

Land disposal - facility requirements.

- (A) The land owner or custodial agency shall conduct an institutional control program to physically control access to the disposal site following transfer of control of the disposal site from the disposal site operator. The institutional control program shall also include, but not be limited to, conducting an environmental monitoring program at the disposal site, periodic surveillance, minor custodial care, and other requirements as determined by the department; and administration of funds to cover the costs for these activities. The period of institutional controls will be determined by the department, but institutional controls may not be relied upon for more than one hundred years following transfer of control of the disposal site to the owner.
- (B) The performance objectives for the general requirements of a land disposal facility are to ensure public health and safety. Land disposal facilities shall be sited, designed, operated, closed, and controlled after closure to provide reasonable assurance that the following performance objectives will be met.
- (1) Concentrations of radioactive material which may be released to the general environment in ground water, surface water, air, soil, plants, or animals must not result in an annual dose exceeding the equivalent of 0.25 millisievert (twenty-five millirem) to the whole body, 0.75 millisievert (seventy-five millirem) to the thyroid, or 0.25 millisievert (twenty-five millirem) to any other organ to any member of the public. Reasonable effort should be made to maintain releases of radioactivity in effluents to the general environment as low as is reasonably achievable.
 - (2) The design, operation and closure of the land disposal facility shall ensure protection of any individual inadvertently intruding into the disposal site and occupying the site or contacting the waste at any time after institutional controls over the disposal site are removed.
 - (3) Operations at the land disposal facility shall be conducted in compliance with the standards for radiation protection as set out in Chapter 3701:1-38 of the Administrative Code, except for those releases of radioactivity in effluents from the land disposal facility, which shall be governed by paragraph (B)(1) of this rule. Every reasonable effort should be made to maintain radiation exposures as low as is reasonably achievable.
 - (4) The disposal facility shall be sited, designed, used, operated, and closed to achieve long-term stability of the disposal site and to eliminate, to the extent practical, the need for ongoing active maintenance of the disposal site after closure so that only surveillance, monitoring, or minor custodial care are required.
 - (5) The licensee shall develop and implement security measures to protect against and to detect unauthorized access to radioactive material or safety and security systems from external as well as internal threats. The licensee shall perform periodic inspections to ensure that all radioactive material is accounted for and that safety and security systems are operating as designed. The licensee shall report any deficiency involving the radioactive material inventory or a safety and security system to the department.

- (6) The radioactive waste and its containers shall be protected from adverse environmental conditions including, but not limited to, temperature changes that could compromise the isolation of the waste from the biosphere.
 - (7) The licensee shall use standard engineering designs and procedural practices to maintain doses to people, and radionuclide releases to the environment, as low as reasonably achievable.
- (C) The operation of the disposal facility shall incorporate the following items.
- (1) Wastes designated as class A pursuant to paragraph (A) of rule 3701:1-54-10 of the Administrative Code shall be segregated from other wastes by placing in disposal units which are sufficiently separated from disposal units for the other waste classes so that any interaction between class A wastes and other wastes will not result in the failure to meet the performance objectives of this rule. This segregation is not necessary for class A wastes if they meet the stability requirements of in paragraph (B) of rule 3701:1-54-10 of the Administrative Code.
 - (2) Wastes designated as class C pursuant to paragraph (A) of rule 3701:1-54-10 of the Administrative Code, shall be disposed of with intruder barriers that are designed to protect against an inadvertent intrusion for at least five hundred years.
 - (3) Only waste classified as class A, B, or C pursuant to rule 3701:1-54-10 of the Administrative Code, shall be acceptable for land disposal. All waste shall be disposed of in accordance with requirements of paragraphs (C)(4) to (C)(11) of this rule.
 - (4) Waste shall be packaged in appropriate containers for disposal when applicable. Wastes shall be emplaced in a manner that maintains the package integrity during emplacement, minimizes void spaces between packages, and permits the void spaces to be filled.
 - (5) Void spaces between packages shall be filled as needed to reduce future subsidence within the fill.
 - (6) Waste shall be placed and covered in a manner that limits the radiation dose rate at the surface of the cover to levels that at a minimum will permit the licensee to comply with all provisions of rule 3701:1-38-13 of the Administrative Code at the time the license is transferred pursuant to paragraph (H) of rule 3701:1-54-07 of the Administrative Code.
 - (7) The boundaries and locations of each disposal unit shall be accurately located and mapped by means of a land survey. Disposal units shall be marked in such a way that the boundaries of each unit can be easily defined. Three permanent survey marker control points shall be established on the site to facilitate surveys.
 - (8) A buffer zone of land shall be maintained between any disposed waste and the disposal site boundary and beneath the disposed waste. The buffer zone shall be of adequate dimensions to carry out environmental monitoring

activities specified in paragraph (E) of rule 3701:1-54-09 of the Administrative Code and to take mitigative measures if needed.

- (9) Closure and stabilization measures as set forth in the approved site closure plan shall be carried out as each disposal unit is filled and covered.
 - (10) Active waste disposal operations shall not have an adverse effect on completed closure and stabilization measures.
 - (11) Only wastes containing or contaminated with radioactive material shall be disposed of at the disposal site.
 - (12) Proposals for disposal of waste that is not acceptable for land disposal because the waste form and disposal methods must be different and, in general, more stringent than those specified for class C waste, may be submitted to the department for approval.
- (D) Each licensee shall perform, or permit the department to perform, any tests the department deems appropriate or necessary for the administration of the regulations in rules 3701:1-54-06 to 3701:1-54-12 of the Administrative Code, including, but not limited to, tests of:
- (1) Wastes, including physical form;
 - (2) Facilities used for the receipt, storage, treatment, handling or disposal of wastes;
 - (3) Radiation detection and monitoring instruments;
 - (4) Other equipment and devices used in connection with the receipt, possession, handling, treatment, storage, or disposal of waste; or
 - (5) Environmental sampling or testing.
- (E) The licensee shall comply with the quality assurance requirements identified in rule 3701:1-54-04 of the Administrative Code.
- (F) The licensee shall make land disposal facilities available for inspections as follows:
- (1) Each licensee shall afford to the department at all reasonable times opportunity to inspect waste not yet disposed of, and the premises, equipment, operations, and facilities in which wastes are received, possessed, handled, treated, stored, or disposed.
 - (2) Each licensee shall make available to the department for inspection, upon reasonable notice, records kept by it pursuant to these regulations. Authorized representatives of the department may copy and take away copies of, for the department's use, any record required to be kept pursuant to this chapter.

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Certification

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