

**SUBCHAPTER F: LICENSING OF ALTERNATIVE METHODS OF DISPOSAL OF  
RADIOACTIVE MATERIAL**

**§§336.501, 336.513  
Effective July 21, 2005**

**§336.501. Scope and General Provisions.**

(a) This subchapter establishes alternative criteria, terms, and conditions under which the commission may issue, amend, or renew a license for on-site disposal of radioactive material generated in the person's activities, not otherwise specifically authorized in this chapter.

(b) Except as provided by this subsection, the commission may not authorize new or additional facilities or the expansion of existing facilities for the on-site disposal of low-level radioactive waste, except to a person specifically authorized by law for low-level radioactive waste disposal. The commission may, on request or its own initiative, authorize, under this subchapter, on-site disposal of low-level radioactive waste on a specific basis at any facility at which low-level radioactive waste disposal operations began before September 1, 1989, if after evaluation of the specific characteristics of the waste, the disposal site, and the method of disposal, the commission finds that the continuation of the disposal activity will not constitute a significant risk to the public health and safety and to the environment.

(c) No person authorized to dispose of radioactive material under this subchapter may receive radioactive material for the purpose of disposal from other persons, sources, other facilities owned or operated by the applicant or licensee, or any other off-site locations.

(d) The commission may license the commercial disposal of naturally occurring radioactive material waste under Subchapter K of this chapter (relating to Commercial Disposal of Naturally Occurring Radioactive Material Waste from Public Water Systems).

Adopted June 29, 2005

Effective July 21, 2005

**§336.513. Technical Requirements for Active Disposal Sites.**

(a) Content of license application. An applicant for a license to authorize disposal of radioactive material shall submit the information required in Chapter 305 of this title (relating to Consolidated Permits) and the following:

- (1) an inventory of radionuclides in the wastes to be disposed of and the concentration and total activity of each radionuclide;
- (2) the estimated frequency of burials and estimated volume of waste in each burial;
- (3) a description of waste packaging;

(4) a description of nonradiological constituents in the waste (e.g., hazardous wastes, heavy metals, absorbents, and chelating agents);

(5) site characterization, including:

(A) the identification of all soil layers by classification according to American Society for Testing and Materials (ASTM) methods (e.g., sand, gravel, silt, and clay), soil engineering properties, and infiltration and drainage characteristics (e.g., coefficient of permeability according to ASTM D5084);

(B) stratigraphy (geological identification) of the near-surface subsoils;

(C) geologic hazards, including faulting, seismic activity, sink holes, solution depressions, and flooding, including identification of the 100-year floodplain;

(D) hydrological data, including porosity, distribution coefficient, hydraulic conductivity, soils dispersivity, and hydraulic gradient;

(E) groundwater, including use, depth to aquifer, fluctuation, discharge location, and saturated thickness;

(F) water wells in the vicinity, including location, use, depth, and water level;

(G) surface drainages and bodies of water in the vicinity, including locations and use;

(H) meteorological data;

(I) maps, including United States Geological Survey topographic quadrangle, hydrologic, and geologic;

(J) area resources (e.g., local land use, locations of nearby residences, etc.);

(K) site performance history, including erosion, flooding, subsidence, etc.; and

(L) a summary of any past disposals and any observed effects;

(6) a description of the proposed design and construction of the waste disposal trench or landfill;

(7) a description of the proposed design and construction of the final cover and of proposed closure procedures;

(8) information on the depth of waste burial and proposed procedures for emplacement of waste;

- (9) proposed inspection, maintenance, and stabilization procedures;
- (10) the applicant's radiological impact assessment consisting of modeling of radionuclide releases to site-specific critical exposure pathways and the projection of potential radiological doses to an individual on site and to a member of the public off site;
- (11) proposed radiation safety procedures during operations and closure;
- (12) a description of proposed radiological monitoring of the site;
- (13) the organizational structure of the applicant, a description of lines of authority and assignment of responsibilities, and technical qualifications of personnel responsible for radiation safety functions;
- (14) information on the applicant's proposed methods of restricting access to the site (e.g., fencing) and proposed permanent site markers;
- (15) proposed recordkeeping;
- (16) information on land ownership and any covenants or restrictions on land use;
- (17) the applicant's justification for the proposed disposal method;
- (18) an evaluation of other disposal alternatives, including disposal of the radioactive material at a licensed disposal facility; and
- (19) financial assurance for decommissioning as provided for in §336.619 of this title (relating to Financial Assurance for Decommissioning).

(b) Content of application for renewal of license.

- (1) An applicant for renewal of a license authorizing disposal of radioactive material shall submit information on:
  - (A) the current status of disposal operations, including the current status of use or closure of disposal trenches or landfills;
  - (B) as-built construction of disposal trenches or landfills and any final covers;
  - (C) volumes of radioactive material disposed of to date;
  - (D) the concentration and total activity of each radionuclide in the waste disposed of;
  - (E) the frequency of burials;

- (F) the results of any radiological monitoring performed at the site;
- (G) any changes in or additions to the procedures or information contained in previous applications;
- (H) financial assurance for decommissioning as provided for in §336.619 of this title; and
- (I) an evaluation of the alternative of disposing of the radioactive material at a licensed disposal facility.

(2) The executive director may request additional information, such as that required by subsection (a) of this section, if that information was not previously provided for the site or is not current.

(c) Performance objectives. The applicant's submittal shall include sufficient information to enable the executive director to assess the potential hazard to public health and safety and to determine whether the disposal site will have a significant impact on the environment. General criteria and performance objectives which the executive director shall apply in the evaluation of a proposed disposal site include the following:

(1) Radiation exposure and release of radioactive materials from a disposal site shall be maintained as low as is reasonably achievable. Reasonable assurance must be provided that the potential dose to an individual on or near the site will be within acceptable limits. The estimated committed effective dose equivalent resulting from a radiological assessment of a site will usually be the determining factor in the granting of authorization for a disposal site. If the projected dose to a member of the public exceeds 25 millirems per year, the executive director shall consider other factors in determining whether to grant authorization for the site, including, but not limited to, the use of institutional controls to restrict access for a specified period of time.

(2) The location and characteristics of a site shall preclude potential offsite migration or transport of radioactive materials or ready access to critical exposure pathways.

(3) The general topography of the proposed disposal site must be compatible with the proposed waste burial. As an example, surface features shall direct surface water drainage away from the disposal site. Wastes shall not be buried in locations which, once covered, would tend to collect surface water. The characteristics of the site shall minimize to the extent practicable the potential for erosion and contact of percolating or standing water with wastes.

(4) Water-bearing strata shall be a minimum of 10 feet below the depth at which waste will be buried.

(5) Waste shall be emplaced in a manner that minimizes the void spaces between packages and permits the void spaces to be filled.

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

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

(8) In general, a disposal site for which authorization is requested under this subchapter shall be located, designed, operated, and closed so that long-term isolation and custodial care for long-term stability would not be required beyond the time the licensee can reasonably be expected to occupy the site. If a proposed site does not meet this objective, requirements for long-term care shall be evaluated.

(9) The location of a disposal site shall be such that it is compatible with the uses of surrounding environs (both the applicant's and adjacent properties).

Adopted August 23, 2000

Effective September 14, 2000