

3701:1-54-09

Land disposal - site selection, design, and environmental assessment.

- (A) The primary emphasis in disposal site suitability is given to isolation of wastes, a matter having long-term impacts, and to disposal site features that ensure that the long-term performance objectives are met, as opposed to short-term convenience or benefits.
 - (1) Suitable disposal site features shall include the following items.
 - (a) The disposal site shall be capable of being characterized, modeled, analyzed and monitored.
 - (b) Within the region where the facility will be located, a disposal site should be selected so that projected population growth and future developments are not likely to affect the ability of the disposal facility to meet the performance objectives of this rule.
 - (c) Areas shall be avoided having known natural resources that, if exploited, could result in failure to meet the performance objectives of this rule.
 - (d) The disposal site shall be generally well drained and free of areas of flooding or frequent ponding. The disposal site shall not be located in a one hundred year flood plain, coastal high-hazard area, or wetland, as defined in Federal Executive Order 11988, "Floodplain Management Guidelines." The disposal units shall be designed and constructed to be outside the five hundred year floodplain.
 - (e) Upstream drainage areas shall be minimized to decrease the amount of runoff that could erode or inundate waste disposal units.
 - (f) The disposal site shall provide sufficient depth to the water table that ground water intrusion, perennial or otherwise, into the waste will not occur.
 - (g) The hydrogeologic unit used for disposal shall not discharge groundwater to the surface within the disposal site. The soil or rock layers immediately beneath the facility, but above the water table shall have good vertical drainage or be engineered to have good drainage to prevent water from ponding around the base of the facility. The shallowest hydrogeologic unit beneath the facility shall not discharge perennially to the site.
 - (h) Areas shall be avoided where tectonic processes such as faulting, folding, seismic activity, or vulcanization may occur with such frequency and extent that it may significantly affect the ability of the disposal site to meet the performance objectives of this rule or may preclude defensible modeling and prediction of long-term impacts.
 - (i) Areas should be avoided where surface geologic processes such as mass wasting, erosion, slumping, landsliding, or weathering occur with such frequency and extent that it may significantly affect the ability of the disposal site to meet the performance objectives of this rule, or may preclude defensible modeling and prediction of long-term impacts.
 - (j) The disposal site must not be located where nearby facilities or activities

could affect the ability of the site to meet the performance objectives of this rule or mask the environmental monitoring program.

- (2) Additional exclusionary criteria include prohibiting a site from having any of the following features listed below.
- (a) The disposal units shall not be located within one kilometer (0.62 miles) of any of the following:
 - (i) Any area designated by the United States department of the interior as a national park or recreation area or national monument;
 - (ii) Any area designated by the United States department of the interior as a national wildlife refuge or a national wild and scenic river;
 - (iii) Any area designated by the forest service in the United States department of agriculture as a special interest area or a research natural area in the Wayne national forest;
 - (iv) Any area designated by the department of natural resources as a state park or state park purchase area under Chapter 1541. of the Revised Code;
 - (v) The Shawnee wilderness area as designated under section 1503.43 of the Revised Code, any area dedicated by the department of natural resources as a state nature preserve under Chapter 1517. of the Revised Code, any area established as a wildlife area under Chapter 1531. of the Revised Code and rules adopted under it, or a wild, scenic, or recreational river area established by the department under section 1517.14 of the Revised Code;
 - (vi) An area designated as an archeological or historic site in the national register of historic places under the "National Historic Preservation Act" 80 Stat. 915 to 919 (1966), 16 U.S.C. 470.
 - (vii) This section applies to land dedicated for any use specified in it on or before the effective date of section 3747.12 of the Revised Code (September 8, 1995).
 - (b) The disposal site shall not be located within the Lake Erie coastal area, as "coastal area" is defined in section 1506.01 of the Revised Code.
 - (c) The disposal site shall not be located where activities related to the development, construction, operation, closure, institutional control, or long-term care of the facility would result in the elimination at the site of endangered or threatened plant or animal species identified under federal law or in rules adopted under section 1518.01 or section 1531.25 of the Revised Code.
 - (d) The disposal site shall not contain any wetlands, as defined in 40 C.F.R. 230.3, as published in the July, 1, 2013 Code of Federal Regulations, or lakes unless they can be declassified.
 - (e) The disposal site shall not be located in any of the following:

- (i) An area likely to experience ground motions with a horizontal acceleration greater than twenty per cent of gravity in rock with a ninety per cent probability of not being exceeded in two hundred fifty years, as defined by currently available seismic risk evaluation procedures; or
 - (ii) An area with frequent earthquake activity.
 - (f) The disposal site shall not be located in an area of known or probable subsidence caused by an operating underground mine in existence at the time the disposal site is being characterized or by an abandoned underground mine.
 - (g) The disposal site shall not contain areas of steeply sloping topography or areas underlain by unconsolidated or bedrock geological units known to be susceptible to mass movement or land failure, such as landsliding or liquefaction, and where "steeply sloping topography" means a slope greater than twenty degrees.
 - (h) The disposal site shall not be located in areas of known or probable karst.
 - (i) The disposal site shall not be located over a sole source aquifer or within an endorsed wellhead protection area as defined by the state wellhead protection program established pursuant to Chapter 6109. and Chapter 6111. of the Revised Code.
 - (j) The disposal site shall not be located above an aquifer capable of sustaining a yield of one hundred gallons per minute of potable water for a twenty-four hour period to a water supply well located within one thousand feet of the disposal site.
 - (k) The use of shallow land burial, caverns, mines, or wells shall not be used as disposal techniques at the facility.
- (B) Provide an environmental assessment report required by Chapter 3701:1-40 of the Administrative Code as if that chapter also included source, and special nuclear material.
- (C) Provide a description of the public participation process as required by rule 3701:1-40-38 of the Administrative Code.
- (D) The licensee shall perform environmental monitoring as recorded below.
- (1) At the time a license application is submitted, the applicant shall have conducted a preoperational monitoring program to provide basic environmental data on the disposal site characteristics. The applicant shall obtain information about the ecology, meteorology, climate, hydrology, hydrogeology, geology including geophysics and geotechnical engineering, geochemistry, and seismology of the disposal site. For those characteristics that are subject to seasonal variation, data must cover at least a twelve month period.
 - (2) During the land disposal facility site construction and operation, the licensee shall maintain an environmental monitoring program. Measurements and observations must be made and recorded to provide data to evaluate the potential health and environmental impacts during both the construction and the operation of the facility and to enable the evaluation of long-term effects and

the need for mitigative measures. The monitoring system must be capable of providing early warning of releases of radionuclides from the disposal site before they leave the site boundary.

- (3) After the disposal site is closed, the licensee responsible for post-operational surveillance of the disposal site shall maintain a monitoring system based on the operating history and the closure and stabilization of the disposal site. The monitoring system must be capable of providing early warning of releases of radionuclides from the disposal site before they leave the site boundary.
 - (4) The licensee will provide continuous monitoring to be able to detect a breach of the disposal unit boundary.
 - (5) The licensee shall have a plan for taking corrective measures if the environmental monitoring program detects migration of radionuclides which would indicate that the performance objectives may not be met.
- (E) The director may, upon request or on his or her own initiative, authorize provisions other than those set forth in paragraphs (D) and (E) of this rule and paragraph (C) of rule 3701:1-54-08 of the Administrative Code for the segregation and disposal of waste and for the design and operation of a land disposal facility on a specific basis, if he or she finds reasonable assurance of compliance with the performance objectives of this chapter.

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Certification

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Date

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