



STATE OF WASHINGTON

DEPARTMENT OF HEALTH

DIVISION OF RADIATION PROTECTION

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September 1, 1998

Paul Lohaus, Deputy Director
Office of State Programs
U.S. Nuclear Regulatory Commission
Mail Stop 5E4
Washington, D.C. 20555

Dear Mr. Lohaus:

This is a follow-up to Jack Hornor's Spring 1998 visit, which was in preparation of next year's Agreement State review by the U.S. NRC. Jack pointed out that some of our regulation revisions had not been sent to you for legal review, prior to their enactment, as required in the All Agreement State Letter SP-96-027. Enclosed you will find the amendatory sections (showing strikeouts and additions) of WAC 246-249, *Radioactive Waste - Use of the Commercial Disposal Site*, WAC 246-250, *Radioactive Waste - Licensing Land Disposal*, and WAC 246-252, *Radiation Protection - Uranium and/or Thorium Milling*. These three chapters are equivalent to the NRC's 10 CFR Part 40 and Part 61.

If you have any questions, please feel free to contact me at (360) 236-3241.

Sincerely,


Gary Robertson, Head
Waste Management Section

GR:krf

Enclosures

cc: Linda McClain, Office of State Programs

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AMENDATORY SECTION (Amending Order 187, filed 8/7/91, effective 9/7/91)

WAC 246-249-090 Transfer for disposal and manifests. (1) Each shipment of waste to a licensed land disposal facility shall be accompanied by a shipment manifest that contains the name, address, and telephone number of the person generating the waste. The manifest shall also include the name, address, and telephone number of the person transporting the waste to the land disposal facility. The manifest shall also indicate as completely as practicable: A physical description of the waste; the waste volume; radionuclide identity and quantity; the total radioactivity; and the principal chemical form. The solidification, stabilization, or sorption agent shall be specified. Wastes containing more than 0.1 percent chelating agents by weight shall be identified and the weight percentage of the chelating agent estimated. Wastes classified as Class A, Class B, or Class C in WAC 246-249-040 shall be clearly identified as such in the manifest unless transferred to a waste processor who treats or repackages wastes. The total quantity of the radionuclides H-3, C-14, Tc-99 and I-129 must be shown.

(2) The manifest required in subsection (1) of this section may be shipping papers used to meet United States Department of Transportation or United States Environmental Protection Agency regulations or requirements of the receiver, provided all of the required information is included. Copies of manifests required by this section may be legible carbon copies or legible photocopies.

(3) Each manifest shall include a certification by the waste generator that the transported materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the United States Department of Transportation and the agency. An authorized representative of the waste generator shall sign and date the manifest.

(4) Any generator licensee who transfers waste to a land disposal facility or a licensed waste collector shall comply with the following requirements. Any licensee who transfers waste to a licensed waste processor who treats or repackages waste shall comply with the requirements of (d) through (h) of this subsection. A licensee shall:

(a) Prepare all wastes so the waste is classified according to WAC 246-249-040 and meets the waste characteristics requirements in WAC 246-249-050.

(b) Label each package of waste to identify whether it is a Class A waste, Class B waste or Class C waste, in accordance with WAC 246-249-040;

(c) Conduct a quality control program to assure compliance with WAC 246-249-040 and 246-249-050; the program must include management evaluation of audits;

(d) Prepare shipping manifests to meet the requirements of subsections (1), (2), and (3) of this section;

(e) Forward a copy of the manifest to the intended recipient, at the time of shipment; or, deliver to a broker at the time the waste is collected, obtaining acknowledgement of receipt in the form of a signed copy of the manifest from the broker;

(f) Include one copy of the manifest with the shipment;

(g) Retain a copy of the manifest with documentation of acknowledgement of receipt as the record of transfer of licensed material as required by these regulations;

(h) For any shipments or any part of a shipment for which acknowledgement of receipt has not been received within the times set forth in this section, conduct an investigation in accordance with subsection (8) of this section.

(5) Any waste broker licensee who handles prepackaged waste shall:

(a) Acknowledge receipt of the waste from the generator within one week of receipt by returning a signed copy of the manifest.

(b) Prepare a new manifest to reflect consolidated shipments; the new manifest shall serve as a listing or index for the detailed generator manifests. Copies of the generator manifests shall be a part of the new manifest.

The waste broker may prepare a new manifest without attaching the generator manifests, provided the new manifest contains for each package the information specified in subsection (1) of this section. The broker licensee shall certify that nothing has been done to the waste which would invalidate the generator's certification.

(c) Forward a copy of the new manifest to the land disposal facility operator at the time of shipment;

(d) Include the new manifest with the shipment to the disposal site.

(e) Retain a copy of the manifest with documentation of acknowledgement of receipt as the record of transfer of licensed material as required by these regulations, and retain information from generator manifests as required by these regulations, and retain information from generator manifests until disposition is authorized by the agency; and

(f) For any shipments or any part of a shipment for which acknowledgement of receipt is not received within the times set forth in this section, conduct an investigation in accordance with subsection (8) of this section.

(6) Any licensed waste processor who treats or repackages wastes shall:

(a) Acknowledge receipt of the waste from the generator within one week of receipt by returning a signed copy of the manifest.

(b) Prepare a new manifest that meets the requirements of subsections (1), (2), and (3) of this section. Preparation of the new manifest reflects that the processor is responsible for the waste;

(c) Prepare all wastes so that the waste is classified according to WAC 246-249-040 and meets the waste characteristics requirement in WAC 246-249-050.

(d) Label each package of waste to identify whether it is Class A waste, Class B waste, or Class C waste, in accordance with WAC 246-249-040 and 246-249-060.

(e) A quality control program shall be conducted to assure compliance with WAC 246-249-040 and 246-249-050. The program shall include management evaluation of audits;

(f) Forward a copy of the new manifest to the disposal site operator or waste broker at the time of shipment, or deliver to a broker at the time the waste is collected, obtaining acknowledgement of receipt in the form of a signed copy of the manifest by the broker.

(g) Include the new manifest with the shipment;

(h) Retain copies of the original manifests and new manifests with documentation of acknowledgement of receipt as the record of transfer of licensed material required by these regulations.

(i) For any shipment or part of a shipment for which acknowledgement is not received within the times set forth in this section, conduct an investigation in accordance with subsection (8) of this section.

(7) The land disposal facility operator shall:

(a) Acknowledge receipt of the waste within one week of receipt by returning a signed copy of the manifest to the shipper. The shipper to be notified is the licensee who last possessed the waste and transferred the waste to the operator. The returned copy of the manifest shall indicate any discrepancies between materials listed on the manifest and materials received;

(b) Maintain copies of all completed manifests until the agency authorizes their disposition; and

(c) Notify the shipper (i.e., the generator or the broker) and the agency when any shipment or part of a shipment has not arrived within sixty days after the advanced manifest was received.

(8) Any shipment or part of a shipment for which acknowledgement is not received within the time set forth in this section must:

(a) Be investigated by the shipper if the shipper has not received notification of receipt within twenty days after transfer; and

(b) Be traced and reported. The investigation shall include tracing the shipment and filing a report with the agency. Each licensee who conducts a trace investigation shall file a written report with the agency within two weeks of completion of the investigation.

Definition of Land Disposal + Waste Site
QA Program 58 FIC 33886
RATS ID 1993-3 Due date 7/22/96

AMENDATORY SECTION (Amending WSR 94-01-073, filed 12/9/93, effective 1/9/94)

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.

61.7(a)

verbatim

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AMENDATORY SECTION (Amending Order 187, filed 8/7/91, effective 9/7/91)

WAC 246-250-010 Definitions. As used in this chapter, the following definitions apply:

(1) "Active maintenance" means any significant activity needed during the period of institutional control to maintain a reasonable assurance that the performance objectives of WAC 246-250-170 and 246-250-180 are met. Such active maintenance includes ongoing activities such as the pumping and treatment of water from a disposal unit or one-time measures such as replacement of a disposal unit cover. Active maintenance does not include custodial

activities such as repair of fencing, repair or replacement of monitoring equipment, revegetation, minor additions to soil cover, minor repair of disposal unit covers, and general disposal site upkeep such as mowing grass.

(2) "Buffer zone" means a portion of the disposal site that is controlled by the licensee or by the United States Department of Energy and that lies under the disposal units and between the disposal units and the boundary of the site.

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

(4) "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.

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

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

(7) "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.

(8) "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.

(9) "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.

(10) "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.

(11) "Hazardous waste" means those wastes designated as hazardous by United States Environmental Protection Agency regulations in 40 CFR Part 261.

(12) "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.

(13) "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.

(14) "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.

(15) "Land disposal facility" means the land, buildings, and equipment which are intended to be used for the disposal of wastes

and structures
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into the subsurface of the land. For purposes of this chapter, a land disposal facility does not include a geologic repository.

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

(17) "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.

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

(19) "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.

(20) "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.

(21) "Stability" means structural stability.

(22) "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.

(23) "Waste" means those low-level radioactive wastes that are acceptable for disposal in a land disposal facility. For the purposes of this definition, low-level waste has the same meaning as in the Low-Level Radioactive Waste Policy Amendments Act of 1985, Public Law 99-240, that is, radioactive waste not classified as high-level radioactive waste, spent nuclear fuel, or by-product material as defined in section 11 e.(2) of the Atomic Energy Act (uranium or thorium tailings and waste).

AMENDATORY SECTION (Amending Order 187, filed 8/7/91, effective 9/7/91)

6/1/2 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.

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(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.

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(10) A description of the quality ((~~control~~)) 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 ((~~control~~)) 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. *verbatim*

(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.

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

60 FR 15649

LLW Manifest

LLW Shipment Manifest Info +
Reporting 60 FR 15649
RATS ID: 1995-3 due 3/1/98

AMENDATORY SECTION (Amending Order 187, filed 8/7/91, effective 9/7/91)

61.80 - C 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.

61.80 (F) (5) Following receipt and acceptance of a shipment of radioactive waste, the licensee shall record the date ~~((of disposal of the waste, the specific location of waste in the disposal site, the condition of the waste packages as received, any discrepancies between materials listed on the manifest and those received, and any evidence of leaking or damaged packages or radiation or contamination levels in excess of limits specified in United States Department of Transportation and state of Washington regulations. The licensee shall briefly describe any repackaging operations of any of the waste packages included in the shipment, plus any other information required by the department as a license condition))~~ *verification* 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.

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variation
(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:

(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.

AMENDATORY SECTION (Amending Order 187, filed 8/7/91, effective 9/7/91)

6/2 **WAC 246-249-010 Definitions.** As used in this chapter, the following definitions apply:

(1) "Low-level radioactive waste" has the same meaning as in the Low-Level Radioactive Waste Policy Amendments Act of 1985, Public Law 99-240, that is, radioactive waste not classified as high-level radioactive waste, spent nuclear fuel, or by-product material as defined in section 11e.(2) of the Atomic Energy Act.

(2) "Broker" means a person who performs one or more of the following functions for a low-level radioactive waste generator:

(a) Arranges for transportation of the low-level radioactive waste;

(b) Collects and/or consolidates shipments of such low-level radioactive waste (waste collector);

(c) Processes such low-level radioactive waste in some manner; provided it shall not mean a carrier whose sole function is to transport such low-level radioactive waste (waste processor).

(3) (~~"Shipper" or "consignor"~~ means the last licensee to possess the low-level radioactive waste prior to transportation to the low-level radioactive waste disposal site, normally the generator when no broker is involved; otherwise, the broker.

(4) ~~"Generator"~~ means the last person who puts radioactive material to practical use, and who then declares it to be no longer of use or value.

OK ✓ X(5) "Chelating agent" means amine polycarboxylic acids (e.g., EDTA, DTPA), hydroxy-carboxylic acids, and polycarboxylic acids (e.g., citric acid, carbolic acid, and glucinic acid).

Part 20, App G ✓ OK X(4) "Chemical description" means a description of the principal chemical characteristics of a low-level radioactive waste.

OK X(5) "Computer-readable medium" means that the regulatory agency's computer can transfer the information from the medium into its memory.

OK X(6) "Consignee" means the designated receiver of the shipment of low-level radioactive waste.

OK X(7) "Decontamination facility" means a facility operating under a commission or agreement state license whose principal purpose is decontamination of equipment or materials to accomplish recycle, reuse, or other waste management objectives, and, for purposes of this section, is not considered to be a consignee for LLW shipments.

OK X(8) "Disposal container" means a container principally used to confine low-level radioactive waste during disposal operations at a land disposal facility (also see "high integrity container"). Note that for some shipments, the disposal container may be the

transport package.

OK X (9) "EPA identification number" means the number received by a transporter following application to the administrator of EPA as required by 40 CFR Part 263.

OK X (10) "Generator" means a licensee operating under a commission or agreement state license who:

(a) Is a waste generator as defined in this part; or

(b) Is the licensee to whom waste can be attributed within the context of the Low-Level Radioactive Waste Policy Amendments Act of 1985 (e.g., waste generated as a result of decontamination or recycle activities).

OK X (11) "High integrity container (HIC)" means a container commonly designed to meet the structural stability requirements of this chapter, and to meet department of transportation requirements for a Type A package.

BOK OKX (12) "Land disposal facility" means the land, buildings, and equipment which are intended to be used for the disposal of radioactive wastes. For the purposes of this chapter, a land disposal facility does not include a geologic repository.

(13) "Motor vehicle" means any vehicle, truck, tractor, semi-trailer, or trailer (or any permitted combination of these), driven by mechanical power and used upon the highways to carry property.

((+6+)) (14) "Motor common carrier" means a person holding itself out to the general public to provide motor vehicle transportation for compensation over regular or irregular routes, or both.

((+7+)) (15) "Motor contract carrier" means a person other than a common carrier providing motor vehicle transportation of property for compensation under continuing agreements with one or more persons.

((+8+)) (16) "Motor private carrier" means a person, other than a motor carrier, transporting property by motor vehicle when the person is the owner, lessee, or bailee of the property being transported; and the property is being transported for sale, lease, rent, or bailment, or to further a commercial enterprise.

((+9+)) (17) "Motor carrier" means a motor common carrier and a motor contract carrier.

OK X (18) "NRC Forms 540, 540A, 541, 541A, 542, and 542A" are official NRC Forms referenced in this section. Licensees need not use originals of these NRC Forms as long as any substitute forms are equivalent to the original documentation in respect to content, clarity, size, and location of information. Upon agreement between the shipper and consignee, NRC Forms 541 (and 541A) and NRC Forms 542 (and 542A) may be completed, transmitted, and stored in electronic media. The electronic media must have the capability for producing legible, accurate, and complete records in the format of the uniform manifest.

OK X (19) "Package" means the assembly of components necessary to ensure compliance with the packaging requirements of DOT regulations, together with its radioactive contents, as presented for transport.

OK X (20) "Physical description" means the items called for on NRC Form 541 to describe a low-level radioactive waste.

OK x (21) "Residual waste" means low-level radioactive waste resulting from processing or decontamination activities that cannot be easily separated into distinct batches attributable to specific waste generators. This waste is attributable to the processor or decontamination facility, as applicable.

OK x (22) "Shipper" means the licensed entity (i.e., the waste generator, waste collector, or waste processor) who offers low-level radioactive waste for transportation, typically consigning this type of waste to a licensed waste collector, waste processor, or land disposal facility operator.

((+10+)) (23) "Shipment" means the total low-level radioactive waste material transported in one motor vehicle.

OK x ((+11+)) (24) "Shipping paper" means NRC Form 540 and, if required, NRC Form 540A which includes the information required by DOT in 49 CFR Part 172.

(25) "Transuranic waste" means material contaminated with elements that have an atomic number greater than 92.

OK x (26) "Uniform Low-Level Radioactive Waste Manifest or uniform manifest" means the combination of NRC Forms 540, 541, and, if necessary, 542, and their respective continuation sheets as needed, or equivalent.

OK x (27) "Waste collector" means an entity, operating under a commission or agreement state license, whose principal purpose is to collect and consolidate waste generated by others, and to transfer this waste, without processing or repackaging the collected waste, to another licensed waste collector, licensed waste processor, or licensed land disposal facility.

OK x (28) "Waste description" means the physical, chemical and radiological description of a low-level radioactive waste as called for on NRC Form 541.

OK x (29) "Waste generator" means an entity, operating under a commission or agreement state license, who:

(a) Possesses any material or component that contains radioactivity or is radioactively contaminated for which the licensee foresees no further use; and

(b) Transfers this material or component to a licensed land disposal facility or to a licensed waste collector or processor for handling or treatment prior to disposal.

A licensee performing processing or decontamination services may be a "waste generator" if the transfer of low-level radioactive waste from its facility is defined as "residual waste."

OK x (30) "Waste processor" means an entity, operating under a commission or agreement state license, whose principal purpose is to process, repackage, or otherwise treat low-level radioactive material or waste generated by others prior to eventual transfer of waste to a licensed low-level radioactive waste land disposal facility.

OK x (31) "Waste type" means a waste within a disposal container having a unique physical description (i.e., a specific waste descriptor code or description; or a waste sorbed on or solidified or stabilized in a specifically defined media).

Same number as first page?
WAC 246-249-090 Transfer for disposal and manifests. ((1))

Each shipment of waste to a licensed land disposal facility shall be accompanied by a shipment manifest that contains the name, address, and telephone number of the person generating the waste. The manifest shall also include the name, address, and telephone number of the person transporting the waste to the land disposal facility. The manifest shall also indicate as completely as practicable: A physical description of the waste; the waste volume; radionuclide identity and quantity; the total radioactivity; and the principal chemical form. The solidification, stabilization, or sorption agent shall be specified. Wastes containing more than 0.1 percent chelating agents by weight shall be identified and the weight percentage of the chelating agent estimated. Wastes classified as Class A, Class B, or Class C in WAC 246-249-040 shall be clearly identified as such in the manifest unless transferred to a waste processor who treats or repackages wastes. The total quantity of the radionuclides H-3, C-14, Tc-99 and I-129 must be shown.

(2) The manifest required in subsection (1) of this section may be shipping papers used to meet United States Department of Transportation or United States Environmental Protection Agency regulations or requirements of the receiver, provided all of the required information is included. Copies of manifests required by this section may be legible carbon copies or legible photocopies.

(3) Each manifest shall include a certification by the waste generator that the transported materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the United States Department of Transportation and the agency. An authorized representative of the waste generator shall sign and date the manifest.

(4) Any generator licensee who transfers waste to a land disposal facility or a licensed waste collector shall comply with the following requirements. Any licensee who transfers waste to a licensed waste processor who treats or repackages waste shall comply with the requirements of (d) through (h) of this subsection. A licensee shall:

(a) Prepare all wastes so the waste is classified according to WAC 246-249-040 and meets the waste characteristics requirements in WAC 246-249-050.

(b) Label each package of waste to identify whether it is a Class A waste, Class B waste or Class C waste, in accordance with WAC 246-249-040;

(c) Conduct a quality control program to assure compliance with WAC 246-249-040 and 246-249-050; the program must include management evaluation of audits;

(d) Prepare shipping manifests to meet the requirements of subsections (1), (2), and (3) of this section;

(e) Forward a copy of the manifest to the intended recipient;

at the time of shipment; or, deliver to a broker at the time the waste is collected, obtaining acknowledgement of receipt in the form of a signed copy of the manifest from the broker;

(f) Include one copy of the manifest with the shipment;

(g) Retain a copy of the manifest with documentation of acknowledgement of receipt as the record of transfer of licensed material as required by these regulations;

(h) For any shipments or any part of a shipment for which acknowledgement of receipt has not been received within the times set forth in this section, conduct an investigation in accordance with subsection (8) of this section.

(5) Any waste broker licensee who handles prepackaged waste shall:

(a) Acknowledge receipt of the waste from the generator within one week of receipt by returning a signed copy of the manifest.

(b) Prepare a new manifest to reflect consolidated shipments; the new manifest shall serve as a listing or index for the detailed generator manifests. Copies of the generator manifests shall be a part of the new manifest.

The waste broker may prepare a new manifest without attaching the generator manifests, provided the new manifest contains for each package the information specified in subsection (1) of this section. The broker licensee shall certify that nothing has been done to the waste which would invalidate the generator's certification.

(c) Forward a copy of the new manifest to the land disposal facility operator at the time of shipment;

(d) Include the new manifest with the shipment to the disposal site.

(e) Retain a copy of the manifest with documentation of acknowledgement of receipt as the record of transfer of licensed material as required by these regulations, and retain information from generator manifests as required by these regulations, and retain information from generator manifests until disposition is authorized by the agency; and

(f) For any shipments or any part of a shipment for which acknowledgement of receipt is not received within the times set forth in this section, conduct an investigation in accordance with subsection (8) of this section.

(6) Any licensed waste processor who treats or repackages wastes shall:

(a) Acknowledge receipt of the waste from the generator within one week of receipt by returning a signed copy of the manifest.

(b) Prepare a new manifest that meets the requirements of subsections (1), (2), and (3) of this section. Preparation of the new manifest reflects that the processor is responsible for the waste;

(c) Prepare all wastes so that the waste is classified according to WAC 246-249-040 and meets the waste characteristics requirement in WAC 246-249-050.

(d) Label each package of waste to identify whether it is Class A waste, Class B waste, or Class C waste, in accordance with WAC 246-249-040 and 246-249-060.

~~(e) A quality control program shall be conducted to assure compliance with WAC 246-249-040 and 246-249-050. The program shall include management evaluation of audits;~~

~~(f) Forward a copy of the new manifest to the disposal site operator or waste broker at the time of shipment, or deliver to a broker at the time the waste is collected, obtaining acknowledgement of receipt in the form of a signed copy of the manifest by the broker.~~

~~(g) Include the new manifest with the shipment;~~

~~(h) Retain copies of the original manifests and new manifests with documentation of acknowledgement of receipt as the record of transfer of licensed material required by these regulations.~~

~~(i) For any shipment or part of a shipment for which acknowledgement is not received within the times set forth in this section, conduct an investigation in accordance with subsection (8) of this section.~~

~~(7) The land disposal facility operator shall:~~

~~(a) Acknowledge receipt of the waste within one week of receipt by returning a signed copy of the manifest to the shipper. The shipper to be notified is the licensee who last possessed the waste and transferred the waste to the operator. The returned copy of the manifest shall indicate any discrepancies between materials listed on the manifest and materials received;~~

~~(b) Maintain copies of all completed manifests until the agency authorizes their disposition; and~~

~~(c) Notify the shipper (i.e., the generator or the broker) and the agency when any shipment or part of a shipment has not arrived within sixty days after the advanced manifest was received.~~

~~(8) Any shipment or part of a shipment for which acknowledgement is not received within the time set forth in this section must:~~

~~(a) Be investigated by the shipper if the shipper has not received notification of receipt within twenty days after transfer; and~~

~~(b) Be traced and reported. The investigation shall include tracing the shipment and filing a report with the agency. Each licensee who conducts a trace investigation shall file a written report with the agency within two weeks of completion of the investigation.))~~ The requirements of this section are designed to control transfers of low-level radioactive waste by any waste generator, waste collector, or waste processor licensee who ships low-level waste either directly, or indirectly through a waste collector or waste processor, to a licensed low-level waste land disposal facility; establish a manifest tracking system; and supplement existing requirements concerning transfers and recordkeeping for those wastes.

(1) Effective March 1, 1998, each shipment of radioactive waste intended for disposal at a licensed land disposal facility in the state of Washington must be accompanied by a uniform low-level radioactive waste shipment manifest.

(2) Any licensee shipping radioactive waste intended for ultimate disposal at a licensed land disposal facility must document the information required on NRC's Uniform Low-Level

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Radioactive Waste Manifest and transfer this recorded manifest information to the intended consignee in accordance with this section.

(a) Each shipment manifest must include a certification by the waste generator as specified in this section.

(b) Each person involved in the transfer for disposal and disposal of waste, including the waste generator, waste collector, waste processor, and disposal facility operator, shall comply with the requirements specified in this section.

(c) When recording information on shipment manifests, information must be recorded in the International System of Units (SI) or in SI and units of curie, rad, rem, including multiples and subdivisions.

(3) A waste generator, collector, or processor who transports, or offers for transportation, low-level radioactive waste intended for ultimate disposal at a licensed low-level radioactive waste land disposal facility must prepare a manifest reflecting information requested on applicable NRC Forms 540 (Uniform Low-Level Radioactive Waste Manifest (Shipping Paper)) and 541 (Uniform Low-Level Radioactive Waste Manifest (Container and Waste Description)) and, if necessary, on an applicable NRC Form 542 (Uniform Low-Level Radioactive Waste Manifest (Manifest Index and Regional Compact Tabulation)). NRC Forms 540 and 540A must be completed and must physically accompany the pertinent low-level waste shipment. Upon agreement between shipper and consignee, NRC Forms 541 and 541A and 542 and 542A may be completed, transmitted, and stored in electronic media with the capability for producing legible, accurate, and complete records on the respective forms. Licensees are not required by the department to comply with the manifesting requirements of this section when they ship:

OK ✓ (a) LLW for processing and expect its return (i.e., for storage under their license) prior to disposal at a licensed land disposal facility;

OK ✓ (b) LLW that is being returned to the licensee who is the "waste generator" or "generator," as defined in this part; or

OK ✓ (c) Radioactively contaminated material to a "waste processor" that becomes the processor's "residual waste."

OK ✓ For guidance in completing these forms, refer to the instructions that accompany the forms. Copies of manifests required by this section may be legible carbon copies, photocopies, or computer printouts that reproduce the data in the format of the uniform manifest.

OK ✓ This section includes information requirements of the U.S. Department of Transportation, as codified in 49 CFR Part 172. Information on hazardous, medical, or other waste, required to meet Environmental Protection Agency regulations, as codified in 40 CFR Parts 259, 261 or elsewhere, is not addressed in this section, and must be provided on the required EPA forms. However, the required EPA forms must accompany the Uniform Low-Level Radioactive Waste Manifest required by this section.

OK ✓ (4) Information requirements.

(a) General information.

The shipper of the radioactive waste, shall provide the

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OK following information on the uniform manifest:

OK ✓(i) The name, facility address, and telephone number of the licensee shipping the waste;

OK ✓(ii) An explicit declaration indicating whether the shipper is acting as a waste generator, collector, processor, or a combination of these identifiers for purposes of the manifested shipment; and

OK ✓(iii) The name, address, and telephone number, or the name and EPA identification number for the carrier transporting the waste.

OK ✓(b) Shipment information.

The shipper of the radioactive waste shall provide the following information regarding the waste shipment on the uniform manifest:

✓(i) The date of the waste shipment;

✓(ii) The total number of packages/disposal containers;

✓(iii) The total disposal volume and disposal weight in the shipment;

✓(iv) The total radionuclide activity in the shipment;

✓(v) The activity of each of the radionuclides H-3, C-14, Tc-99, and I-129 contained in the shipment; and

✓(vi) The total masses of U-233, U-235, and plutonium in special nuclear material, and the total mass of uranium and thorium in source material.

OK ✓(c) Disposal container and waste information.

The shipper of the radioactive waste shall provide the following information on the uniform manifest regarding the waste and each disposal container of waste in the shipment:

✓(i) An alphabetic or numeric identification that uniquely identifies each disposal container in the shipment;

✓(ii) A physical description of the disposal container, including the manufacturer and model of any high integrity container;

✓(iii) The volume displaced by the disposal container;

✓(iv) The gross weight of the disposal container, including the waste;

✓(v) For waste consigned to a disposal facility, the maximum radiation level at the surface of each disposal container;

✓(vi) A physical and chemical description of the waste;

✓(vii) The total weight percentage of chelating agent for any waste containing more than 0.1% chelating agent by weight, plus the identity of the principal chelating agent;

✓(viii) The approximate volume of waste within a container;

✓(ix) The sorbing, stabilization, or solidification media, if any, and the identity of the solidification or stabilization media vendor and brand name;

C.9 ✓(x) The identities and activities of individual radionuclides contained in each container, the masses of U-233, U-235, and plutonium in special nuclear material, and the masses of uranium and thorium in source material. For discrete waste types (i.e., activated materials, contaminated equipment, mechanical filters, sealed source/devices, and wastes in solidification/stabilization media), the identities and activities of individual radionuclides associated with or contained on these waste types within a disposal container shall be reported;

✓(xi) The total radioactivity within each container; and
✓(xii) For wastes consigned to a disposal facility, the classification of the waste pursuant to this chapter. Waste not meeting the structural stability requirements of this chapter must be identified.

✓(d) Uncontainerized waste information.

The shipper of the radioactive waste shall provide the following information on the uniform manifest regarding a waste shipment delivered without a disposal container:

✓(i) The approximate volume and weight of the waste;

✓(ii) A physical and chemical description of the waste;

✓(iii) The total weight percentage of chelating agent if the chelating agent exceeds 0.1% by weight, plus the identity of the principal chelating agent;

✓(iv) For waste consigned to a disposal facility, the classification of the waste pursuant to this chapter. Waste not meeting the structural stability requirements of this chapter must be identified;

✓(v) The identities and activities of individual radionuclides contained in the waste, the masses of U-233, U-235, and plutonium in special nuclear material, and the masses of uranium and thorium in source material; and

✓(vi) For wastes consigned to a disposal facility, the maximum radiation levels at the surface of the waste.

✓(e) Multigenerator disposal container information.

✓This subsection applies to disposal containers enclosing mixtures of waste originating from different generators. (Note: The origin of the LLW resulting from a processor's activities may be attributable to one or more "generators," including "waste generators." It also applies to mixtures of wastes shipped in an uncontainerized form, for which portions of the mixture within the shipment originate from different generators.)

✓(i) For homogeneous mixtures of waste, such as incinerator ash, provide waste description applicable to the mixture and the volume of the waste attributed to each generator.

✓(ii) For heterogeneous mixtures of waste, such as the combined products from a large compactor, identify each generator contributing waste to the disposal container, and, for discrete waste types (i.e., activated materials, contaminated equipment, mechanical filters, sealed source/devices, and wastes in solidification/stabilization media), the identities and activities of individual radionuclides contained on these waste types within the disposal container. For each generator, provide the following:

✓(A) The volume of waste within the disposal container;

✓(B) A physical and chemical description of the waste, including the stabilization or solidification agent, if any;

✓(C) The total weight percentage of chelating agents for any disposal container containing more than 0.1% chelating agent by weight, plus the identity of the principal chelating agent;

✓(D) The sorbing, solidification, or stabilization media, if any, and the identity of the stabilization media vendor and brand name, if the media is claimed to meet stability requirements in WAC 246-249-050(2); and

✓(E) Radionuclide identities and activities contained in the waste, the masses of U-233, U-235, and plutonium in special nuclear material, and the masses of uranium and thorium in source material if contained in the waste.

✓(5) Certification.

✓An authorized representative of the waste generator, processor, or collector shall certify by signing and dating the shipment manifest that the transported materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, the U.S. Nuclear Regulatory Commission, and the department. A collector in signing the certification is certifying that nothing has been done to the collected waste which would invalidate the waste generator's certification.

✓(6) Control and tracking.

✓(a) Any licensee who transfers radioactive waste to a land disposal facility or a licensed waste collector shall comply with the requirements in (a)(i) through (ix) of this subsection. Any licensee who transfers waste to a licensed waste processor for waste treatment or repackaging shall comply with the requirements of (a)(iv) through (ix) of this section. A licensee shall:

✓(i) Prepare all wastes so that the waste is classified according to WAC 246-249-040 and meets the waste characteristics requirements in WAC 246-249-050;

✓(ii) Label each disposal container (or transport package if potential radiation hazards preclude labeling of the individual disposal container) of waste to identify whether it is Class A waste, Class B waste, Class C waste, or greater than Class C waste, in accordance with WAC 246-249-040;

✓(iii) Conduct a quality assurance program to assure compliance with WAC 246-249-040 and 246-249-050 (the program must include management evaluation of audits);

✓(iv) Prepare the NRC Uniform Low-Level Radioactive Waste Manifest as required by this section;

✓(v) Forward a copy or electronically transfer the Uniform Low-Level Radioactive Waste Manifest to the intended consignee so that either receipt of the manifest precedes the LLW shipment or the manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee. Using both methods is also acceptable;

✓(vi) Include NRC Form 540 (and NRC Form 540A, if required) with the shipment regardless of the option chosen in (a)(v) of this subsection;

✓(vii) Receive acknowledgement of the receipt of the shipment in the form of a signed copy of NRC Form 540;

✓(viii) Retain a copy of or electronically store the Uniform Low-Level Radioactive Waste Manifest and documentation of acknowledgement of receipt as the record of transfer of licensed material as required by these regulations; and

✓(ix) For any shipments or any part of a shipment for which acknowledgement of receipt has not been received within the times set forth in this section, conduct an investigation in accordance

with (e) of this subsection.

✓(b) Any waste collector licensee who handles only prepackaged waste shall:

✓(i) Acknowledge receipt of the waste from the shipper within one week of receipt by returning a signed copy of NRC Form 540;

✓(ii) Prepare a new manifest to reflect consolidated shipments that meet the requirements of this section. The waste collector shall ensure that, for each container of waste in the shipment, the manifest identifies the generator of that container of waste;

✓(iii) Forward a copy or electronically transfer the Uniform Low-Level Radioactive Waste Manifest to the intended consignee so that either receipt of the manifest precedes the LLW shipment, or the manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee. Using both methods is also acceptable;

✓(iv) Include NRC Form 540 (and NRC Form 540A, if required) with the shipment regardless of the option chosen in (b)(iii) of this subsection;

✓(v) Receive acknowledgement of the receipt of the shipment in the form of a signed copy of NRC Form 540;

✓(vi) Retain a copy of or electronically store the Uniform Low-Level Radioactive Waste Manifest and documentation of acknowledgement of receipt as the record of transfer of licensed material as required by these regulations;

✓(vii) For any shipments or any part of a shipment for which acknowledgement of receipt has not been received within the times set forth in this section, conduct an investigation in accordance with this section; and

✓(viii) Notify the shipper and the department when any shipment, or part of a shipment, has not arrived within sixty days after receipt of an advance manifest, unless notified by the shipper that the shipment has been canceled.

✓(c) Any licensed waste processor who treats or repackages waste shall:

✓(i) Acknowledge receipt of the waste from the shipper within one week of receipt by returning a signed copy of NRC Form 540;

✓(ii) Prepare a new manifest that meets the requirements of this section. Preparation of the new manifest reflects that the processor is responsible for meeting these requirements. For each container of waste in the shipment, the manifest shall identify the waste generators, the preprocessed waste volume, and the other information as required in subsection (4)(e) of this section;

✓(iii) Prepare all wastes so that the waste is classified according to WAC 246-249-040 and meets the waste characteristics requirements in WAC 246-249-050;

✓(iv) Label each package of waste to identify whether it is Class A waste, Class B waste, or Class C waste, in accordance with WAC 246-249-040 and 246-249-060;

✓(v) Conduct a quality assurance program to assure compliance with WAC 246-249-040 and 246-249-050 (the program shall include management evaluation of audits);

✓(vi) Forward a copy or electronically transfer the Uniform Low-Level Radioactive Waste Manifest to the intended consignee so

that either receipt of the manifest precedes the LLW shipment, or the manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee. Using both methods is also acceptable;

✓(vii) Include NRC Form 540 (and NRC Form 540A, if required) with the shipment regardless of the option chosen in (c)(vi) of this subsection;

✓(viii) Receive acknowledgement of the receipt of the shipment in the form of a signed copy of NRC Form 540;

✓(ix) Retain a copy of or electronically store the Uniform Low-Level Radioactive Waste Manifest and documentation of acknowledgement of receipt as the record of transfer of licensed material as required by these regulations;

✓(x) For any shipment or any part of a shipment for which acknowledgement of receipt has not been received within the times set forth in this section, conduct an investigation in accordance with (e) of this subsection; and

✓(xi) Notify the shipper and the department when any shipment, or part of a shipment, has not arrived within sixty days after receipt of an advance manifest, unless notified by the shipper that the shipment has been canceled.

✓(d) The land disposal facility operator shall:

✓(i) Acknowledge receipt of the waste within one week of receipt by returning, as a minimum, a signed copy of NRC Form 540 to the shipper. The shipper to be notified is the licensee who last possessed the waste and transferred the waste to the operator. If any discrepancy exists between materials listed on the Uniform Low-Level Radioactive Waste Manifest and materials received, copies or electronic transfer of the affected forms must be returned indicating the discrepancy;

✓(ii) Maintain copies of all completed manifests and electronically store the information required by WAC 246-250-600(8) until the license is terminated; and

✓(iii) Notify the shipper and the department when any shipment, or part of a shipment, has not arrived within sixty days after receipt of an advance manifest, unless notified by the shipper that the shipment has been canceled.

✓(e) Any shipment or part of a shipment for which acknowledgement is not received within the times set forth in this section must:

✓(i) Be investigated by the shipper if the shipper has not received notification or receipt within twenty days after transfer; and

✓(ii) Be traced and reported. The investigation shall include tracing the shipment and filing a report with the department. Each licensee who conducts a trace investigation shall file a written report with the department within two weeks of completion of the investigation.

7/1/94

U Mill Tailings Regs.

59 FR 28220 Conforming NRE to EPA

AMENDATORY SECTION (Amending Order 187, filed 8/7/91, effective 9/7/91)

WAC 246-252-010 Definitions. The following definitions apply to the specified terms as used in this chapter.

(1) "Aquifer" means a geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs. Any saturated zone created by uranium or thorium recovery operations would not be considered an aquifer unless the zone is, or potentially is (a) hydraulically interconnected to a natural aquifer, (b) capable of discharge to surface water, or (c) reasonably accessible because of migration beyond the vertical projection of the boundary of the land transferred to long-term government ownership and care in accordance with WAC 246-252-030(11).

59 FR 28220 (2) *tailings* "As expeditiously as practicable considering technological feasibility," for the purposes of Criterion 6A, means as quickly as possible considering: The physical characteristics of the tailings and the site; the limits of available technology; the need for consistency with mandatory requirements of other regulatory programs; and factors beyond the control of the licensee. The phrase permits consideration of the cost of compliance only to the extent specifically provided for by use of the term "available technology."

(3) "Available technology" means technologies and methods for emplacing a final radon barrier on uranium mill tailings piles or impoundments. This term shall not be construed to include extraordinary measures or techniques that would impose costs that are grossly excessive as measured by practice within the industry (or one that is reasonably analogous), (such as, by way of illustration only, unreasonable overtime, staffing, or transportation requirements, etc., considering normal practice in the industry; laser fusion of soils, etc.), provided there is reasonable progress toward emplacement of the final radon barrier. To determine grossly excessive costs, the relevant baseline against which cost shall be compared is the cost estimate for tailings impoundment closure contained in the licensee's approved reclamation plan, but costs beyond these estimates shall not automatically be considered grossly excessive.

(4) "Closure" means the activities following operations to decontaminate and decommission the buildings and site used to produce by-product materials and reclaim the tailings and/or waste disposal area.

((3+)) (5) "Closure plan" means the department approved plan to accomplish closure.

((4+)) (6) "Compliance period" begins when the department sets secondary groundwater protection standards and ends when the owner or operator's license is terminated and the site is transferred to the state or federal agency for long-term care.

((5+)) (7) "Dike" means an embankment or ridge of either natural or man-made materials used to prevent the movement of liquids, sludges, solids, or other materials.

((+6+)) (8) "Disposal area" means the area containing by-product materials to which the requirements of Criterion 6 apply.

((+7+)) (9) "Existing portion" means that land surface area of an existing surface impoundment on which significant quantities of uranium or thorium by-product materials had been placed prior to September 30, 1983.

59FR28220 ((+8+)) ✓ (10) "Factors beyond the control of the licensee" means factors proximately causing delay in meeting the schedule in the applicable reclamation plan for the timely emplacement of the final radon barrier notwithstanding the good faith efforts of the licensee to complete the barrier in compliance with paragraph (a) of Criterion 6A. These factors may include, but are not limited to:

(a) Physical conditions at the site;

(b) Inclement weather or climatic conditions;

(c) An act of God;

(d) An act of war;

(e) A judicial or administrative order or decision, or change to the statutory, regulatory, or other legal requirements applicable to the licensee's facility that would preclude or delay the performance of activities required for compliance;

(f) Labor disturbances;

(g) Any modifications, cessation or delay ordered by state, federal, or local agencies;

(h) Delays beyond the time reasonably required in obtaining necessary government permits, licenses, approvals, or consent for activities described in the reclamation plan proposed by the licensee that result from agency failure to take final action after the licensee has made a good faith, timely effort to submit legally sufficient applications, responses to requests (including relevant data requested by the agencies), or other information, including approval of the reclamation plan; and

(i) An act or omission of any third party over whom the licensee has no control.

✓ (11) "Final radon barrier" means the earthen cover (or approved alternative cover) over tailings or waste constructed to comply with Criterion 6 of WAC 246-252-030 (excluding erosion protection features).

(12) "Groundwater" means water below the land surface in a zone of saturation. For the purposes of this chapter, groundwater is the water contained within an aquifer as defined above.

((+9+)) (13) "Leachate" means any liquid, including any suspended or dissolved components in the liquid, that has percolated through or drained from the by-product material.

((+10+)) (14) "Licensed site" means the area contained within the boundary of a location under the control of persons generating or storing by-product materials under a department license.

((+11+)) (15) "Liner" means a continuous layer of natural or man-made materials, beneath or on the sides of a surface impoundment which restricts the downward or lateral escape of by-product material, hazardous constituents, or leachate.

59FR28220 ((+12+)) (16) "Milestone" means an action or event that is required to occur by an enforceable date.

(17) "Operation" means that a uranium or thorium mill tailings pile or impoundment is being used for the continued placement of by-product material or is in standby status for such placement. A pile or impoundment is in operation from the day that by-product

material is first placed in the pile or impoundment until the day final closure begins.

(18) "Point of compliance" is the site specific location in the uppermost aquifer where the groundwater protection standard must be met.

5928220 ((+13+)) ✓ (19) "Reclamation plan." for the purposes of Criterion 6A, means the plan detailing activities to accomplish reclamation of the tailings or waste disposal area in accordance with the technical criteria of WAC 246-252-030. The reclamation plan must include a schedule for reclamation milestones that are key to the completion of the final radon barrier including as appropriate, but not limited to, wind blown tailings retrieval and placement on the pile, interim stabilization (including dewatering or the removal of freestanding liquids and recontouring), and final radon barrier construction. (Reclamation of tailings must also be addressed in the closure plan; the detailed reclamation plan may be incorporated into the closure plan.)

(20) "Surface impoundment" means a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of liquid wastes or wastes containing free liquids, and which is not an injection well.

((+14+)) (21) "Uppermost aquifer" means the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary.

AMENDATORY SECTION (Amending WSR 94-01-073, filed 12/9/93, effective 1/9/94)

WAC 246-252-030 Criteria related to disposition of uranium mill tailings or wastes. As used in this section, the term "as low as reasonably achievable" has the same meaning as in WAC 246-220-007. The term by-product material means the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content.

As required by WAC 246-235-110(6), each applicant for a license to possess and use source material in conjunction with uranium or thorium milling, or by-product material at sites formerly associated with such milling, is required to include in a license application proposed specifications relating to the milling operation and the disposition of tailings or waste resulting from such milling activities. This section establishes criteria relating to the siting, operation, decontamination, decommissioning, and reclamation of mills and tailings or waste systems and sites at which such mills and systems are located and site and by-product material ownership. Applications must clearly demonstrate how these criteria have been addressed. The specifications shall be developed considering the expected full capacity of tailings or waste systems and the lifetime of mill operations. Where later expansions of systems or operations may be likely, the amenability of the disposal system to accommodate increased capacities without degradation in long-term stability and other performance factors shall be evaluated.

Licensees or applicants may propose alternatives to the specific requirements in these criteria. The alternative proposals may take into account local or regional conditions, including geology, topography, hydrology, and meteorology. The department may find that the proposed alternatives meet the department's requirements if the alternatives will achieve a level of stabilization and containment of the sites concerned, and a level of protection for public health, safety, and the environment from radiological and nonradiological hazards associated with the sites, which is equivalent to, to the extent practicable, or more stringent than the level which would be achieved by the requirements of the standards promulgated by the United States Environmental Protection Agency in 40 CFR 192, Subparts D and E.

(1) Criterion 1 - In selecting among alternative tailings disposal sites or judging the adequacy of existing tailings sites, the following site features which would contribute to meeting the broad objective of permanent isolation of the tailings and associated contaminants from man and the environment for one thousand years to the extent reasonably achievable, and in any case, for at least two hundred years without ongoing active maintenance shall be considered:

- (a) Remoteness from populated areas;
- (b) Hydrogeologic and other environmental conditions conducive to continued immobilization and isolation of contaminants from groundwater sources; and
- (c) Potential for minimizing erosion, disturbance, and dispersion by natural forces over the long term.

The site selection process must be an optimization to the maximum extent reasonably achievable in terms of these features.

In the selection of disposal sites, primary emphasis shall be given to isolation of tailings or wastes, a matter having long-term impacts, as opposed to consideration only of short-term convenience or benefits, such as minimization of transportation or land acquisition costs. While isolation of tailings will be a function of both site characteristics and engineering design, overriding consideration shall be given to siting features given the long-term nature of the tailings hazards.

Tailings shall be disposed in a manner such that no active maintenance is required to preserve the condition of the site.

(2) Criterion 2 - To avoid proliferation of small waste disposal sites, by-product material from in-situ extraction operations, such as residues from solution evaporation or contaminated control processes, and wastes from small remote above ground extraction operations shall be disposed at existing large mill tailings disposal sites; unless, considering the nature of the wastes, such as their volume and specific activity and the costs and environmental impacts of transporting the wastes to a large disposal site, such offsite disposal is demonstrated to be impracticable or the advantage of onsite burial clearly outweighs the benefits of reducing the perpetual surveillance obligations.

(3) Criterion 3 - The "prime option" for disposal of tailings is placement below grade, either in mines or specially excavated pits (that is, where the need for any specially constructed retention structure is eliminated).

The evaluation of alternative sites and disposal methods performed by mill operators in support of their proposed tailings disposal program (provided in applicants' environmental reports)

shall reflect serious consideration of this disposal mode. In some instances, below grade disposal may not be the most environmentally sound approach, such as might be the case if a groundwater formation is relatively close to the surface or not very well isolated by overlying soils and rock. Also, geologic and topographic conditions might make full, below grade burial impracticable; for example, near-surface bedrock could create prominent excavation costs while more suitable alternate sites may be available. Where full below grade burial is not practicable, the size of the retention structures, and the size and steepness of slopes of associated exposed embankments, shall be minimized by excavation to the maximum extent reasonably achievable or appropriate, given the geologic and hydrogeologic conditions at a site. In these cases, it must be demonstrated that an above-grade disposal program will provide reasonably equivalent isolation of the tailings from natural erosional forces.

(4) Criterion 4 - The following site and design criteria shall be adhered to whether tailings or wastes are disposed of above or below grade:

(a) Upstream rainfall catchment areas must be minimized to decrease erosion potential and the size of the probable maximum flood which could erode or wash out sections of the tailings disposal area.

(b) Topographic features shall provide good wind protection.

(c) Embankment and cover slopes shall be relatively flat after final stabilization to minimize erosion potential and to provide conservative factors of safety assuring long-term stability. The broad objective should be to contour final slopes to grades which are as close as possible to those which would be provided if tailings were disposed of below grade; this could, for example, lead to slopes of about ten horizontal to one vertical (10h:1v) or less steep. In general, slopes should not be steeper than about 5h:1v. Where steeper slopes are proposed, reasons why a slope less steep than 5h:1v would be impracticable should be provided, and compensating factors and conditions which make such slopes acceptable should be identified.

(d) A fully self-sustaining vegetative cover shall be established or rock cover employed to reduce wind and water erosion to negligible levels.

Where a full vegetative cover is not likely to be self-sustaining due to climatic conditions, such as in semi-arid and arid regions, rock cover shall be employed on slopes of the impoundment system. The NRC will consider relaxing this requirement for extremely gentle slopes such as those which may exist on the top of the pile.

The following factors shall be considered in establishing the final rock cover design to avoid displacement of rock particles by human and animal traffic or by natural processes, and to preclude undercutting and piping:

(i) Shape, size, composition, gradation of rock particles (excepting bedding material, average particle size shall be at least cobble size or greater);

(ii) Rock cover thickness and zoning of particles by size; and

(iii) Steepness of underlying slopes.

(e) Individual rock fragments shall be dense, sound, and resistant to abrasion, and free from defects that would tend to unduly increase their destruction by water and frost actions.

Weak, friable, or laminated aggregate shall not be used. Shale, rock laminated with shale, and cherts shall not be used.

Rock covering of slopes may not be required where top covers are on the order of ten meters or greater; impoundment slopes are on the order of 10h:1v or less; bulk cover materials have inherently favorable erosion resistance characteristics; and there is negligible drainage catchment area upstream of the pile, and there is good wind protection as described in (a) and (b) of this subsection.

(f) Impoundment surfaces shall be contoured to avoid areas of concentrated surface runoff or abrupt or sharp changes in slope gradient. In addition to rock cover on slopes, areas toward which surface runoff might be directed shall be well protected with substantial rock cover (riprap). In addition to providing for stability of the impoundment systems itself, the overall stability, erosion potential, and geomorphology of surrounding terrain shall be evaluated to assure that there are no processes, such as gully erosion, which would lead to impoundment instability.

(g) The impoundment shall not be located near a capable fault that could cause a maximum credible earthquake larger than that which the impoundment could reasonably be expected to withstand. As used in this criterion, the term "capable fault" has the same meaning as defined in Section III (g) of Appendix A of 10 CFR Part 100. The term "maximum credible earthquake" means that earthquake which would cause the maximum vibratory ground motion based upon an evaluation of earthquake potential considering the regional and local geology and seismology and specific characteristics of local subsurface material.

(h) The impoundment, where feasible, should be designed to incorporate features which will promote deposition of suspended particles. For example, design features which promote deposition of sediment suspended in any runoff which flows into the impoundment area might be utilized; the object of such a design feature would be to enhance the thickness of cover over time.

(5) Criterion 5 - Criteria 5(a) through 5(g) and new Criterion 13 incorporate the basic groundwater protection standards imposed by the United States Environmental Protection Agency in 40 CFR Part 192, Subparts D and E (48 FR 45926; October 7, 1983) which apply during operations and prior to the end of closure. Groundwater monitoring to comply with these standards is required by Criterion 7.

(a) The primary groundwater protection standard is a design standard for surface impoundments used to manage uranium and thorium by-product material. Surface impoundments (except for an existing portion) must have a liner that is designed, constructed, and installed to prevent any migration of wastes out of the impoundment to the adjacent subsurface soil, groundwater, or surface water at any time during the active life (including the closure period) of the impoundment. The liner may be constructed of materials that may allow wastes to migrate into the liner (but not into the adjacent subsurface soil, groundwater, or surface water) during the active life of the facility, provided that impoundment closure includes removal or decontamination of all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate. For impoundments that will be closed with the liner material left in place, the liner must be

constructed of materials that can prevent wastes from migrating into the liner during the active life of the facility.

(b) The liner required by (a) of this subsection must be:

(i) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

(ii) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and

(iii) Installed to cover all surrounding earth likely to be in contact with the wastes or leachate.

(c) The applicant or licensee will be exempted from the requirements of (a) of this subsection if the department finds, based on a demonstration by the applicant or licensee, that alternate design and operating practices, including the closure plan, together with site characteristics will prevent the migration of any hazardous constituents into groundwater or surface water at any future time. In deciding whether to grant an exemption, the department will consider:

(i) The nature and quantity of the wastes;

(ii) The proposed alternate design and operation;

(iii) The hydrogeologic setting of the facility, including the attenuative capacity and thickness of the liners and soils present between the impoundment and groundwater or surface water; and

(iv) All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to groundwater or surface water.

(d) A surface impoundment must be designed, constructed, maintained, and operated to prevent overtopping resulting from normal or abnormal operations; overfilling; wind and wave actions; rainfall; run-on; from malfunctions of level controllers, alarms, and other equipment; and human error.

(e) When dikes are used to form the surface impoundment, the dikes must be designed, constructed, and maintained with sufficient structural integrity to prevent massive failure of the dikes. In ensuring structural integrity, it must not be presumed that the liner system will function without leakage during the active life of the impoundment.

(f) Uranium and thorium by-product materials must be managed to conform to the following secondary groundwater protection standard: Hazardous constituents entering the groundwater from a licensed site must not exceed the specified concentration limits in the uppermost aquifer beyond the point of compliance during the compliance period. Hazardous constituents are those constituents identified by the department pursuant to (g) of this subsection. Specified concentration limits are those limits established by the department as indicated in (j) of this subsection. The department will also establish the point of compliance and compliance period on a site specific basis through license conditions and orders. The objective in selecting the point of compliance is to provide the earliest practicable warning that the impoundment is releasing hazardous constituents to the groundwater. The point of compliance must be selected to provide prompt indication of groundwater

contamination on the hydraulically downgradient edge of the disposal area. The department must identify hazardous constituents, establish concentration limits, set the compliance period, and adjust the point of compliance, if needed, when the detection monitoring established under criterion 7 indicates leakage of hazardous constituents from the disposal area.

(g) A constituent becomes a hazardous constituent subject to (j) of this subsection when the constituent:

(i) Is reasonably expected to be in or derived from the by-product material in the disposal area;

(ii) Has been detected in the groundwater in the uppermost aquifer; and

(iii) Is listed in WAC 246-252-050 Appendix A.

(h) The department may exclude a detected constituent from the set of hazardous constituents on a site specific basis if it finds that the constituent is not capable of posing a substantial present or potential hazard to human health or the environment. In deciding whether to exclude constituents, the department will consider the following:

(i) Potential adverse effect on groundwater quality, considering --

(A) The physical and chemical characteristics of the waste in the licensed site, including its potential for migration;

(B) The hydrogeological characteristics of the facility and surrounding land;

(C) The quantity of groundwater and the direction of groundwater flow;

(D) The proximity and withdrawal rates of groundwater users;

(E) The current and future uses of groundwater in the area;

(F) The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater quality;

(G) The potential for health risks caused by human exposure to waste constituents;

(H) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;

(I) The persistence and permanence of the potential adverse effects.

(ii) Potential adverse effects on hydraulically-connected surface water quality, considering --

(A) The volume and physical and chemical characteristics of the waste in the licensed site;

(B) The hydrogeological characteristics of the facility and surrounding land;

(C) The quantity and quality of groundwater, and the direction of groundwater flow;

(D) The patterns of rainfall in the region;

(E) The proximity of the licensed site to surface waters;

(F) The current and future uses of surface waters in the area and any water quality standards established for those surface waters;

(G) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality;

(H) The potential for health risks caused by human exposure to waste constituents;

(I) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and
(J) The persistence and permanence of the potential adverse effects.

(i) In making any determinations under (h) and (k) of this subsection about the use of groundwater in the area around the facility, the department will consider any identification of underground sources of drinking water and exempted aquifers made by the United States Environmental Protection Agency.

(j) At the point of compliance, the concentration of a hazardous constituent must not exceed --

(i) The department approved background concentration of that constituent in the groundwater;

(ii) The respective value given in the table in subsection (5)(1) of this section if the constituent is listed in the table and if the background level of the constituent is below the value listed; or

(iii) An alternate concentration limit established by the department.

(k) Conceptually, background concentrations pose no incremental hazards and the drinking water limits in (j)(i) of this subsection state acceptable hazards but these two options may not be practically achievable at a specific site. Alternate concentration limits that present no significant hazard may be proposed by licensees for department consideration. Licensees must provide the basis for any proposed limits including consideration of practicable corrective actions, that limits are as low as reasonably achievable, and information on the factors the department must consider.

The department will establish a site specific alternate concentration limit for a hazardous constituent as provided in (j) of this subsection if it finds that the constituent will not pose a substantial present or potential hazard to human health or the environment as long as the alternate concentration limit is not exceeded. In establishing alternate concentration limits, the department will apply its as low as reasonably achievable criterion in this chapter. The department will also consider the following factors:

(i) Potential adverse effects on groundwater quality, considering --

(A) The physical and chemical characteristics of the waste in the licensed site including its potential for migration;

(B) The hydrogeological characteristics of the facility and surrounding land;

(C) The quantity of groundwater and the direction of groundwater flow;

(D) The proximity and withdrawal rates of groundwater users;

(E) The current and future uses of groundwater in the area;

(F) The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater quality;

(G) The potential for health risks caused by human exposure to waste constituents;

(H) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;

(I) The persistence and permanence of the potential adverse effects.

(ii) Potential adverse effects on hydraulically-connected surface water quality, considering --

(A) The volume and physical and chemical characteristics of the waste in the licensed site;

(B) The hydrogeological characteristics of the facility and surrounding land;

(C) The quantity and quality of groundwater, and the direction of groundwater flow;

(D) The patterns of rainfall in the region;

(E) The proximity of the licensed site to surface waters;

(F) The current and future uses of surface waters in the area and any water quality standards established for those surface waters;

(G) The existing quality of surface water including other sources of contamination and the cumulative impact on surface water quality;

(H) The potential for health risks caused by human exposure to waste constituents;

(I) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

(J) The persistence and permanence of the potential adverse effects.

(1) MAXIMUM VALUES FOR GROUNDWATER PROTECTION:

Constituent or Property	Maximum Concentration
	Milligrams per liter
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Lead	0.05
Mercury	0.002
Selenium	0.01
Silver	0.05
Endrin (1,2,3,4,10,10-hexachloro-1,7 -epoxy- 1,4,4a,5,6,7,8,9a-octahydro-1, 4-endo, endo- 5,8-dimethano naphthalene)	0.0002
Lindane (1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer)	0.004
Methoxychlor (1,1,1-Trichloro-2,2-bis (p-methoxyphenylethane)	0.1
Toxaphene (C ₁₂ H ₁₀ Cl ₆ , Technical chlorinated camphene, 67-69 percent chlorine)	0.005
2,4-D (2,4-Dichlorophenoxyacetic acid)	0.1
2,4,5-TP Silvex (2,4,5-Trichlorophenoxypropionic acid)	0.01
	Picocuries per liter
Combined radium - 226 and radium - 228	5
Gross alpha - particle activity (excluding radon and uranium when producing uranium by-product material or thorium when producing thorium by-product material)	15

(m) If the groundwater protection standards established under (f) of this subsection are exceeded at a licensed site, a corrective action program must be put into operation as soon as is practicable, and in no event later than eighteen months after the department finds that the standards have been exceeded. The licensee shall submit the proposed corrective action program and

supporting rationale for department approval prior to putting the program into operation, unless otherwise directed by the department. The objective of the program is to return hazardous constituent concentration levels in groundwater to the concentration limits set as standards. The licensee's proposed program must address removing the hazardous constituents that have entered the groundwater at the point of compliance or treating them in place. The program must also address removing or treating in place any hazardous constituents that exceed concentration limits in groundwater between the point of compliance and the downgradient facility property boundary. The licensee shall continue corrective action measures to the extent necessary to achieve and maintain compliance with the groundwater protection standard. The department will determine when the licensee may terminate corrective action measures based on data from the groundwater monitoring program and other information that provide reasonable assurance that the groundwater protection standard will not be exceeded.

(n) In developing and conducting groundwater protection programs, applicants and licensees shall also consider the following:

(i) Installation of bottom liners (where synthetic liners are used, a leakage detection system must be installed immediately below the liner to ensure major failures are detected if they occur. This is in addition to the groundwater monitoring program conducted as provided in Criterion 7. Where clay liners are proposed or relatively thin, in-situ clay soils are to be relied upon for seepage control, tests must be conducted with representative tailings solutions and clay materials to confirm that no significant deterioration of permeability or stability properties will occur with continuous exposure of clay to tailings solutions. Tests must be run for a sufficient period of time to reveal any effects if they are going to occur (in some cases deterioration has been observed to occur rather rapidly after about nine months of exposure)).

(ii) Mill process designs which provide the maximum practicable recycle of solutions and conservation of water to reduce the net input of liquid to the tailings impoundment.

(iii) Dewatering of tailings by process devices and/or in-situ drainage systems (at new sites, tailings must be dewatered by a drainage system installed at the bottom of the impoundment to lower the phreatic surface and reduce the driving head of seepage, unless tests show tailings are not amenable to such a system. Where in-situ dewatering is to be conducted, the impoundment bottom must be graded to assure that the drains are at a low point. The drains must be protected by suitable filter materials to assure that drains remain free running. The drainage system must also be adequately sized to assure good drainage).

(iv) Neutralization to promote immobilization of hazardous constituents.

(o) Where groundwater impacts are occurring at an existing site due to seepage, action must be taken to alleviate conditions that lead to excessive seepage impacts and restore groundwater quality. The specific seepage control and groundwater protection method, or combination of methods, to be used must be worked out on a site-specific basis. Technical specifications must be prepared to control installation of seepage control systems. A quality

assurance, testing, and inspection program, which includes supervision by a qualified engineer or scientist, must be established to assure the specifications are met.

(p) In support of a tailings disposal system proposal, the applicant/operator shall supply information concerning the following:

(i) The chemical and radioactive characteristics of the waste solutions.

(ii) The characteristics of the underlying soil and geologic formations particularly as they will control transport of contaminants and solutions. This includes detailed information concerning extent, thickness, uniformity, shape, and orientation of underlying strata. Hydraulic gradients and conductivities of the various formations must be determined. This information must be gathered from borings and field survey methods taken within the proposed impoundment area and in surrounding areas where contaminants might migrate to groundwater. The information gathered on boreholes must include both geologic and geophysical logs in sufficient number and degree of sophistication to allow determining significant discontinuities, fractures, and channeled deposits of high hydraulic conductivity. If field survey methods are used, they should be in addition to and calibrated with borehole logging. Hydrologic parameters such as permeability may not be determined on the basis of laboratory analysis of samples alone; a sufficient amount of field testing (e.g., pump tests) must be conducted to assure actual field properties are adequately understood. Testing must be conducted to allow estimating chemisorption attenuation properties of underlying soil and rock.

(iii) Location, extent, quality, capacity and current uses of any groundwater at and near the site.

(q) Steps must be taken during stockpiling of ore to minimize penetration of radionuclides into underlying soils; suitable methods include lining and/or compaction of ore storage areas.

(6) Criterion 6 - ~~((a) In cases where waste by product material is to be permanently disposed, an earthen cover shall be placed over tailings or wastes at the end of the milling operations and the waste disposal area shall be closed in accordance with a design which shall provide reasonable assurance of control of radiological hazard to:~~

~~(i) Be effective for one thousand years, to the extent reasonably achievable, and, in any case, for at least two hundred years; and~~

~~(ii) Limit releases of Radon 222 from uranium by product materials, and Radon 220 from thorium by product materials, to the atmosphere so as to not exceed an average release rate of twenty picocuries per square meter per second (pCi/ms) to the extent practicable throughout the effective design life determined pursuant to (a)(i) of this subsection. In computing required tailings cover thicknesses, moisture in soils in excess of amounts found normally in similar soils in similar circumstances shall not be considered. Direct gamma exposure from the tailings or wastes should be reduced to background levels. The effects of any thin synthetic layer shall not be taken into account in determining the calculated radon exhalation level. If nonsoil materials are proposed as cover materials, it must be demonstrated that such materials will not crack or degrade by differential settlement, weathering, or other mechanism over long term time intervals.~~

~~(b) Near surface materials (i.e., within the top three meters) shall not include mine waste or rock that contains elevated levels of radium; soils used for near surface cover must be essentially the same, as far as radioactivity is concerned, as that of surrounding soils. This is to insure that surface radon exhalation is not significantly above background because of the cover material itself.~~

~~(c) The design requirements in this criterion for longevity and control of radon releases shall apply to any portion of a licensed and/or disposal site unless such portion contains a concentration of radium in land, averaged over areas of one hundred square meters, which, as a result of by product material does not exceed the background level by more than:~~

~~(i) Five picocuries per gram (pCi/g) of Radium 226, or, in the case of thorium by product material, Radium 228, averaged over the first fifteen centimeters below the surface; and~~

~~(ii) Fifteen pCi/g of Radium 226, or, in the case of thorium by product material, Radium 228, averaged over fifteen centimeters thick layers more than fifteen centimeters below the surface.~~

~~(d) The licensee must also address the nonradiological hazards associated with the wastes in planning and implementing closure. The licensee shall ensure that disposal areas are closed in a manner that minimizes the need for further maintenance. To the extent necessary to prevent threats to human health and the environment, the licensee shall control, minimize, or eliminate post closure escape of nonradiological hazardous constituents, leachate, contaminated rainwater, or waste decomposition products to the ground or surface waters or to the atmosphere.~~

Footnotes:

¹ The standard applies to design. Monitoring for radon after installation of an appropriately designed cover is not required.

² This average shall apply to the entire surface of each disposal area over periods of at least one year, but short compared to one hundred years. Radon will come from both uranium by-product materials and from covering material. Radon emissions from covering materials should be estimated as part of developing a closure plan for each site. The standard, however, applies only to emissions from by-product materials to the atmosphere.))

59 FR 28220
(a) In disposing of waste by-product material, licensees shall place an earthen cover (or approved alternative) over tailings or wastes at the end of milling operations and shall close the waste disposal area in accordance with a design which provides reasonable assurance of control of radiological hazards to:

(i) Be effective for 1,000 years, to the extent reasonably achievable, and, in any case, for at least 200 years; and

(ii) Limit releases of Radon-222 from uranium by-product materials, and Radon-220 from thorium by-product materials, to the atmosphere so as not to exceed an average release rate of 20 picocuries per square meter per second (pCi/m's) to the extent practicable throughout the effective design life determined pursuant to (a)(i) of this subsection (this criterion). In computing required tailings cover thicknesses, moisture in soils in excess of amounts found normally in similar soils in similar circumstances may not be considered. Direct gamma exposure from the tailings or wastes should be reduced to background levels. The effects of any thin synthetic layer may not be taken into account in determining the calculated radon exhalation level. If nonsoil materials are proposed as cover materials, it must be demonstrated that these materials will not crack or degrade by differential settlement, weathering, or other mechanism, over long-term intervals.

✓(b) As soon as reasonably achievable after emplacement of the final cover to limit releases of Radon-222 from uranium by-product material and prior to placement of erosion protection barriers or other features necessary for long-term control of the tailings, the licensees shall verify through appropriate testing and analysis that the design and construction of the final radon barrier is effective in limiting releases of Radon-222 to a level not exceeding 20 pCi/m's averaged over the entire pile or impoundment using the procedures described in 40 CFR part 61, appendix B, Method 115, or another method of verification approved by the Nuclear Regulatory Commission as being at least as effective in demonstrating the effectiveness of the final radon barrier.

✓(c) When phased emplacement of the final radon barrier is included in the applicable reclamation plan, the verification of Radon-222 release rates required in (b) of this subsection (this criterion) must be conducted for each portion of the pile or impoundment as the final radon barrier for that portion is emplaced.

✓(d) Within ninety days of the completion of all testing and analysis relevant to the required verification in (b) and (c) of this subsection (this criterion), the uranium mill licensee shall report to the department the results detailing the actions taken to verify that levels of release of Radon-222 do not exceed 20 pCi/m's when averaged over the entire pile or impoundment. The licensee shall maintain records until termination of the license documenting the source of input parameters including the results of all measurements on which they are based, the calculations and/or analytical methods used to derive values for input parameters, and the procedure used to determine compliance. These records shall be kept in a form suitable for transfer to the custodial agency at the time of transfer of the site to DOE or a state for long-term care if requested.

✓(e) Near surface cover materials (i.e., within the top three meters) may not include waste or rock that contains elevated levels of radium; soils used for near surface cover must be essentially the same, as far as radioactivity is concerned, as that of surrounding surface soils. This is to ensure that surface radon exhalation is not significantly above background because of the cover material itself.

✓(f) The design requirements in this criterion for longevity and control of radon releases apply to any portion of a licensed and/or disposal site unless such portion contains a concentration of radium in land, averaged over areas of 100 square meters, which, as a result of by-product material, does not exceed the background level by more than:

✓(i) 5 picocuries per gram (pCi/g) of radium-226, or, in the case of thorium by-product material, radium-228, averaged over the first 15 centimeters (cm) below the surface; and

✓(ii) 15 pCi/g of radium-226, or, in the case of thorium by-product material, radium-228, averaged over 15-cm thick layers more than 15 cm below the surface.

✓(g) The licensee shall also address the nonradiological hazards associated with the wastes in planning and implementing closure. The licensee shall ensure that disposal areas are closed in a manner that minimizes the need for further maintenance. To the extent necessary to prevent threats to human health and the environment, the licensee shall control, minimize, or eliminate

post-closure escape of nonradiological hazardous constituents, leachate, contaminated rainwater, or waste decomposition products to the ground or surface waters or to the atmosphere.

Footnote: { In the case of thorium by-product materials, the standard applies only to design. Monitoring for radon emissions from thorium by-product materials after installation of an appropriately designed cover is not required.

This average applies to the entire surface of each disposal area over a period of at least one year, but a period short compared to 100 years. Radon will come from both by-product materials and from covering materials. Radon emissions from covering materials should be estimated as part of developing a closure plan for each site. The standard, however, applies only to emissions from by-product materials to the atmosphere.

✓ Criterion 6A - (a) For impoundments containing uranium by-product materials, the final radon barrier must be completed as expeditiously as practicable considering technological feasibility after the pile or impoundment ceases operation in accordance with a written, department-approved reclamation plan. (The term as expeditiously as practicable considering technological feasibility as specifically defined in WAC 246-252-010 includes factors beyond the control of the licensee.) Deadlines for completion of the final radon barrier and, if applicable, the following interim milestones must be established as a condition of the individual license: Windblown tailings retrieval and placement on the pile and interim stabilization (including dewatering or the removal of freestanding liquids and recontouring). The placement of erosion protection barriers or other features necessary for long-term control of the tailings must also be completed in a timely manner in accordance with a written, approved reclamation plan.

✓ (b) The department may approve a licensee's request to extend the time for performance of milestones related to emplacement of the final radon barrier if, after providing an opportunity for public participation, the department finds that the licensee has adequately demonstrated in the manner required in subsection (6)(b) of this section (Criterion 6) that releases of Radon-222 do not exceed an average of 20 pCi/m's. If the delay is approved on the basis that the radon releases do not exceed 20 pCi/m's, a verification of radon levels, as required by subsection (6)(b) of this section (Criterion 6), must be made annually during the period of delay. In addition, once the department has established the date in the reclamation plan for the milestone for completion of the final radon barrier, the department may extend that date based on cost if, after providing an opportunity for public participation, the department finds that the licensee is making good faith efforts to emplace the final radon barrier, the delay is consistent with the definitions of available technology, and the radon releases caused by the delay will not result in a significant incremental risk to the public health.

✓ (c) The department may authorize by license amendment, upon licensee request, a portion of the impoundment to accept uranium by-product material or such materials that are similar in physical, chemical, and radiological characteristics to the uranium mill tailings and associated wastes already in the pile or impoundment from other sources, during the closure process. No such authorization will be made if it results in a delay or impediment to emplacement of the final radon barrier over the remainder of the impoundment in a manner that will achieve levels of Radon-222 releases not exceeding 20 pCi/m's averaged over the entire impoundment. The verification required in subsection (6)(b) of this section (Criterion 6) may be completed with a portion of the impoundment being used for further disposal if the department makes

a final finding that the impoundment will continue to achieve a level of Radon-222 releases not exceeding 20 pCi/m's averaged over the entire impoundment. In this case, after the final radon barrier is complete except for the continuing disposal area:

- (i) Only by-product material will be authorized for disposal;
- (ii) The disposal will be limited to the specified existing disposal area; and
- (iii) This authorization will only be made after providing opportunity for public participation.

Reclamation of the disposal area, as appropriate, must be completed in a timely manner after disposal operations cease in accordance with subsection (6)(a) of this section (Criterion 6); however, these actions are not required to be complete as part of meeting the deadline for final radon barrier construction.

(7) Criterion 7 - At least one full year prior to any major site construction, a preoperational monitoring program must be conducted to provide complete baseline data on a milling site and its environs. Throughout the construction and operating phases of the mill, an operational monitoring program must be conducted to complete the following:

- (a) To measure or evaluate compliance with applicable standards and regulations;
- (b) To evaluate performance of control systems and procedures;
- (c) To evaluate environmental impacts of operation; and
- (d) To detect potential long-term effects.

The licensee shall establish a detection monitoring program needed for the department to set the site-specific groundwater protection standards in Criterion 5 of this section. For all monitoring under this paragraph, the licensee or applicant will propose for department approval as license conditions, which constituents are to be monitored on a site-specific basis. A detection monitoring program has two purposes. The initial purpose of the program is to detect leakage of hazardous constituents from the disposal area so that the need to set groundwater protection standards is monitored. If leakage is detected, the second purpose of the program is to generate data and information needed for the department to establish the standards under Criterion 5. The data and information must provide a sufficient basis to identify those hazardous constituents which require concentration limit standards and to enable the department to set the limits for those constituents and the compliance period. They may also need to provide the basis for adjustments to the point of compliance. For licenses in effect September 30, 1983, the detection monitoring programs must have been in place by October 1, 1984. For licenses issued after September 30, 1983, the detection monitoring programs must be in place when specified by the department in orders or license conditions. Once groundwater protection standards have been established pursuant to Criterion 5, the licensee shall establish and implement a compliance monitoring program. The purpose of the compliance monitoring program is to determine that the hazardous constituent concentrations in ground water continue to comply with the standards set by the department. In conjunction with a corrective action program, the licensee shall establish and implement a corrective action monitoring program. The purpose of the corrective action monitoring program is to demonstrate the effectiveness of the corrective actions. Any monitoring program required by this paragraph may be based on existing monitoring

programs to the extent the existing programs can meet the stated objective for the program.

(8) Criterion 8 - Milling operations shall be conducted so that all airborne effluent releases are reduced to as low as is reasonably achievable. The primary means of accomplishing this shall be by means of emission controls. Institutional controls, such as extending the site boundary and exclusion area, may be employed to ensure that offsite exposure limits are met, but only after all practicable measures have been taken to control emissions at the source. Notwithstanding the existence of individual dose standards, strict control of emissions is necessary to assure that population exposures are reduced to the maximum extent reasonably achievable and to avoid site contamination. The greatest potential sources of offsite radiation exposure (aside from radon exposure) are dusting from dry surfaces of the tailings disposal area not covered by tailings solution and emissions from yellowcake drying and packaging operations. During operations and prior to closure, radiation doses from radon emissions from surface impoundments shall be kept as low as is reasonably achievable. Checks shall be made and logged hourly of all parameters (e.g., differential pressure and scrubber water flow rate) which determine the efficiency of yellowcake stack emission control equipment operation. It shall be determined whether or not conditions are within a range prescribed to ensure that the equipment is operating consistently near peak efficiency; corrective action shall be taken when performance is outside of prescribed ranges. Effluent control devices shall be operative at all times during drying and packaging operations and whenever air is exhausting from the yellowcake stack.

Drying and packaging operations shall terminate when controls are inoperative. When checks indicate the equipment is not operating within the range prescribed for peak efficiency, actions shall be taken to restore parameters to the prescribed range. When this cannot be done without shutdown and repairs, drying and packaging operations shall cease as soon as practicable.

Operations may not be restarted after cessation due to off-normal performance until needed corrective actions have been identified and implemented. All such cessations, corrective actions, and restarts shall be reported to the department in writing, within ten days of the subsequent restart.

To control dusting from tailings, that portion not covered by standing liquids shall be wetted or chemically stabilized to prevent or minimize blowing and dusting to the maximum extent reasonably achievable. This requirement may be relaxed if tailings are effectively sheltered from wind, such as may be the case where they are disposed of below grade and the tailings surface is not exposed to wind. Consideration shall be given in planning tailings disposal programs to methods which would allow phased covering and reclamation of tailings impoundments since this will help in controlling particulate and radon emissions during operation. To control dustings from diffuse sources, such as tailings and ore pads where automatic controls do not apply, operators shall develop written operating procedures specifying the methods of control which will be utilized.

Milling operations producing or involving thorium by-product material shall be conducted in such a manner as to provide reasonable assurance that the annual dose equivalent does not

exceed twenty-five millirems to the whole body, seventy-five millirems to the thyroid, and twenty-five millirems to any other organ of any member of the public as a result of exposures to the planned discharge of radioactive materials, Radon-220 and its daughters excepted, to the general environment.

Uranium and thorium by-product materials shall be managed so as to conform to the applicable provisions of Title 40 of the Code of Federal Regulations, Part 440, Ore Mining and Dressing Point Source Category: Effluent Limitations Guidelines and New Source Performance Standards, Subpart C, Uranium, Radium, and Vanadium Ores Subcategory, as codified on January 1, 1983.

The licensee shall establish a detection monitoring program needed to establish the groundwater protection standards in subsection (5)(f) of this section. A detection monitoring program has two purposes. The initial purpose of the program is to detect leakage of hazardous constituents from the disposal area so that the need to set groundwater protection standards is monitored. If leakage is detected, the second purpose of the program is to generate data and information needed for the department to establish the standards under subsection (5)(f) of this section. The data and information must provide a sufficient basis to identify those hazardous constituents which require concentration limit standards and to enable the department to set the limits for those constituents and the compliance period. They may also need to provide the basis for adjustments to the point of compliance. For licenses in effect September 30, 1983, the detection monitoring programs must have been in place by October 1, 1984. For licenses issued after September 30, 1983, the detection monitoring programs must be in place when specified by the department in orders or license conditions. Once groundwater protection standards have been established pursuant to subsection (5)(f) of this section, the licensee shall establish and implement a compliance monitoring program. The purpose of the compliance monitoring program is to determine that the hazardous constituent concentrations in groundwater continue to comply with the standards set by the department. In conjunction with a corrective action program, the licensee shall establish and implement a corrective action monitoring program. The purpose of the corrective action monitoring program is to demonstrate the effectiveness of the corrective actions. Any monitoring program required by this paragraph may be based on existing monitoring programs to the extent the existing programs can meet the stated objective for the program.

Daily inspections of tailings or waste retention systems must be conducted by a qualified engineer or scientist and documented. The department must be immediately notified of any failure in a tailings or waste retention system which results in a release of tailings or waste into unrestricted areas, and/or of any unusual conditions (conditions not contemplated in the design of the retention system) which if not corrected could indicate the potential or lead to failure of the system and result in a release of tailings or waste into unrestricted areas.

(9) Criterion 9 - (a) Pursuant to chapter 70.121 RCW, and except as otherwise provided, financial surety arrangements for site reclamation and long-term surveillance and control which may consist of surety bonds, cash deposits, certificates of deposit, deposits of government securities, irrevocable letters or lines of

credit, or any combination of the above, or other arrangements approved by the department, milling operations shall be established for source material to ensure the protection of the public health and safety in the event of abandonment, default, or other inability of the licensee to meet the requirements of the act and these regulations.

(i) The amount of funds to be ensured by such surety arrangements shall be based on department-approved cost estimates.

(ii) Self-insurance, or any arrangement which essentially constitutes self-insurance (e.g., a contract with a state or federal agency), will not satisfy the surety requirement, since this provides no additional assurance other than that which already exists through license requirements.

(b) The arrangements required in (a) of this subsection shall be established prior to commencement of operations to assure that sufficient funds will be available to carry out decontamination and decommissioning of the facility.

(c) Amendments to licenses in effect on the effective date of this regulation may be issued, providing that the required surety arrangements are established within ninety days after the effective date of this subsection.

(d) For source material milling operations, the amount of funds to be ensured by such surety arrangements shall be based on department-approved cost estimates in an approved plan for (i) decontamination and decommissioning of mill buildings and the milling site to levels which would allow unrestricted use of these areas upon decommissioning, and (ii) the reclamation of tailings and/or waste disposal areas in accordance with the technical criteria delineated in this section. The licensee shall submit this plan in conjunction with an environmental report that addresses the expected environmental impacts of the milling operation, decommissioning and tailings reclamation, and evaluates alternatives for mitigating these impacts. In addition, the surety shall cover the payment of the charge for long-term surveillance and control required by the department. In establishing specific surety arrangements, the licensee's cost estimates shall take into account total costs that would be incurred if an independent contractor were hired to perform the decommissioning and reclamation work. In order to avoid unnecessary duplication and expense, the department may accept financial sureties that have been consolidated with financial or surety arrangements established to meet requirements of other federal or state agencies and/or local governing bodies for such decommissioning, decontamination, reclamation, and long-term site surveillance, provided such arrangements are considered adequate to satisfy these requirements and that portion of the surety which covers the decommissioning and reclamation of the mill, mill tailings site and associated areas, and the long-term funding charge is clearly identified and committed for use in accomplishing these activities. The licensee's surety mechanism will be reviewed annually by the department to assure that sufficient funds will be available for completion of the reclamation plan if the work had to be performed by an independent contractor. The amount of surety liability should be adjusted to recognize any increases or decreases resulting from inflation, changes in engineering plans, activities performed, and any other conditions affecting costs. Regardless of whether reclamation is phased through the life of the operation or

takes place at the end of operations, an appropriate portion of surety liability shall be retained until final compliance with the reclamation plan is determined. This will yield a surety that is at least sufficient at all times to cover the costs of decommissioning and reclamation of the areas that are expected to be disturbed before the next license renewal. The term of the surety mechanism must be open ended, unless it can be demonstrated that another arrangement would provide an equivalent level of assurance. This assurance could be provided with a surety instrument which is written for a specific period of time (e.g., five years), yet which must be automatically renewed unless the surety notifies the beneficiary (the state regulatory agency) and the principal (the licensee) some reasonable time (e.g., ninety days) prior to the renewal date of their intention not to renew. In such a situation, the surety requirement still exists and the licensee would be required to submit an acceptable replacement surety within a brief period of time to allow at least sixty days for the department to collect.

Proof of forfeiture must 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 would have to be clearly stated on any surety instrument which is not open-ended and must be agreed to by all parties.

Long-term care requirements. Pursuant to chapter 70.121 RCW, and as otherwise provided in WAC 246-235-080 (6)(d), a long-term care trust fund shall be established by source material milling licensees prior to the issuance of the license.

(10) Criterion 10 - (a) A minimum charge of two hundred fifty thousand dollars (1978 United States dollars) accrued as specified in WAC 246-235-080 (6)(d) to cover the costs of long-term surveillance shall be paid by each mill operator to the agency prior to the termination of a uranium or thorium mill license. If site surveillance or control requirements at a particular site are determined, on the basis of a site-specific evaluation, to be significantly greater than those specified in (a) of this subsection (e.g., if fencing is determined to be necessary), variance in funding requirements may be specified by the department. The total charge to cover the costs of long-term surveillance shall be such that, with an assumed one percent annual real interest rate, the collected funds will yield interest in an amount sufficient to cover the annual costs of site surveillance. The charge will be adjusted annually prior to actual payments to recognize inflation. The inflation rate to be used is that indicated by the change in the consumer price index published by the United States Department of Labor, Bureau of Labor Statistics. Contributions by a licensee to the long-term care trust fund pursuant to chapter 70.121 RCW shall be transferred to cover the costs assessed under this criterion.

(11) Criterion 11 - These criteria relating to ownership of tailings and their disposal sites become effective on November 8, 1981, and apply to all licenses terminated, issued, or renewed after that date.

Any uranium or thorium milling license or tailings license shall contain such terms and conditions as the United States Nuclear Regulatory Commission determines necessary to assure that

prior to termination of the license, the licensee will comply with ownership requirements of this criterion for sites used for tailings disposal.

Title to the by-product material licensed pursuant to WAC 246-252-030 and land, including any interests therein (other than land owned by the United States or by the state of Washington) which is used for the disposal of any such by-product material, or is essential to ensure the long-term stability of such disposal site, shall be transferred to the United States or the state of Washington. In view of the fact that physical isolation must be the primary means of long term control, and government land ownership is a desirable supplementary measure, ownership of certain severable subsurface interests (for example, mineral rights) may be determined to be unnecessary to protect the public health and safety and the environment. In any case, the applicant/operator must demonstrate a serious effort to obtain such subsurface rights, and must, in the event that certain rights cannot be obtained, provide notification in local public land records of the fact that the land is being used for the disposal of radioactive material and is subject to either a United States Nuclear Regulatory Commission general or specific license prohibiting the disruption and disturbance of the tailings. In some rare cases, such as may occur with deep burial where no ongoing site surveillance will be required, surface land ownership transfer requirements may be waived. For licenses issued before November 8, 1981, the United States Nuclear Regulatory Commission may take into account the status of the ownership of such land, and interests therein, and the ability of a licensee to transfer title and custody thereof to the United States or the state. If the United States Nuclear Regulatory Commission, subsequent to title transfer, determines that use of the surface or subsurface estates, or both, of the land transferred to the United States or to a state will not endanger the public health, safety, welfare or environment, the United States Nuclear Regulatory Commission may permit the use of the surface or subsurface estates, or both, of such land in a manner consistent with the provisions provided in these criteria. If the United States Nuclear Regulatory Commission permits such use of such land, it will provide the person who transferred such land with the right of first refusal with respect to such use of such land.

Material and land transferred to the United States or a state in accordance with this criterion must be transferred without cost to the United States or a state other than administrative and legal costs incurred in carrying out such transfer.

The provisions of this part, respecting transfer of title and custody to land and tailings and wastes, do not apply in the case of lands held in trust by the United States for any Indian tribe, or lands owned by such Indian tribe subject to a restriction against alienation imposed by the United States. In the case of such lands which are used for the disposal of byproduct material, as defined in this section, the licensee shall enter into arrangements with the United States Nuclear Regulatory Commission as may be appropriate to assure the long-term surveillance of such lands by the United States.

(12) Criterion 12 - The final disposition of tailings or wastes at milling sites should be such that ongoing active maintenance is not necessary to preserve isolation. As a minimum,

annual site inspections must be conducted by the government agency retaining ultimate custody of the site where tailings or wastes are stored, to confirm the integrity of the stabilized tailings or waste systems, and to determine the need, if any, for maintenance and/or monitoring. Results of the inspection must be reported to the United States Nuclear Regulatory Commission within sixty days following each inspection. The United States Nuclear Regulatory Commission may require more frequent site inspections if, on the basis of a site-specific evaluation, such a need appears necessary, due to the features of a particular tailings or waste disposal system.

(13) Criterion 13 - Secondary groundwater protection standards required by Criterion 5 of this section are concentration limits for individual hazardous constituents. The list of constituents found in Appendix A of this chapter, chapter 246-252 WAC, identifies the constituents for which standards must be set and complied with if the specific constituent is reasonably expected to be in or derived from the by-product material and has been detected in groundwater. For purposes of this criterion, the property of gross alpha activity will be treated as if it is a hazardous constituent. Thus, when setting standards under subsection (5)(j) of this section, the department will also set a limit for gross alpha activity.



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WAC 246-249-001

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Chapter 246-249 WAC

RADIOACTIVE WASTE—USE OF THE COMMERCIAL DISPOSAL SITE

WAC

246-249-001	Purpose and scope.
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246-249-080	Naturally occurring and accelerator produced radioactive material (NARM), excluding source material.
246-249-090	Transfer for disposal and manifests.

WAC 246-249-001 Purpose and scope. This chapter provides rules governing generators and brokers of low-level radioactive waste seeking to dispose of such waste at any commercial disposal facility in the state of Washington. These rules are in addition to applicable requirements of the United States Nuclear Regulatory Commission (NRC), the United States Department of Transportation (DOT), and other requirements of Title 246 WAC, the requirements of the department of ecology, Title 173 WAC, and conditions of the license issued to the disposal site operator(s).

[Statutory Authority: RCW 70.98.050 and 70.98.080. 91-16-109 (Order 187), § 246-249-001, filed 8/7/91, effective 9/7/91. Statutory Authority: RCW 43.70.040. 91-02-049 (Order 121), recodified as § 246-249-001, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080. 87-01-031 (Order 2450), § 402-62-010, filed 12/11/86.]

WAC 246-249-010 Definitions. As used in this chapter, the following definitions apply:

(1) "Low-level radioactive waste" has the same meaning as in the Low-Level Radioactive Waste Policy Amendments Act of 1985, Public Law 99-240, that is, radioactive waste not classified as high-level radioactive waste, spent nuclear fuel, or by-product material as defined in section 11e.(2) of the Atomic Energy Act.

(2) "Broker" means a person who performs one or more of the following functions for a low-level radioactive waste generator:

(a) Arranges for transportation of the low-level radioactive waste;

(b) Collects and/or consolidates shipments of such low-level radioactive waste;

(c) Processes such low-level radioactive waste in some manner; provided it shall not mean a carrier whose sole function is to transport such low-level radioactive waste.

(3) "Shipper" or "consignor" means the last licensee to possess the low-level radioactive waste prior to transportation to the low-level radioactive waste disposal site, normally the generator when no broker is involved; otherwise, the broker.

(4) "Generator" means the last person who puts radioactive material to practical use, and who then declares it to be no longer of use or value.

(5) "Motor vehicle" means any vehicle, truck, tractor, semi-trailer, or trailer (or any permitted combination of these), driven by mechanical power and used upon the highways to carry property.

(6) "Motor common carrier" means a person holding itself out to the general public to provide motor vehicle transportation for compensation over regular or irregular routes, or both.

(7) "Motor contract carrier" means a person other than a common carrier providing motor vehicle transportation of property for compensation under continuing agreements with one or more persons.

(8) "Motor private carrier" means a person, other than a motor carrier, transporting property by motor vehicle when the person is the owner, lessee, or bailee of the property being transported; and the property is being transported for sale, lease, rent, or bailment, or to further a commercial enterprise.

(9) "Motor carrier" means a motor common carrier and a motor contract carrier.

(10) "Shipment" means the total low-level radioactive waste material transported in one motor vehicle.

(11) "Transuranic waste" means material contaminated with elements that have an atomic number greater than 92.

[Statutory Authority: RCW 70.98.050 and 70.98.080. 91-16-109 (Order 187), § 246-249-010, filed 8/7/91, effective 9/7/91. Statutory Authority: RCW 43.70.040. 91-02-049 (Order 121), recodified as § 246-249-010, filed 12/27/90, effective 1/31/91. Statutory Authority: RCW 70.98.080. 87-01-031 (Order 2450), § 402-62-020, filed 12/11/86.]

WAC 246-249-020 Site use permit. (1) Each generator and each broker of radioactive waste shall possess a valid and unencumbered site use permit prior to the shipment of such waste to, or the disposal of such waste at any commercial disposal facility in the state of Washington and shall have complied with the permit requirements of the department of ecology.

(2) Suspension or revocation of permit.

(a) The failure of one or more packages in a shipment of waste to be in compliance with one or more of the requirements of the license issued to the commercial low-level radioactive waste disposal site operator, Title 246 WAC, the United States Nuclear Regulatory Commission, the United States Department of Transportation, or conditions of the disposal site operator's radioactive materials license may cause the suspension of the site use permit of the responsible generator and/or broker.

(b) The site use permit of a generator and/or broker may be suspended or revoked if any other licensed commercial