

Land disposal - license.

- (A) No person shall receive, possess or dispose of radioactive waste received from another licensee at a land disposal facility unless authorized by a license issued by the department pursuant to this rule. Each person shall file an application with the department in accordance with the procedural requirements of Chapter 3701:1-40 of the Administrative Code as if those rules also included source, and special nuclear material, and obtain a license as provided in this rule before commencement of construction of a land disposal facility. Failure to comply with this requirement may be grounds for denial of a license.
- (B) In addition to the requirements set forth in paragraph (A) of this rule, an application to receive, possess, and dispose of wastes received from other licensees at a land disposal facility shall consist of the following general information, specific technical information, institutional information, and financial information.
- (1) The general information shall include:
- (a) Identity of the applicant;
 - (b) Qualifications of the applicant:
 - (i) The organizational structure of the applicant, both offsite and onsite, including a description of the lines of authority and assignments of responsibilities, whether in the form of administrative directives, contract provisions, or otherwise;
 - (ii) Technical qualifications, including minimum training and experience for the applicant and each member of the applicant's organization engaging in the proposed activities;
 - (iii) A description of the applicant's personnel training program; and
 - (iv) The plan to maintain an adequate complement of trained personnel to conduct waste receipt, handling, and disposal operations in a safe manner;
 - (c) A description of:
 - (i) The location of the proposed disposal site;
 - (ii) The general scope of the proposed activities;
 - (iii) The type and quantities of waste to be received, possessed and disposed;
 - (iv) Plans for the use of the land disposal facility for purposes other than disposal of wastes; and
 - (v) The proposed facility and equipment; and

- (d) Proposed schedules of construction, receipt of the waste, and first emplacement of waste at the proposed disposal facility.
- (2) Specific technical information shall include, but is not limited to, the following information needed to demonstrate that the performance objectives and the applicable technical requirements of rules 3701:1-54-06 to 3701:1-54-12 of the Administrative Code will be met:
- (a) Include 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, as well as projected population growth, population distribution, political subdivision, and land use of the disposal site and vicinity.
 - (b) Include a description of the design features of the land disposal facility and the disposal units. 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.
 - (c) Include a description of the principal design criteria and their relationship to the performance objectives.
 - (d) Include a description of the design basis natural events or phenomena and their relationship to the principal design criteria.
 - (e) Include a description of codes and standards that the applicant has applied to the design, and will apply to construction of the land disposal facilities.
 - (f) Include 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 rule 3701:1-54-08 of the Administrative Code.
 - (g) Include 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.

- (h) Include an identification of the known natural resources at the disposal site, the exploitation of which could result in inadvertent intrusion into the wastes after removal of active institutional control.
 - (i) Include 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.
 - (j) Submit a quality assurance program meeting the requirements in rule 3701:1-54-04 of the Administrative Code. Include a description of the quality assurance program for the determination of natural disposal site characteristics and for quality assurance during the design, construction, operation, and closure of the land disposal facility and the receipt, handling, and emplacement of waste. Audits and managerial controls must be included.
 - (k) Include a description of the radiation safety program for control and monitoring of (i) radioactive effluents to ensure compliance with the performance objectives in paragraph (B)(1) of rule 3701:1-54-08 of the Administrative Code, (ii) occupational radiation exposures to ensure compliance with the requirements of Chapter 3701:1-38 of the Administrative Code, and (iii) 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.
 - (l) Include 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.
 - (m) Include a description of the administrative procedures that the applicant will apply to control activities at the land disposal facility.
 - (n) Include a description of the facility's record keeping system as required in rule 3701:1-54-12 of the Administrative Code.
 - (o) Include a description of the security and safeguards for radioactive material as required in paragraph (B)(5) of rule 3701:1-54-08 of the Administrative Code.
- (3) The specific technical information shall also include the following analyses needed to demonstrate that the performance objectives of rule 3701:1-54-08 of the Administrative Code will be met.
- (a) Pathways analyzed in demonstrating protection of the general population from releases of radioactivity shall include air, soil, groundwater, surface water, plant uptake, and exhumation by burrowing animals. The analyses shall clearly identify and differentiate between the roles performed by the natural disposal site characteristics and design features in isolating and segregating the wastes. The analyses shall clearly demonstrate that there is reasonable assurance that the exposures to humans from the release of radioactivity will not exceed

the limits set forth in paragraph (B)(1) of rule 3701:1-54-08 of the Administrative Code.

- (b) Analyses of the protection of individuals from inadvertent intrusion shall include demonstration that there is reasonable assurance the waste classification and segregation requirements will be met and that adequate barriers to inadvertent intrusion will be provided.
 - (c) Analyses of the protection of individuals during operations shall include assessments of expected exposures due to routine operations and likely accidents during handling, storage, and disposal of waste. The analyses shall provide reasonable assurance that exposures will be controlled to meet the requirements of Chapter 3701:1-38 of the Administrative Code.
 - (d) Analyses of the long-term stability of the disposal site and the need for ongoing active maintenance after closure shall be based upon analyses of active natural processes such as erosion, mass wasting, slope failure, settlement of wastes and backfill, infiltration through covers over disposal areas and adjacent soils, and surface drainage of the disposal site. The analyses shall provide reasonable assurance that there will not be a need for ongoing active maintenance of the disposal site following closure.
- (4) The financial information shall be sufficient to demonstrate that the financial qualifications of the applicant are adequate to carry out the activities for which the license is sought and meet other financial assurance requirements of rule 3701:1-54-11 of the Administrative Code.
- (C) A license for the receipt, possession, and disposal of waste containing or contaminated with radioactive material will be issued by the department upon finding that:
- (1) The issuance of a license will not constitute an unreasonable risk to the health and safety of the public;
 - (2) The applicant is qualified by reason of training and experience to carry out the disposal operations requested in a manner that protects health and minimizes danger to life or property;
 - (3) The applicant's proposed disposal site, disposal design, land disposal facility operations, including equipment, facilities and procedures, disposal site closure, and post-closure institutional control are adequate to protect the public health and safety in that they provide reasonable assurance that the general population will be protected from releases of radioactivity as specified in the performance objectives in paragraph (B)(1) of rule 3701:1-54-08 of the Administrative Code;
 - (4) The applicant's proposed disposal site, disposal site design, land disposal facility operations, including equipment, facilities, and procedures, disposal site closure, and post-closure institutional control are adequate to protect the public health and safety in that they will provide reasonable assurance that individual inadvertent intruders are protected in accordance with the

performance objectives in paragraph (B)(2) of rule 3701:1-54-08 of the Administrative Code;

- (5) The applicant's proposed land disposal facility operations, including equipment, facilities, and procedures, are adequate to protect the public health and safety in that they will provide reasonable assurance that the standards for radiation protection set out in Chapter 3701:1-38 of the Administrative Code will be met;
 - (6) The applicant's proposed disposal site, disposal site design, land disposal facility operations, disposal site closure, post-closure institutional control are adequate to protect the public health and safety in that they will provide reasonable assurance that the long-term stability of the disposed waste and the disposal site will be achieved and will eliminate to the extent practicable the need for ongoing maintenance of the disposal site post-closure;
 - (7) The applicant's demonstration provides reasonable assurance that the applicable technical requirements of rules 3701:1-54-06 to 3701:1-54-12 of the Administrative Code have been met;
 - (8) The applicant's proposal for institutional control provides reasonable assurance that such control will be provided for the length of time found necessary to ensure the findings in paragraphs (C)(3) to (C)(6) of this rule and that the institutional control meets the requirements in paragraph (A) of rule 3701:1-54-08 of the Administrative Code;
 - (9) The financial or surety arrangements meet the requirements of rule 3701:1-54-11 of the Administrative Code; and
 - (10) Adequate security and safeguards exist to provide a reasonable assurance precluding theft or sabotage of the radioactive materials.
- (D) A license issued under this rule is subject to the requirements in Chapters 3701:1-40, 3701:1-44, and 3701:1-56 of the Administrative Code in addition to individual license conditions.
- (E) An application for renewal or for closure under paragraph (F) of this rule must be filed at least one hundred-eighty days prior to license expiration.
- (1) Applications for renewal of a license must be filed in accordance with paragraph (B) of this rule. Applications for closure must be filed in accordance with paragraph (F) of this rule. Information contained in previous applications, statements, or reports filed with the department under the license may be incorporated by reference if the references are clear and specific.
 - (2) If a licensee has properly filed an application for renewal of a license, the license will not expire until the department has taken final action on the application for renewal.
 - (3) The department will apply the criteria set forth in paragraph (C) of this rule to descriptions and changes not previously approved on a license amendment in order to determine if a license will be renewed.

- (F) Prior to final closure of the disposal site, or as otherwise directed by the department, the licensee shall submit an application to amend the license for closure.
- (1) The closure application shall include a final revision and specific details of the disposal site closure plan included as part of the license application submitted under paragraph (B)(2)(g) of this rule that includes each of the following:
- (a) Additional geologic, hydrologic, or other data pertinent to the long-term containment of emplaced wastes obtained during the operational period.
 - (b) The results of tests, experiments, or any other analyses relating to backfill of excavated areas, closure and sealing, waste migration and interaction with emplacement media, or any other tests, experiments, or analyses pertinent to the long-term containment of emplaced waste within the disposal site.
 - (c) Any proposed revision of plans for:
 - (i) Decontamination and/or dismantlement of surface facilities;
 - (ii) Backfilling of excavated areas; or
 - (iii) Stabilization of the disposal site for post-closure care.
 - (d) Any significant new information regarding the environmental impact of closure activities and long-term performance of the disposal site.
- (2) Upon review and consideration of an application to amend the license for closure submitted in accordance with paragraph (F)(1) of this rule, the department shall issue an amendment authorizing closure if there is reasonable assurance that the long-term performance objectives will be met.
- (G) The licensee shall observe, monitor, and carry out necessary maintenance and repairs at the disposal site until the site closure is complete and the license is transferred by the department in accordance with paragraph (H) of this rule. Responsibility for the disposal site must be maintained by the licensee for five years. A shorter or longer time period for post-closure observation and maintenance may be established and approved as part of the site closure plan, based on site-specific conditions.
- (H) Following closure and the period of post-closure observation and maintenance, the licensee may apply for an amendment to transfer the license to the disposal site owner. The license shall be transferred when the department finds:
- (1) That the closure of the disposal site has been made in conformance with the licensee's disposal site closure plan, as amended and approved as part of the license;

- (2) That reasonable assurance has been provided by the licensee that the performance objectives of rule 3701:1-54-08 of the Administrative Code are met;
 - (3) That any funds and necessary records for care will be transferred to the disposal site owner;
 - (4) That the post-closure monitoring program is operational for implementation by the disposal site owner.
- (I) Following any period of institutional control needed to meet the requirements found necessary under paragraph (C) of this rule, the licensee may apply for an amendment to terminate the license.
- (1) The application shall be filed in accordance with the provisions of Chapter 3701:1-40 of the Administrative Code.
 - (2) A license shall be terminated only when the department finds:
 - (a) That the institutional control requirements found necessary under paragraph (C)(8) of this rule have been met;
 - (b) That any additional requirements resulting from new information developed during the institutional control period have been met;
 - (c) Permanent monuments or markers warning against intrusion have been installed; and
 - (d) All records are transferred to the department.

Five Year Review (FYR) dates: 05/01/2015 and 05/01/2020

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Certification

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Date

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