency" means an agency of the government designated to act on behalf of the government owner of the disposal site.

(7) "Disposal" means the isolation of wastes from the biosphere inhabited by man and his food chains by emplacement in a land disposal facility.

(8) "Disposal site" means that portion of a land disposal facility which is used for disposal of waste. It consists of disposal units and a buffer zone.

(9) "Disposal unit" means a discrete portion of the disposal site into which waste is placed for disposal. For near-surface disposal, the unit is usually a trench.

(10) "Engineered barrier" means a man-made structure or device that is intended to improve the land disposal facility's ability to meet the performance objectives in this chapter.

(11) "Explosive material" means any chemical compound, mixture, or device which produces a substantial instantaneous release of gas and heat spontaneously or by contact with sparks or flame.

(12) "Hazardous waste" means those wastes designated as hazardous by United States Environmental Protection Agency regulations in 40 C.F.R. Part 261.

(13) "Hydrogeologic unit" means any soil or rock unit or zone which by virtue of its porosity or permeability, or lack thereof, has a distinct influence on the storage or movement of groundwater.

(14) "Inadvertent intruder" means a person who might occupy the disposal site after closure and engage in normal activities, such as agriculture, dwelling construction, or other pursuits in which an individual might be unknowingly exposed to radiation from the waste.

(15) "Intruder barrier" means a sufficient depth of cover over the waste that inhibits contact with waste and helps to ensure that radiation exposures to an inadvertent intruder will meet the performance objectives set forth in this chapter, or engineered structures that provide equivalent protection to the inadvertent intruder.

(16) "Land disposal facility" means the land, buildings, and equipment which are intended to be used for the disposal of wastes into the subsurface of the land. For purposes of this chapter, a land disposal facility does not include a geologic repository.

(17) "Monitoring" means observing and making measurements to provide data to evaluate the performance and characteristics of the disposal site.

(18) "Near-surface disposal facility" means a land disposal facility in which waste is disposed within approximately the upper thirty meters of the earth's surface.

(19) "Pyrophoric liquid" means any liquid that ignites spontaneously in dry or moist air at or below 130°F (54.4°C).

(20) "Pyrophoric solid" means any solid material, other than one classed as an explosive, which under normal conditions, is liable to cause fires through friction, retained heat from manufacturing or processing, or which can be ignited readily and, when ignited, burns so vigorously and persistently as to create a serious transportation, handling, or disposal hazard. Included are spontaneously combustible and water-reactive materials.

(21) "Site closure and stabilization" means those actions that are taken upon completion of operations that prepare the disposal site for custodial care and that assure that the disposal site will remain stable and will not need ongoing active maintenance.

(22) "Stability" means structural stability.

(23) "Surveillance" means monitoring and observation of the disposal site for purposes of visual detection of need for maintenance, custodial care, evidence of intrusion, and compliance with other license and regulatory requirements.

(24) "Waste" means those low-level radioactive wastes containing source, special nuclear, or by-product material that are acceptable for disposal in a land disposal facility. For the purposes of this definition, low-level radioactive waste means radioactive waste not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or by-product material as defined in WAC 246-250-010 (3)(b), (c), and (d).

[Statutory Authority: RCW 70.98.050 and 70.98.080. 11-03-020, § 246-250-010, filed 1/7/11, effective 2/7/11; 97-02-014, § 246-250-010, filed 12/20/96, effective 1/20/97; 91-16-109 (Order 187), § 246-250-010, filed 8/7/91, effective 9/7/91. Statutory Authority: RCW 43.70.040. 91-02-049]

(1/7/11)
WAC 246-250-020 License required. (1) No person may receive, possess, or dispose of waste received from other persons at a land disposal facility unless authorized by a license issued by the department pursuant to this chapter, and chapter 246-235 WAC.

(2) Each person shall file an application with the department pursuant to chapter 246-235 WAC and obtain a license as provided in this chapter before commencement of construction of a land disposal facility. Failure to comply with this requirement may be grounds for denial of a license.

WAC 246-250-030 Content of application. In addition to the requirements set forth in chapter 246-235 WAC, an application to receive from others, possess, and dispose of wastes shall consist of general information, specific technical information, institutional information, and financial information as set forth in WAC 246-250-040 through 246-250-080.

WAC 246-250-040 General information. The general information shall include each of the following:

(1) Identity of the applicant including:
   (a) The full name, address, telephone number, and description of the business or occupation of the applicant;
   (b) If the applicant is a partnership, the name and address of each partner and the principal location where the partnership does business;
   (c) If the applicant is a corporation or an unincorporated association, (i) the state where it is incorporated or organized and the principal location where it does business, and (ii) the names and addresses of its directors and principal officers; and
   (d) If the applicant is acting as an agent or representative of another person in filing the application, all information required under this subsection must be supplied with respect to the other person.

(2) Qualifications of the applicant:
   (a) The organizational structure of the applicant, both offsite and onsite, including a description of lines of authority and assignments of responsibilities, whether in the form of administrative directives, contract provisions, or otherwise;
   (b) The technical qualifications, including training and experience, of the applicant and members of the applicant's staff to engage in the proposed activities. Minimum training and experience requirements for personnel filling key positions described in (a) of this subsection must be provided.
   (c) A description of the applicant's personnel training program; and
   (d) The plan to maintain an adequate complement of trained personnel to carry out waste receipt, handling, and disposal operations in a safe manner.

(3) A description of:
   (a) The location of the proposed disposal site;
   (b) The general character of the proposed activities;
   (c) The types and quantities of waste to be received, possessed, and disposed of;
   (d) Plans for use of the land disposal facility for purposes other than disposal of wastes; and
   (e) The proposed facilities and equipment.

(4) Proposed schedules for construction, receipt of waste, and first emplacement of waste at the proposed land disposal facility.

WAC 246-250-050 Specific technical information. The specific technical information shall include the following information needed for demonstration that the performance objectives and the applicable technical requirements of this chapter will be met. The specific technical information shall be in the form of an environmental report which the department can use to independently evaluate the project under the provisions of the State Environmental Policy Act (SEPA):

(1) A description of the natural and demographic disposal site characteristics as determined by disposal site selection and characterization activities. The description shall include geologic, geochemical, geotechnical, hydrologic, ecologic, archaeologic, meteorologic, climatologic, and biotic features of the disposal site and vicinity.

(2) A description of the design features of the land disposal facility and the disposal units. For near-surface disposal, the description shall include those design features related to infiltration of water; integrity of covers for disposal units; structural stability of backfill, wastes, and covers; contact of wastes with standing water; disposal site drainage; disposal site closure and stabilization; elimination to the extent practicable of long-term disposal site maintenance; inadvertent intrusion; occupational exposures; disposal site monitoring; and adequacy of the size of the buffer zone for monitoring and potential mitigative measures.

(3) A description of the principal design criteria and their relationship to the performance objectives.

(4) A description of the design basis natural events or phenomena and their relationship to the principal design criteria.

(5) A description of codes and standards which the applicant has applied to the design and which will apply to construction of the land disposal facilities.

(6) A description of the construction and operation of the land disposal facility. The description shall include as a minimum the methods of construction of disposal units; waste emplacement; the procedures for and areas of waste segregation; types of intruder barriers; onsite traffic and drainage systems; survey control program; methods and areas of waste storage; and methods to control surface water and groundwater access to the wastes. The description shall also include a description of the methods to be employed in the handling and disposal of wastes containing chelating agents or other...
nonradiological substances that might affect meeting the performance objectives of this chapter.

(7) A description of the disposal site closure plan, including those design features which are intended to facilitate disposal site closure and to eliminate the need for ongoing active maintenance.

(8) An identification of the known natural resources at the disposal site, whose exploitation could result in inadvertent intrusion into the wastes after removal of active institutional control.

(9) A description of the kind, amount, classification, and specifications of the radioactive material proposed to be received, possessed, and disposed of at the land disposal facility.

(10) A description of the quality assurance program tailored to low-level radioactive waste disposal, developed and applied by the applicant for the determination of natural disposal site characteristics and for quality assurance during the design, construction, operation, and closure of the land disposal facility and the receipt, handling, and emplacement of waste. Audits and managerial controls must be included.

(11) A description of the radiation safety program for control and monitoring of radioactive effluents to ensure compliance with the performance objective in WAC 246-250-170 and occupational radiation exposure to ensure compliance with the requirements of chapter 246-221 WAC and to control contamination of personnel, vehicles, equipment, buildings, and the disposal site. Both routine operations and accidents shall be addressed. The program description must include procedures, instrumentation, facilities, and equipment.

(12) A description of the environmental monitoring program to provide data to evaluate potential health and environmental impacts and the plan for taking corrective measures if migration is indicated.

(13) A description of the administrative procedures that the applicant will apply to control activities at the land disposal facility.

(14) A description of the facility electronic recordkeeping system.

WAC 246-250-060 Technical analyses. The specific technical information shall also include the following analyses needed to demonstrate that the performance objectives of this chapter will be met:

(1) Pathways analyzed in demonstrating protection of the general population from releases of radioactivity shall include air, soil, groundwater, surface water, plant uptake, and exhumation by burrowing animals. The analyses shall clearly identify and differentiate between the roles performed by the natural disposal site characteristics and design features in isolating and segregating the wastes. The analyses shall clearly demonstrate that there is reasonable assurance that the exposures to humans from the release of radioactivity will not exceed the limits set forth in WAC 246-250-170.

(2) Analyses of the protection of individuals from inadvertent intrusion shall include demonstration that there is reasonable assurance the waste classification and segregation requirements will be met and that adequate barriers to inadvertent intrusion will be provided.

(3) Analyses of the protection of individuals during operations shall include assessments of expected exposures due to routine operations and likely accidents during handling, storage, and disposal of waste. The analyses shall provide reasonable assurance that exposures will be controlled to meet the requirements of chapter 246-221 WAC.

(4) Analyses of the long-term stability of the disposal site and the need for ongoing active maintenance after closure shall be based upon analyses of active natural processes such as erosion, mass wasting, slope failure, settlement of wastes and backfill, infiltration through covers over disposal areas and adjacent soils, and surface drainage of the disposal site. The analyses shall provide reasonable assurance that there will not be a need for ongoing active maintenance of the disposal site following closure.

WAC 246-250-070 Institutional information. The institutional information submitted by the applicant shall include:

(1) A certification by the federal or state agency which owns the disposal site that the federal or state agency is prepared to accept transfer of the license when the provisions of WAC 246-250-140 are met and will assume responsibility for institutional control after site closure and post-closure observation and maintenance.

(2) Where the proposed disposal site is on land not owned by the federal or state government, the applicant shall submit evidence that arrangements have been made for assumption of ownership in fee by the federal or state agency before the department issues a license.

WAC 246-250-080 Financial information. The financial information shall be sufficient to demonstrate that the financial qualifications of the applicant are adequate to carry out the activities for which the license is sought and meet other financial assurance requirements of this chapter.

WAC 246-250-090 Requirements for issuance of a license. A license for the receipt, possession, and disposal of waste containing or contaminated with radioactive material will be issued by the department upon finding that:

(1) The issuance of the license will not constitute an unreasonable risk to the health and safety of the public;
(2) The applicant is qualified by reason of training and experience to carry out the disposal operations requested in a manner that protects health and minimizes danger to life or property;

(3) The applicant's proposed disposal site, disposal design, land disposal facility operations, including equipment, facilities, and procedures, disposal site closure, and post-closure institutional control are adequate to protect the public health and safety in that they provide reasonable assurance that the general population will be protected from releases of radioactivity as specified in the performance objective in WAC 246-250-170.

(4) The applicant's proposed disposal site, disposal site design, land disposal facility operations (including equipment, facilities, and procedures), disposal site closure, and post-closure institutional control are adequate to protect the public health and safety in that they will provide reasonable assurance that individual inadvertent intruders are protected in accordance with the performance objective in WAC 246-250-180.

(5) The applicant's proposed land disposal facility operations (including equipment, facilities, and procedures), are adequate to protect the public health and safety in that they will provide reasonable assurance that the standards for radiation protection set out in chapter 246-221 WAC will be met;

(6) The applicant's proposed disposal site, disposal site design, land disposal facility operations, disposal site closure, and post-closure institutional control are adequate to protect the public health and safety in that they will provide reasonable assurance that long-term stability of the disposed waste and the disposal site will be achieved and will eliminate to the extent practicable the need for ongoing active maintenance of the disposal site following closure;

(7) The applicant's demonstration provides reasonable assurance that the applicable technical requirements of this chapter will be met;

(8) The applicant’s proposal for institutional control provides reasonable assurance that such control will be provided for the length of time found necessary to ensure the findings in subsections (3) through (6) of this section and that the institutional control meets the requirements of WAC 246-250-360.

(9) The financial or surety arrangements meet the requirements of this chapter.

(10) The provisions of the State Environmental Policy Act have been met.

WAC 246-250-100 Conditions of licenses. (1) A license issued under this chapter, or any right thereunder, may be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of the license to any person, only if the department finds, after securing full information, that the transfer is in accordance with the provisions of the act and gives its consent in writing in the form of a license amendment.

(2) The licensee shall submit written statements under oath upon request of the department, at any time before termination of the license, to enable the department to determine whether the license should be modified, suspended, or revoked.

(3) The license will be terminated only on the full implementation of the final closure plan as approved by the department, including post-closure observation and maintenance.

(4) The licensee shall be subject to the provisions of the act, now or hereafter in effect, and to all rules, regulations, and orders of the department. The terms and conditions of the license are subject to amendment, revision, or modification, by reason of amendments to, or by reason of rules, regulations, and orders issued in accordance with the terms of the act.

(5) Each person licensed by the department pursuant to the regulations in this chapter shall confine possession and use of materials to the locations and purposes authorized in the license.

(6) The licensee shall not dispose of waste until the department has inspected the land disposal facility and has found it to be in conformance with the description, design, and construction described in the application for a license.

(7) The department may incorporate in any license at the time of issuance, or thereafter, by appropriate rule, regulation, or order, additional requirements and conditions with respect to the licensee's receipt, possession, and disposal of waste as it deems appropriate or necessary in order to:

(a) Protect health or to minimize danger to life or property;

(b) Require reports and the keeping of records, and to provide for inspections of activities under the license that may be necessary or appropriate to effectuate the purposes of the act and regulations thereunder.

(8) The authority to dispose of wastes expires on the date stated in the license. Any expiration date on a license applies only to the above ground activities and to the authority to dispose of waste. Failure to renew the license shall not relieve the licensee of responsibility for implementing site closure, post-closure observation, and transfer of the license to the site owner.

WAC 246-250-110 Application for renewal or closure. (1) An application for renewal must be filed at least ninety days prior to license expiration.

(2) An application for closure under WAC 246-250-120 must be filed at least one year prior to proposed closure.

(3) Applications for renewal of a license must be filed in accordance with WAC 246-250-030 through 246-250-080. Applications for closure must be filed in accordance with WAC 246-250-120. Information contained in previous applications, statements, or reports filed with the department under the license may be incorporated by reference if the references are clear, specific, and remain pertinent.

(4) In any case in which a licensee has filed an application in proper form for renewal of a license, the license shall not expire until the department has taken final action on the application for renewal.
WAC 246-250-120 Contents of application for site closure and stabilization. (1) Prior to final closure of the disposal site, or as otherwise directed by the department, the applicant shall submit an application to amend the license for closure. This closure application shall include a final revision and specific details of the disposal site closure plan included as part of the license application submitted under WAC 246-250-050(7) that includes each of the following:

(a) Any additional geologic, hydrologic, or other data pertinent to the long-term containment of emplaced wastes obtained during the operational period.

(b) The results of tests, experiments, or any other analyses relating to backfill of excavated areas, closure and sealing, waste migration and interaction with emplacement media, or any other tests, experiments, or analysis pertinent to the long-term containment of emplaced waste within the disposal site.

(c) Any proposed revision of plans for:

(i) Decontamination and/or dismantlement of surface facilities;

(ii) Backfilling of excavated areas; or

(iii) Stabilization of the disposal site for post-closure care.

(d) Any significant new information regarding the environmental impact of closure activities and long-term performance of the disposal site.

(2) Upon review and consideration of an application to amend the license for closure submitted in accordance with subsection (1) of this section, the department shall issue an amendment authorizing closure if there is reasonable assurance that the long-term performance objectives of this chapter will be met.

WAC 246-250-130 Post-closure observation and maintenance. The licensee shall observe, monitor, and carry out necessary maintenance and repairs at the disposal site until the site closure is complete and the license is transferred by the department in accordance with WAC 246-250-140. Responsibility for the disposal site must be maintained by the licensee for five years. A shorter or longer time period for post-closure observation and maintenance may be established and approved as part of the site closure plan, based on site-specific conditions.

WAC 246-250-140 Transfer of license. Following closure and the period of post-closure observation and maintenance, the licensee may apply for an amendment to transfer the license to the disposal site owner. The license shall be transferred when the department finds:

(1) That the closure of the disposal site has been made in conformance with the licensee's disposal site closure plan, as amended and approved as part of the license;

(2) That reasonable assurance has been provided by the licensee that the performance objectives of this chapter are met;

(3) That any funds and necessary records for care will be transferred to the disposal site owner;

(4) That the post-closure monitoring program is operational for implementation by the disposal site owner; and

(5) That the federal or state agency which will assume responsibility for institutional control of the disposal site is prepared to assume responsibility and ensure that the institutional requirements found necessary under WAC 246-250-090(8) will be met.

WAC 246-250-150 Termination of license. (1) Following any period of institutional control needed to meet the requirements found necessary under WAC 246-250-090, the licensee may apply for an amendment to terminate the license.

(2) This application will be reviewed in accordance with the provisions of chapter 246-235 WAC.

(3) A license shall be terminated only when the department finds:

(a) That the institutional control requirements found necessary under WAC 246-250-090(8) have been met;

(b) That any additional requirements resulting from new information developed during the institutional control period have been met; and

(c) That permanent monuments or markers warning against intrusion have been installed.

WAC 246-250-160 General requirement. Land disposal facilities shall be sited, designed, operated, closed, and controlled after closure so that reasonable assurance exists that exposures to individuals are within the requirements established in the performance objectives in WAC 246-250-170 through 246-250-200.

WAC 246-250-170 Protection of the general population from releases of radioactivity. Concentrations of radio-
active material which may be released to the general environment in groundwater, surface water, air, soil, plants, or animals shall not result in an annual dose exceeding an equivalent of twenty-five millirems (0.25 mSv) to the whole body, seventy-five millirems (0.75 mSv) to the thyroid, and twenty-five millirems (0.25 mSv) to any other organ of any member of the public. Reasonable effort should be made to maintain releases of radioactivity in effluents to the general environment as low as is reasonably achievable.

[Statutory Authority: RCW 43.70.040. 91-02-049 (Order 121), recodified as § 246-250-170, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080, 87-01-031 (Order 2450), § 402-61-180, filed 12/11/86.]

WAC 246-250-180 Protection of individuals from inadvertent intrusion. Design, operation, and closure of the land disposal facility shall ensure protection of any individual inadvertently intruding into the disposal site and occupying the site or contacting the waste at any time after active institutional controls over the disposal site are removed.

[Statutory Authority: RCW 43.70.040. 91-02-049 (Order 121), recodified as § 246-250-180, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080, 87-01-031 (Order 2450), § 402-61-190, filed 12/11/86.]

WAC 246-250-190 Protection of individuals during operations. After the effective date of these regulations, operations at the land disposal facility shall be conducted in compliance with the standards for radiation protection set out in chapter 246-221 WAC, except for releases of radioactivity in effluents from the land disposal facility, which shall be governed by WAC 246-250-170. Every reasonable effort should be made to maintain radiation exposures as low as is reasonably achievable.

[Statutory Authority: RCW 70.98.050 and 70.98.080. 91-16-109 (Order 187), § 246-250-190, filed 8/7/91, effective 9/7/91. Statutory Authority: RCW 43.70.040. 91-02-049 (Order 121), recodified as § 246-250-190, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080. 87-01-031 (Order 2450), § 402-61-200, filed 12/11/86.]

WAC 246-250-200 Stability of the disposal site after closure. The disposal facility shall be sited, designed, used, operated, and closed to achieve long-term stability of the disposal site and to eliminate, to the extent practicable, the need for ongoing active maintenance of the disposal site following closure so that only surveillance, monitoring, or minor custodial care is required.

[Statutory Authority: RCW 43.70.040. 91-02-049 (Order 121), recodified as § 246-250-200, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080. 87-01-031 (Order 2450), § 402-61-210, filed 12/11/86.]

TECHNICAL REQUIREMENTS FOR LAND DISPOSAL FACILITIES

WAC 246-250-300 Disposal site suitability requirements for land disposal. (1) Disposal site suitability for near-surface disposal. The primary emphasis in disposal site suitability is given to isolation of wastes, and to disposal site features that ensure that the long-term performance objectives are met.

(a) The disposal site shall be capable of being characterized, modeled, analyzed, and monitored.

(b) Within the region where the facility is to be located, a disposal site should be selected so that projected population growth and future developments are not likely to affect the ability of the disposal facility to meet the performance objectives of this chapter.

(c) Areas shall be avoided having known natural resources which, if exploited, would result in failure to meet the performance objectives of this chapter.

(d) The disposal site shall be generally well drained and free of areas of flooding or frequent ponding. Waste disposal shall not take place in a one hundred-year flood plain, coastal high-hazard area or wetland, as defined in Executive Order 11988, "Flood Plain Management Guidelines."

(e) Upstream drainage areas shall be minimized to decrease the amount of runoff which could erode or inundate waste disposal units.

(f) The disposal site shall provide sufficient depth to the water table that groundwater intrusion, perennial or otherwise, into the waste will not occur. The department will consider an exception to this requirement to allow disposal below the water table if it can be conclusively shown that disposal site characteristics will result in molecular diffusion being the predominant means of radionuclide movement and the rate of movement will result in the performance objectives being met. In no case will waste disposal be permitted in the zone of fluctuation of the water table.

(g) The hydrogeologic unit used for disposal shall not discharge groundwater to the surface, except for groundwater monitoring operations.

(h) Areas shall be avoided where tectonic processes such as faulting, folding, seismic activity, or vulcanism may occur with such frequency and extent to significantly affect the ability of the disposal site to meet the performance objectives of this chapter or may preclude defensible modeling and prediction of long-term impacts.

(i) Areas shall be avoided where surface geologic processes such as mass wasting, erosion, slumping, landsliding, or weathering occur with such frequency and extent to significantly affect the ability of the disposal site to meet the performance objectives of this chapter, or may preclude defensible modeling and prediction of long-term impacts.

(j) An existing disposal site may be located where nearby facilities or activities could adversely impact the ability of the site to meet the performance objectives of this chapter or significantly mask the environmental monitoring program, provided an extensive environmental monitoring program exists which is designed to differentiate, to the maximum extent practicable, between contributions from the disposal site and other nearby facilities.

(2) (Reserved.)

[Statutory Authority: RCW 43.70.040. 91-02-049 (Order 121), recodified as § 246-250-300, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080. 87-01-031 (Order 2450), § 402-61-220, filed 12/11/86.]

WAC 246-250-320 Disposal site design for land disposal. (1) Disposal site design for near-surface disposal.

(a) Site design features shall be directed toward long-term isolation and avoidance of the need for continuing active maintenance after site closure.

(b) The disposal site design and operation shall be compatible with the disposal site closure and stabilization plan and lead to disposal site closure that provides reasonable assurance that the performance objectives will be met.
(c) The disposal site shall be designed to complement and improve, where appropriate, the ability of the disposal site's natural characteristics to ensure that the performance objectives will be met.

(d) Covers shall be designed to minimize to the extent practicable water infiltration, to direct percolating or surface water away from the disposed waste, and to resist degradation by surface geologic processes and biotic activity.

(e) Surface features shall direct surface water drainage away from disposal units at velocities and gradients which will not result in erosion that will require ongoing active maintenance in the future.

(f) The disposal site shall be designed to minimize to the extent practicable the contact of water with waste during storage, the contact of standing water with waste during disposal, and the contact of percolating or standing water with wastes after disposal.

(2) (Reserved.)

WAC 246-250-330 Land disposal facility operation and disposal site closure. (1) Near-surface disposal facility operation and disposal site closure.

(a) Wastes designated as Class A pursuant to chapter 246-249 WAC shall be segregated from other wastes by placing in disposal units which are sufficiently separated from disposal units for the other waste classes so that any interaction between Class A wastes and other wastes will not result in the failure to meet the performance objectives of this chapter. This segregation is not necessary for Class A wastes if they meet the stability requirements in chapter 246-249 WAC.

(b) Wastes designated as Class C pursuant to chapter 246-249 WAC shall be disposed of so that the top of the waste is a minimum of five meters below the top surface of the cover or must be disposed of with intruder barriers that are designed to protect against an inadvertent intrusion for at least five hundred years.

(c) Except as provided in (l) of this subsection, only waste classified as Class A, B, or C shall be acceptable for near-surface disposal. All waste shall be disposed of in accordance with the requirements of (d) through (k) of this subsection.

(d) Wastes shall be emplaced in a manner that maintains the package integrity during emplacement, minimizes the void spaces between packages, and permits the void spaces to be filled.

(e) Void spaces between waste packages shall be filled with earth or other material to reduce future subsidence within the fill.

(f) Waste shall be placed and covered in a manner that limits the radiation dose rate at the surface of the cover to levels that at a minimum will permit the licensee to comply with all provisions of chapter 246-221 WAC at the time the license is transferred pursuant to WAC 246-250-140.

(g) The boundaries and locations of each disposal unit shall be accurately located and mapped by means of a land survey. Near-surface disposal units shall be marked in such a way that the boundaries of each unit can be easily defined. Three permanent survey marker control points, referenced to United States Geological Survey (USGS) or National Geodetic Survey (NGS) survey control stations, shall be established on the site to facilitate surveys. The USGS or NGS control stations shall provide horizontal and vertical controls as checked against USGS or NGS record files.

(h) A buffer zone of land shall be maintained between any buried waste and the disposal site boundary and beneath the disposed waste. The buffer zone shall be of adequate dimensions to carry out environmental monitoring activities specified in WAC 246-250-340(4) and take mitigative measures if needed.

(i) Closure and stabilization measures as set forth in the approved site closure plan shall be carried out as each disposal unit is filled and covered.

(j) Active waste disposal operations shall not have an adverse effect on completed closure and stabilization measures.

(k) Only wastes containing or contaminated with radioactive material shall be disposed of at the disposal site.

(l) Proposals for disposal of waste that is not generally acceptable for near-surface disposal because the waste form and disposal methods must be different and, in general, more stringent than those specified for Class C waste, may be submitted to the department for approval.

(2) (Reserved.)

WAC 246-250-340 Environmental monitoring. (1) At the time a new license application is submitted, the applicant shall have conducted a preoperational monitoring program to provide basic environmental data on the disposal site characteristics. The applicant shall obtain information about the ecology, meteorology, climate, hydrology, geology, geochemistry, and seismology of the disposal site. For those characteristics that are subject to seasonal variation, data must cover at least a twelve-month period.

(2) During the land disposal facility site construction and operation, the licensee shall maintain an environmental monitoring program. Measurements and observations must be made and recorded to provide data to evaluate the potential health and environmental impacts during both the construction and the operation of the facility and to enable the evaluation of long-term effects and the need for mitigative measures. The monitoring system must be capable of providing early warning of releases of waste from the disposal site before they leave the site boundary.

(3) After the disposal site is closed, the licensee responsible for postoperational surveillance of the disposal site shall maintain a monitoring system based on the operating history and the closure and stabilization of the disposal site. The monitoring system must be capable of providing early warning of releases of waste from the disposal site before they leave the site boundary.

(4) The licensee shall have plans for taking corrective measures if the environmental monitoring program detects

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migration of waste which would indicate that the performance objectives may not be met.

[Statutory Authority: RCW 43.70.040, 91-02-049 (Order 121), recodified as § 246-250-500, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080. 87-01-031 (Order 2450), § 402-61-290, filed 12/11/86.]

WAC 246-250-350 Alternative requirements for design and operations. The department may, upon request or on its own initiative, authorize provisions other than those set forth in WAC 246-250-300 through 246-250-340 for the segregation and disposal of waste and for the design and operation of a land disposal facility on a specific basis, if it finds reasonable assurance of compliance with the performance objectives of this chapter.

[Statutory Authority: RCW 70.98.050 and 70.98.080. 91-16-109 (Order 187), § 246-250-350, filed 8/7/91, effective 9/7/91. Statutory Authority: RCW 43.70.040. 91-02-049 (Order 121), recodified as § 246-250-350, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080. 87-01-031 (Order 2450), § 402-61-260, filed 12/11/86.]

WAC 246-250-360 Institutional requirements. (1) Land ownership. Disposal of waste received from other persons may be permitted only on land owned in fee by the federal or state government.

(2) Institutional control. The land owner or custodial agency shall conduct an institutional control program to physically control access to the disposal site following transfer of control of the disposal site from the disposal site operator. The institutional control program shall also include, but not be limited to, conducting an environmental monitoring program at the disposal site, periodic surveillance, minor custodial care, and other requirements as determined by the department; and administration of funds to cover the costs for these activities. The period of institutional controls will be determined by the department, but controls may not be relied upon for more than one hundred years following transfer of institutional control of the disposal site to the owner.

[Statutory Authority: RCW 43.70.040. 91-02-049 (Order 121), recodified as § 246-250-360, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080. 87-01-031 (Order 2450), § 402-61-270, filed 12/11/86.]

WAC 246-250-370 Alternative requirements for waste classification and characteristics. The department may, upon request or on its own initiative, authorize other provisions for the classification and characteristics of waste on a specific basis, if, after evaluation of the specific characteristics of the waste, disposal site, and method of disposal, it finds reasonable assurance of compliance with the performance objectives specified in this chapter.

[Statutory Authority: RCW 43.70.040. 91-02-049 (Order 121), recodified as § 246-250-370, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080. 87-01-031 (Order 2450), § 402-61-280, filed 12/11/86.]

FINANCIAL ASSURANCES

WAC 246-250-500 Applicant qualifications and assurances. Each applicant shall show that it either possesses the necessary funds or has reasonable assurance of obtaining the necessary funds, or by a combination of the two, to cover the estimated costs of conducting all licensed activities over the planned operating life of the project, including costs of construction and disposal.

[Statutory Authority: RCW 43.70.040. 91-02-049 (Order 121), recodified as § 246-250-500, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080. 87-01-031 (Order 2450), § 402-61-290, filed 12/11/86.]

WAC 246-250-520 Funding for disposal site closure and stabilization. (1) The applicant shall provide assurances prior to the commencement of operations that sufficient funds will be available to carry out disposal site closure and stabilization, including: (a) Decontamination or dismantlement of land disposal facility structures; and (b) closure and stabilization of the disposal site so that following transfer of the disposal site to the site owner, the need for ongoing active maintenance is eliminated to the extent practicable and only minor custodial care, surveillance and monitoring are required. These assurances shall be based on department-approved cost estimates reflecting the department-approved plan for disposal site closure and stabilization. The applicant's cost estimates must take into account total costs that would be incurred if an independent contractor were hired to perform the closure and stabilization work.

(2) In order to avoid unnecessary duplication and expense, the department will accept financial sureties that have been consolidated with earmarked financial or surety arrangements established to meet requirements of federal or other state agencies for such decontamination, closure, and stabilization. The department will accept these arrangements only if they are considered adequate to satisfy the requirements of this section and that the portion of the surety which covers the closure of the disposal site is clearly identified and committed for use in accomplishing these activities.

(3) The licensee's financial or surety arrangement shall be submitted annually for review by the department to assure that sufficient funds will be available for completion of the closure plan.

(4) The amount of the licensee's financial or surety arrangement shall change in accordance with changes in the predicted costs of closure and stabilization. Factors affecting closure and stabilization cost estimates include inflation, increases in the amount of disturbed land, changes in engineering plans, closure and stabilization that has already been accomplished, and any other conditions affecting costs. The financial or surety arrangement shall be sufficient at all times to cover the costs of closure and stabilization of the disposal units that are expected to be used before the next license renewal.

(5) The financial or surety arrangement shall be written for a specified period of time and shall be automatically renewed unless the person who issues the surety notifies the department, the beneficiary (the site owner), and the principal (the licensee) not less than ninety days prior to the renewal date of its intention not to renew. In such a situation, the licensee must submit a replacement surety within thirty days after notification of cancellation. If the licensee fails to provide a replacement surety acceptable to the department, the beneficiary may collect on the original surety.

(6) Proof of forfeiture shall not be necessary to collect the surety so that, in the event that the licensee could not provide an acceptable replacement surety within the required time, the surety shall be automatically collected prior to its expiration. The conditions described above shall be clearly stated on any surety instrument.
(7) Financial or surety arrangements generally acceptable to the department include surety bonds, cash deposits, certificates of deposit, deposits of government securities, escrow accounts, irrevocable letters of credit, trust funds, and combinations of the above or such other types of arrangements as may be approved by the department. Self-insurance, or any arrangement which essentially constitutes self-insurance, will not satisfy the surety requirement for private sector applicants.

(8) The licensee's financial or surety arrangement shall remain in effect until the closure and stabilization program has been completed and approved by the department, and the license has been transferred to the site owner.

[Statutory Authority: RCW 43.70.040. 91-02-049 (Order 121), recodified as § 246-250-520, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080, 87-01-031 (Order 2450), § 402-61-300, filed 12/11/86.]

**WAC 246-250-530 Financial assurances for institutional controls.** (1) Prior to the issuance of the license, the applicant shall provide for departmental approval, a binding arrangement, between the applicant and the disposal site owner that ensures that sufficient funds will be available to cover the costs of monitoring and any required maintenance during the institutional control period. The binding arrangement shall be reviewed annually by the department to ensure that changes in inflation, technology, and disposal facility operations are reflected in the arrangements.

(2) Subsequent changes to the binding arrangement specified in subsection (1) of this section relevant to institutional control shall be submitted to the department for prior approval.

[Statutory Authority: RCW 43.70.040. 91-02-049 (Order 121), recodified as § 246-250-530, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080, 87-01-031 (Order 2450), § 402-61-310, filed 12/11/86.]

**RECORDS, REPORTS, TESTS, AND INSPECTIONS**

**WAC 246-250-600 Maintenance of records, reports, and transfers.** (1) Each licensee shall maintain any records and make any reports in connection with the licensed activities as may be required by the conditions of the license or by the rules, regulations, and orders of the department.

(2) Records which are required by these regulations or by license conditions shall be maintained for a period specified by the appropriate regulations or by license condition. If a retention period is not otherwise specified, these records must be maintained and transferred to the officials specified in subsection (4) of this section as a condition of license termination unless the department otherwise authorizes their disposition.

(3) Records which shall be maintained pursuant to this chapter may be the original or a reproduced copy or microfilm if this reproduced copy or microfilm is capable of producing copy that is clear and legible at the end of the required retention period.

(4) Notwithstanding subsections (1) through (3) of this section, copies of records of the location and the quantity of wastes contained in the disposal site must be transferred upon license termination to the chief executive of the nearest municipality, the chief executive of the county in which the facility is located, the county zoning board or land development and planning agency, the state governor, the United States Department of Energy, and other state, local, and federal governmental agencies as designated by the department at the time of license termination.

(5) Following receipt and acceptance of a shipment of radioactive waste, the licensee shall record the date that the shipment is received at the disposal facility. The date of disposal of the waste, a traceable shipment manifest number, a description of any engineered barrier or structural overpack provided for disposal of the waste, the location of disposal at the disposal site, the containment integrity of the waste disposal containers as received, any discrepancies between materials listed on the manifest and those received, the volume of any pallets, bracing, or other shipping or on-site generated materials that are contaminated, and are disposed of as contaminated or suspect materials, and any evidence of leaking or damaged disposal containers or radiation or contamination levels in excess of limits specified in U.S. Department of Transportation and state of Washington regulations. The licensee shall briefly describe any repackaging operations of any of the disposal containers included in the shipment, plus any other information required by the department as a license condition. The licensee shall retain these records until the department transfers or terminates the license that authorizes the activities described in these regulations.

(6) Each licensee authorized to dispose of waste received from other persons shall file a copy of its financial report or a certified financial statement annually with the department in order to update the information base for determining financial qualifications.

(7)(a) Each licensee authorized to dispose of waste received from other persons, pursuant to this chapter, shall submit annual reports to the department. Reports shall be submitted by the end of the first calendar quarter of each year for the preceding year.

(b) The reports shall include:

(i) Specification of the quantity of each of the principal contaminants released to unrestricted areas in liquid and in airborne effluents during the preceding year;

(ii) The results of the environmental monitoring program;

(iii) A summary of licensee disposal unit survey and maintenance activities;

(iv) A summary, by waste class, of activities and quantities of radionuclides disposed of;

(v) Any instances in which observed site characteristics were significantly different from those described in the application for a license; and

(vi) Any other information the department may require.

(c) If the quantities of waste released during the reporting period, monitoring results, or maintenance performed are significantly different from those expected, the report must cover this specifically.

(8) In addition to the other requirements of this section, the licensee shall store, or have stored, manifest and other information pertaining to receipt and disposal of radioactive waste in an electronic recordkeeping system.

(a) The manifest information that must be electronically stored is:

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(i) That required in WAC 246-249-090 with the exception of shipper and carrier telephone numbers and shipper and consignee certifications; and
(ii) That information required in subsection (5) of this section.

(b) As specified in facility license conditions, the licensee shall have the capability to report the stored information, or subsets of this information, on a computer-readable medium.

WAC 246-250-620 Tests on land disposal facilities.
Each licensee shall perform, or permit the department to perform, any tests the department deems appropriate or necessary for the administration of the regulations in this chapter, including but not limited to, tests of:
(1) Wastes;
(2) Facilities used for the receipt, storage, treatment, handling, or disposal of wastes;
(3) Radiation detection and monitoring instruments; or
(4) Other equipment and devices used in connection with the receipt, possession, handling, treatment, storage, or disposal of waste.

WAC 246-250-700 Agency inspections of land disposal facilities.
(1) Each licensee shall afford to the department at all reasonable times opportunity to inspect waste not yet disposed of, and the premises, equipment, operations, and facilities in which wastes are received, possessed, handled, treated, stored, or disposed.
(2) Each licensee shall make available to the department for inspection, upon reasonable notice, records kept by it pursuant to these regulations. Authorized representatives of the department may copy and take away copies of, for the department's use, any record required to be kept pursuant to these regulations.