

The Texas Natural Resource Conservation Commission (commission) adopts amendments to §§336.1, 336.2, 336.101, 336.102, 336.107, 336.201, 336.203, 336.209, 336.211, 336.213, 336.304, 336.331, 336.332, 336.334, 336.341, 336.348, 336.352, 336.356, 336.501, 336.502, 336.503, 336.512, 336.513, 336.701, 336.702, 336.802, 336.803, 336.804, 336.805, 336.806, 336.807; repeals of §§336.104, 336.108, 336.217, 336.357, 336.366, 336.514, 336.601-336.606, 336.613-336.629, 336.636; and new §§336.514, 336.515, 336.517, 336.519, 336.601, 336.603, 336.605, 336.607, 336.609, 336.611, 336.613, concerning Radioactive Substance Rules. Section 336.519 is adopted with changes to the proposed text as published in the April 24, 1998, issue of the *Texas Register* (23 TexReg 4016). The remaining sections are adopted without changes and will not be republished.

EXPLANATION OF ADOPTED RULE

The purpose of these rules is to remove commission rule language related to the source material licensing and by-product disposal jurisdiction transferred to the Texas Department of Health (TDH) by Senate Bill (SB) 1857, 75th Legislature, 1997; to incorporate revisions and additions which are needed to maintain compatibility with the rules of the United States Nuclear Regulatory Commission (NRC); and to continue with agency-wide regulatory reform efforts to simplify language and requirements.

Compatibility of the commission's rules with the federal program is necessary to preserve the status of Texas as an Agreement State under Title 10 Code of Federal Regulations Part 150 and the "Articles of Agreement between the United States Atomic Energy Commission and the State of Texas for Discontinuance of Certain Commission Regulatory Authority and Responsibility Within the State Pursuant to Section 274 of the Atomic Energy Act of 1954, as Amended."

In §336.519(a) a typographical error has been corrected. In the second sentence, in the phrase “30 days before to the expiration date,” the unnecessary word “to” has been deleted.

FINAL REGULATORY IMPACT ANALYSIS

The commission has reviewed the adopted rulemaking in light of the regulatory analysis requirements of Texas Government Code §2001.0225 and has determined that the rulemaking is not subject to §2001.0225 because it does not meet the definition of a “major environmental rule” as defined in the act, and it does not meet any of the four applicability requirements listed in §2001.0225(a).

Although this rule is to protect the environment and reduce the risk to human health from environmental exposure, this is not a major environmental rule because it does not adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state.

In addition, this rule does not exceed a standard set by federal law, exceed an express requirement of state law, exceed a requirement of a delegation agreement, or adopt a rule solely under the general powers of the agency. The rule adds federal requirements that are necessary to maintain compatibility with the rules of the Nuclear Regulatory Commission.

TAKINGS IMPACT ASSESSMENT

The commission has prepared a Takings Impact Assessment for these rules pursuant to Texas Government Code §2007.043. The following is a summary of that Assessment. The specific purpose

of the rules is to remove commission rule language related to the source material licensing and by-product disposal jurisdiction transferred to the TDH by SB 1857, 75th Legislature, 1997, to incorporate revisions and additions which are needed to maintain compatibility with the rules of the NRC, and to continue with agency-wide regulatory reform efforts to simplify language and requirements.

Compatibility of the commission's rules with the federal program is necessary to preserve the status of Texas as an Agreement State under Title 10 Code of Federal Regulations Part 150 and the "Articles of Agreement between the United States Atomic Energy Commission and the State of Texas for Discontinuance of Certain Commission Regulatory Authority and Responsibility Within the State Pursuant to the Atomic Energy Act §274 of 1954, as Amended." The rules will substantially advance this specific purpose by removing commission rule language related to the source material licensing and by-product disposal jurisdiction transferred to the TDH and by incorporating into commission rules the new federal requirements contained in "Resolution of Dual Regulation of Airborne Effluents of Radioactive Materials, Clean Air Act", 61 Fed. Reg. 65120, December 10, 1996, effective January 9, 1997 and "Radiological Criteria for License Termination", 62 Fed. Reg. 39058, July 21, 1997, effective August 20, 1997. Promulgation and enforcement of these rules will not burden private real property which is the subject of the rules because they primarily implement less stringent federal decommissioning requirements. Section 336.501 extends the deadline to apply for a license to decommission from January 1, 1999, to January 1, 2000. If these existing, unlicensed sites decommission before January 1, 2000, owners or operators will avoid license application and annual fees. For both licensed and unlicensed disposal sites, new alternatives for decommissioning without meeting the criteria for unrestricted use are offered in new sections §336.607 (relating to Criteria for

License Termination under Restricted Conditions) and §336.609 (relating to Alternate Criteria for License Termination). A site using one of these alternatives may save on decommissioning cost.

Also, the following exceptions to the application of Chapter 2007 of the Texas Government Code listed in Texas Government Code §2007.003(b) apply to these rules: Section 2007.003(b)(4)--an action that is reasonably taken to fulfill an obligation mandated by federal law.

COASTAL MANAGEMENT PROGRAM CONSISTENCY REVIEW

The commission has reviewed the adopted rulemaking and found that the rule is neither identified in Coastal Coordination Act Implementation Rules, 31 TAC §505.11, nor will it affect any action/authorization identified in Coastal Coordination Act Implementation Rules, 31 TAC §505.11. Therefore, the adoption is not subject to the Coastal Management Program.

ADOPTED NOTICE OF REVIEW

The commission adopts the review of Chapter 336 concerning Radioactive Substance Rules. The review was conducted in accordance with the General Appropriations Act, Article IX, §167, 75th Legislature, 1997.

The commission readopts the rules contained in 30 TAC Chapter 336, concerning Radioactive Substance Rules, as required by the General Appropriations Act, Article IX, §167. Section 167 requires state agencies to review and consider for readoption rules adopted under the Administrative Procedure Act. The reviews must include, at a minimum, an assessment that the reasons for the rules

continue to exist. The commission has reviewed the rules in Chapter 336 and determined that the reasons for adopting those rules continue to exist. The rules are necessary to implement Texas Health and Safety Code Chapter 401 (relating to Radioactive Materials and Other Sources of Radiation) and are needed to maintain compatibility with the rules of the NRC. Compatibility of the commission's rules with the federal program is necessary to preserve the status of Texas as an Agreement State under Title 10 Code of Federal Regulations Part 150 and the "Articles of Agreement between the United States Atomic Energy Commission and the State of Texas for Discontinuance of Certain Commission Regulatory Authority and Responsibility Within the State Pursuant to Section 274 of the Atomic Energy Act of 1954, as Amended." In addition, the rules are needed in the protection of human health and the environment from radioactive substances.

The comment period on the review closed May 26, 1997. No comments were received related to the rule review.

HEARING AND COMMENTERS

A public hearing was not held for this rulemaking. The comment period closed May 26, 1998. No comments were received.

STATUTORY AUTHORITY

These repeals, new sections, and amendments are adopted under the Texas Radiation Control Act (TRCA), Texas Health and Safety Code §§401.011, 401.051, and 401.412, and Texas Water Code §5.103, which give the commission the authority to adopt rules necessary to carry out its

responsibilities to regulate and license the disposal of radioactive substances. The readoption of the commission's rules is under Article IX, Section 167, General Appropriations Act, 75th Legislature.

SUBCHAPTER A : GENERAL PROVISIONS

§336.1 and §336.2

§336.1. Scope and General Provisions.

(a) Except as otherwise specifically provided, the rules in Chapter 336 of this title (relating to Radioactive Substance Rules) apply to all persons who dispose of radioactive substances except by-product material defined by §336.2(13)(B) of this title (relating to Definitions). However, nothing in these rules shall apply to any person to the extent that person is subject to regulation by the United States Nuclear Regulatory Commission (USNRC) or to radioactive material in the possession of federal agencies. The rules in this chapter do not apply to the disposal of radiation machines as defined in this subchapter or electronic devices which produce non-ionizing radiation.

(b) Regulation by the State of Texas of source material, byproduct material, and special nuclear material in quantities not sufficient to form a critical mass is subject to the provisions of the agreement between the State of Texas and the USNRC and to Part 150 of Title 10 Code of Federal Regulations (10 CFR Part 150) (relating to Exemptions and Continued Regulatory Authority in Agreement States and in Offshore Waters Under Section 274). (A copy of the Texas agreement, “Articles of Agreement between the United States Atomic Energy Commission and the State of Texas for Discontinuance of Certain Commission Regulatory Authority and Responsibility Within the State Pursuant to Section 274 of the Atomic Energy Act of 1954, as Amended” (Agreement), may be obtained from the UIC and Radioactive Waste Section, MC 131, Industrial and Hazardous Waste

Division, Texas Natural Resource Conservation Commission, P.O. Box 13087, Austin, Texas 78711-3087.) Under the Agreement and 10 CFR Part 150, the USNRC retains certain regulatory authorities over source material, byproduct material, and special nuclear material in the State of Texas. Persons in the State of Texas are not exempt from the regulatory requirements of the USNRC with respect to these retained authorities.

(c) - (e) (No change.)

§336.2. Definitions.

The following words and terms when used in this chapter shall have the following meanings, or as described in Chapter 3 of this title (relating to Definitions), unless the context clearly indicates otherwise. Additional definitions used only in a certain subchapter will be found in that subchapter.

(1) **Absorbed dose** - The energy imparted by ionizing radiation per unit mass of irradiated material. The units of absorbed dose are the rad and the gray (Gy).

(2) **Accelerator-produced radioactive material** - Any material made radioactive by exposing it to the radiation from a particle accelerator.

(3) **Activity** - The rate of disintegration (transformation) or decay of radioactive material. The units of activity are the curie (Ci) and the becquerel (Bq).

(4) **Adult** - An individual 18 or more years of age.

(5) **Agreement state** - Any state with which the United States Nuclear Regulatory Commission (USNRC) or the Atomic Energy Commission has entered into an effective agreement under the Atomic Energy Act of 1954, §274b, as amended through October 24, 1992 (Pub.L. 102-486).

(6) **Airborne radioactive material** - Any radioactive material dispersed in the air in the form of dusts, fumes, particulates, mists, vapors, or gases.

(7) **Airborne radioactivity area** - A room, enclosure, or area in which airborne radioactive materials, composed wholly or partly of licensed material, exist in concentrations:

(A) in excess of the derived air concentrations (DACs) specified in §336.359, Appendix B, Table I, Column 1, of this title (relating to Annual Limits on Intake (ALI) and Derived Air Concentrations (DAC) of Radionuclides for Occupational Exposure; Effluent Concentrations; Concentrations for Release to Sanitary Sewerage); or

(B) to a degree that an individual present in the area without respiratory protective equipment could exceed, during the hours an individual is present in a week, an intake of 0.6% of the ALI or 12 DAC-hours.

(8) **Annual limit on intake (ALI)** - The derived limit for the amount of radioactive material taken into the body of an adult worker by inhalation or ingestion in a year. ALI is the smaller value of intake of a given radionuclide in a year by the "reference man" that would result in a committed effective dose equivalent of 5 rems (0.05 sievert) or a committed dose equivalent of 50 rems (0.5 sievert) to any individual organ or tissue. ALI values for intake by ingestion and by inhalation of selected radionuclides are given in Table I, Columns 1 and 2, of §336.359, Appendix B, of this title.

(9) **As low as is reasonably achievable (ALARA)** - Making every reasonable effort to maintain exposures to radiation as far below the dose limits in this chapter as is practical, consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to the state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of ionizing radiation and licensed radioactive materials in the public interest.

(10) **Background radiation** - Radiation from cosmic sources; non-technologically enhanced naturally-occurring radioactive material, including radon (except as a decay product of source or special nuclear material) and global fallout as it exists in the environment from the testing of nuclear explosive devices or from past nuclear accidents such as Chernobyl that contribute to background radiation and are not under the control of the licensee. "Background radiation" does not include radiation from radioactive materials regulated by the commission, Texas Department of Health, USNRC, or an Agreement State.

(11) **Becquerel (Bq)** - See §336.4 of this title (relating to Units of Radioactivity).

(12) **Bioassay** - The determination of kinds, quantities, or concentrations, and, in some cases, the locations of radioactive material in the human body, whether by direct measurement (in vivo counting) or by analysis and evaluation of materials excreted or removed from the human body. For purposes of the rules in this chapter, "radiobioassay" is an equivalent term.

(13) **Byproduct material** -

(A) A radioactive material, other than special nuclear material, that is produced in or made radioactive by exposure to radiation incident to the process of producing or using special nuclear material; and

(B) The tailings or wastes produced by or resulting from the extraction or concentration of uranium or thorium from ore processed primarily for its source material content, including discrete surface wastes resulting from uranium solution extraction processes, and other tailings having similar radiological characteristics. Underground ore bodies depleted by these solution extraction processes do not constitute "byproduct material" within this definition.

(14) **CFR** - Code of Federal Regulations.

(15) **Class** - A classification scheme for inhaled material according to its rate of clearance from the pulmonary region of the lung. Materials are classified as D, W, or Y, which applies to a range of clearance half-times: for Class D (Days) of less than 10 days, for Class W (Weeks) from 10 to 100 days, and for Class Y (Years) of greater than 100 days. For purposes of the rules in this chapter, "lung class" and "inhalation class" are equivalent terms.

(16) **Collective dose** - The sum of the individual doses received in a given period of time by a specified population from exposure to a specified source of radiation.

(17) **Committed dose equivalent ($H_{T,50}$) (CDE)** - The dose equivalent to organs or tissues of reference (T) that will be received from an intake of radioactive material by an individual during the 50-year period following the intake.

(18) **Committed effective dose equivalent ($H_{E,50}$) (CEDE)** - The sum of the products of the weighting factors applicable to each of the body organs or tissues that are irradiated and the committed dose equivalent to each of these organs or tissues.

(19) **Critical group** - The group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances.

(20) **Curie (Ci)** - See §336.4 of this title.

(21) **Declared pregnant woman** - A woman who has voluntarily informed her employer, in writing, of her pregnancy and the estimated date of conception.

(22) **Decommission** - To remove (as a facility) safely from service and reduce residual radioactivity to a level that permits:

(A) release of the property for unrestricted use and termination of license; or

(B) release of the property under restricted conditions and termination of the license.

(23) **Deep-dose equivalent (H_d) (which applies to external whole- body exposure)** - The dose equivalent at a tissue depth of 1 centimeter (1,000 milligrams/square centimeter).

(24) **Depleted uranium** - The source material uranium in which the isotope uranium-235 is less than 0.711%, by weight, of the total uranium present. Depleted uranium does not include special nuclear material.

(25) **Derived air concentration (DAC)** - The concentration of a given radionuclide in air which, if breathed by the "reference man" for a working year of 2,000 hours under conditions of light work (inhalation rate of 1.2 cubic meters of air/hour), results in an intake of one ALI. DAC values are given in Table I, Column 3, of §336.359, Appendix B, of this title.

(26) **Derived air concentration-hour (DAC-hour)** - The product of the concentration of radioactive material in air (expressed as a fraction or multiple of the derived air concentration for each radionuclide) and the time of exposure to that radionuclide, in hours. A licensee may take 2,000 DAC-hours to represent one ALI, equivalent to a committed effective dose equivalent of 5 rems (0.05 sievert).

(27) **Distinguishable from background** - The detectable concentration of a radionuclide is statistically different from the background concentration of that radionuclide in the vicinity of the site or, in the case of structures, in similar materials using adequate measurement technology, survey, and statistical techniques.

(28) **Dose** - A generic term that means absorbed dose, dose equivalent, effective dose equivalent, committed dose equivalent, committed effective dose equivalent, total organ dose equivalent, or total effective dose equivalent. For purposes of the rules in this chapter, "radiation dose" is an equivalent term.

(29) **Dose equivalent (H_T)** - The product of the absorbed dose in tissue, quality factor, and all other necessary modifying factors at the location of interest. The units of dose equivalent are the rem and sievert (Sv).

(30) **Dose limits** - The permissible upper bounds of radiation doses established in accordance with the rules in this chapter. For purposes of the rules in this chapter, "limits" is an equivalent term.

(31) **Dosimetry processor** - An individual or organization that processes and evaluates individual monitoring devices in order to determine the radiation dose delivered to the monitoring devices.

(32) **Effective dose equivalent (H_E)** - The sum of the products of the dose equivalent to each organ or tissue (H_T) and the weighting factor (w_T) applicable to each of the body organs or tissues that are irradiated.

(33) **Embryo/fetus** - The developing human organism from conception until the time of birth.

(34) **Entrance or access point** - Any opening through which an individual or extremity of an individual could gain access to radiation areas or to licensed radioactive materials. This includes portals of sufficient size to permit human access, irrespective of their intended use.

(35) **Exposure** - Being exposed to ionizing radiation or to radioactive material.

(36) **Exposure rate** - The exposure per unit of time.

(37) **External dose** - That portion of the dose equivalent received from any source of radiation outside the body.

(38) **Extremity** - Hand, elbow, arm below the elbow, foot, knee, and leg below the knee. The arm above the elbow and the leg above the knee are considered part of the whole body.

(39) **Eye dose equivalent** - The external dose equivalent to the lens of the eye at a tissue depth of 0.3 centimeter (300 milligrams/square centimeter).

(40) **General license** - An authorization granted by an agency under its rules which is effective without the filing of an application with that agency or the issuance of a licensing document to the particular person.

(41) **Generally applicable environmental radiation standards** - Standards issued by the United States Environmental Protection Agency under the authority of the Atomic Energy Act of 1954, as amended through October 4, 1996, that impose limits on radiation exposures or levels, or concentrations or quantities of radioactive material, in the general environment outside the boundaries of locations under the control of persons possessing or using radioactive material.

(42) **Gray (Gy)** - See §336.3 of this title (relating to Units of Radiation Exposure and Dose).

(43) **High radiation area** - An area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of 0.1 rem (1 millisievert) in 1 hour at 30 centimeters from any source of radiation or from any surface that the radiation penetrates.

(44) **Individual** - Any human being.

(45) **Individual monitoring** - The assessment of:

(A) dose equivalent by the use of individual monitoring devices; or

(B) committed effective dose equivalent by bioassay or by determination of the time-weighted air concentrations to which an individual has been exposed, that is, DAC-hours; or

(C) dose equivalent by the use of survey data.

(46) **Individual monitoring devices** - Devices designed to be worn by a single individual for the assessment of dose equivalent. For purposes of the rules in this chapter, "individual monitoring equipment," "personnel dosimeter," and "dosimeter" are equivalent terms. Examples of individual monitoring devices are film badges, thermoluminescent dosimeters (TLDs), pocket ionization chambers, and personal ("lapel") air sampling devices.

(47) **Inhalation class** - See "Class."

(48) **Inspection** - An official examination and/or observation including, but not limited to, records, tests, surveys, and monitoring to determine compliance with the Texas Radiation Control Act (TRCA) and rules, orders, and license conditions of the commission.

(49) **Internal dose** - That portion of the dose equivalent received from radioactive material taken into the body.

(50) **Land disposal facility** - The land, buildings and structures, and equipment which are intended to be used for the disposal of radioactive wastes into the subsurface of the land. For purposes of this chapter, a "geologic repository" as defined in 10 CFR 60.2 as amended through October 27, 1988 (53 FedReg 43421) (relating to Definitions - high-level radioactive wastes in geologic repositories) is not considered a "land disposal facility."

(51) **License** - See "Specific license."

(52) **Licensed material** - Radioactive material received, possessed, used, processed, transferred, or disposed of under a license issued by the commission.

(53) **Licensee** - Any person who holds a license issued by the commission in accordance with the TRCA and the rules in this chapter. For purposes of the rules in this chapter, "radioactive material licensee" is an equivalent term. Unless stated otherwise, "licensee" as used in the rules of this chapter means the holder of a "specific license."

(54) **Licensing state** - Any state with rules equivalent to the Suggested State Regulations for Control of Radiation relating to, and having an effective program for, the regulatory control of naturally-occurring or accelerator-produced radioactive material (NARM) and which has been designated as such by the Conference of Radiation Control Program Directors, Inc.

(55) **Lost or missing licensed radioactive material** - Licensed material whose location is unknown. This definition includes material that has been shipped but has not reached its planned destination and whose location cannot be readily traced in the transportation system.

(56) **Low-level radioactive waste** - See "Radioactive waste."

(57) **Lung class** - See "Class."

(58) **Major amendment** -

(A) An amendment to a license issued under Subchapter F of Chapter 336 of this title (relating to Licensing of Alternative Methods of Disposal of Radioactive Material) which:

(i) authorizes a transfer of a license to another person;

(ii) authorizes enlargement of the disposal area beyond that authorized in the existing license or addition of disposal areas; or

(iii) authorizes a substantive change in the nature of the wastes to be disposed of or the method of disposal.

(B) An amendment to a license issued under Subchapter H of Chapter 336 of this title (relating to Licensing Requirements for Near-Surface Land Disposal of Radioactive Waste) which:

(i) authorizes a change in the type or concentration limits of wastes to be received;

(ii) authorizes receipt of wastes from other states not authorized in the existing license;

(iii) authorizes a change in the operator of the facility;

(iv) authorizes closure and the final closure plan for the disposal site;

or

(v) transfers the license to the custodial agency.

(C) Any other amendment for which the executive director has prepared a written environmental analysis or has determined that an environmental analysis is required.

(59) **Member of the public** - Any individual except when that individual is receiving an occupational dose.

(60) **Minor** - An individual less than 18 years of age.

(61) **Minor amendment** - Any amendment to a license issued under this chapter which is not defined as a major amendment in this section and does not have a significant impact or effect on the human environment.

(62) **Monitoring** - The measurement of radiation levels, radioactive material concentrations, surface area activities, or quantities of radioactive material and the use of the results of these measurements to evaluate potential exposures and doses. For purposes of the rules in this chapter, "radiation monitoring" and "radiation protection monitoring" are equivalent terms.

(63) **Naturally-occurring or accelerator-produced radioactive material (NARM)** - Any naturally-occurring or accelerator-produced radioactive material except source material or special nuclear material.

(64) **Naturally-occurring radioactive material (NORM) waste** - Solid, liquid, or gaseous material or combination of materials, excluding source material, special nuclear material, and byproduct material, that:

(A) in its natural physical state spontaneously emits radiation;

(B) is discarded or unwanted; and

(C) is not exempt under rules of the Texas Department of Health adopted under Health and Safety Code, §401.106.

(65) **Near-surface disposal facility** - A land disposal facility in which radioactive waste is disposed of in or within the upper 30 meters of the earth's surface.

(66) **Nonstochastic effect** - A health effect, the severity of which varies with the dose and for which a threshold is believed to exist. Radiation-induced cataract formation is an example of a nonstochastic effect. For purposes of the rules in this chapter, "deterministic effect" is an equivalent term.

(67) **Occupational dose** - The dose received by an individual in the course of employment in which the individual's assigned duties involve exposure to radiation and/or to radioactive material from licensed and unlicensed sources of radiation, whether in the possession of the licensee or other person. Occupational dose does not include dose received from background radiation, as a patient from medical practices, from voluntary participation in medical research programs, or as a member of the public.

(68) **Oil and gas naturally-occurring radioactive material (NORM) waste** -

Naturally-occurring radioactive material (NORM) waste that constitutes, is contained in, or has contaminated oil and gas waste as that term is defined in the Texas Natural Resources Code §91.1011.

(69) **Personnel monitoring equipment** - See "Individual monitoring devices."

(70) **Planned special exposure** - An infrequent exposure to radiation, separate from

and in addition to the annual occupational dose limits.

(71) **Principal activities** - Activities authorized by the license which are essential to

achieving the purpose(s) for which the license is issued or amended. Storage during which no licensed material is accessed for use or disposal and activities incidental to decontamination or decommissioning are not principal activities.

(72) **Public dose** - The dose received by a member of the public from exposure to

radiation and/or radioactive material released by a licensee, or to any other source of radiation under the control of the licensee. It does not include occupational dose or doses received from background radiation, as a patient from medical practices, or from voluntary participation in medical research programs.

(73) **Quality factor (Q)** - The modifying factor listed in Table I or II of §336.3 of this

title that is used to derive dose equivalent from absorbed dose.

(74) **Quarter (Calendar quarter)** - A period of time equal to one-fourth of the year observed by the licensee (approximately 13 consecutive weeks), providing that the beginning of the first quarter in a year coincides with the starting date of the year and that no day is omitted or duplicated in consecutive quarters.

(75) **Rad** - See §336.3 of this title.

(76) **Radiation** - Alpha particles, beta particles, gamma rays, x-rays, neutrons, high-speed electrons, high-speed protons, and other particles capable of producing ions. For purposes of the rules in this chapter, "ionizing radiation" is an equivalent term. Radiation, as used in this chapter, does not include non-ionizing radiation, such as radio- or microwaves or visible, infrared, or ultraviolet light.

(77) **Radiation and Perpetual Care Fund** - A fund established in the treasury of the State of Texas for the purposes set forth in the TRCA §401.305.

(78) **Radiation area** - Any area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of 0.005 rem (0.05 millisievert) in 1 hour at 30 centimeters from the source of radiation or from any surface that the radiation penetrates.

(79) **Radiation machine** - Any device capable of producing ionizing radiation except those devices with radioactive material as the only source of radiation.

(80) **Radioactive material** - A naturally-occurring or artificially-produced solid, liquid, or gas that emits radiation spontaneously.

(81) **Radioactive substance** - Includes byproduct material, radioactive material, radioactive waste, source material, special nuclear material, and NORM waste, excluding oil and gas NORM waste.

(82) **Radioactive waste** - Radioactive material other than byproduct material as defined in subparagraph (B) of the definition of “byproduct material” of this section, uranium ore, NORM waste, or oil and gas NORM waste, that is discarded or unwanted and is not exempt under rules of the Texas Department of Health adopted under Health and Safety Code, §401.106, or would require processing before it could have beneficial reuse. For purposes of the rules in this chapter, radioactive waste also excludes waste classified as high-level radioactive waste, transuranic waste, or spent nuclear fuel. For purposes of the rules in this chapter, radioactive waste means "low-level radioactive waste" as that term is used in 10 CFR Part 61 as amended through May 9, 1995 (60 FedReg 24552) (relating to Licensing Requirements for Land Disposal of Radioactive Waste). For purposes of the rules in this chapter, "radioactive waste" and "low-level radioactive waste" are equivalent terms. For purposes of the rules in this chapter, radioactive waste and low-level radioactive waste include accelerator-produced radioactive material.

(83) **Radioactivity** - The disintegration of unstable atomic nuclei with the emission of radiation.

(84) **Radiobioassay** - See "Bioassay."

(85) **Reference man** - A hypothetical aggregation of human physical and physiological characteristics determined by international consensus. These characteristics may be used by researchers and public health workers to standardize results of experiments and to relate biological insult to a common base. A description of "reference man" is contained in the International Commission on Radiological Protection report, ICR Publication 23, "Report of the Task Group on Reference Man."

(86) **Rem** - See §336.3 of this title.

(87) **Residual radioactivity** - Radioactivity in structures, materials, soils, groundwater, and other media at a site resulting from activities under the licensee's control. This includes radioactivity from all licensed and unlicensed sources used by the licensee, but excludes background radiation. It also includes radioactive materials remaining at the site as a result of routine or accidental releases of radioactive material at the site and previous burials at the site, even if those burials were made in accordance with the provisions of 10 CFR Part 20.

(88) **Respiratory protection equipment** - An apparatus, such as a respirator, used to reduce an individual's intake of airborne radioactive materials. For purposes of the rules in this chapter, "respiratory protective device" is an equivalent term.

(89) **Restricted area** - An area, access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials. Restricted area does not include areas used as residential quarters, but separate rooms in a residential building may be set apart as a restricted area.

(90) **Roentgen (R)** - See §336.3 of this title.

(91) **Sanitary sewerage** - A system of public sewers for carrying off waste water and refuse, but excluding sewage treatment facilities, septic tanks, and leach fields owned or operated by the licensee.

(92) **Sealed source** - Radioactive material that is permanently bonded or fixed in a capsule or matrix designed to prevent release and dispersal of the radioactive material under the most severe conditions that are likely to be encountered in normal use and handling.

(93) **Shallow-dose equivalent (H_s) (which applies to the external exposure of the skin or an extremity)** - The dose equivalent at a tissue depth of 0.007 centimeter (7 milligrams/square centimeter) averaged over an area of 1 square centimeter.

(94) **SI** - The abbreviation for the International System of Units.

(95) **Sievert (Sv)** - See §336.3 of this title.

(96) **Site boundary** - That line beyond which the land or property is not owned, leased, or otherwise controlled by the licensee.

(97) **Source material** -

(A) Uranium or thorium, or any combination thereof, in any physical or chemical form; or

(B) Ores that contain, by weight, 0.05% or more of uranium, thorium, or any combination thereof. Source material does not include special nuclear material.

(98) **Special form radioactive material** - Radioactive material which is either a single solid piece or is contained in a sealed capsule that can be opened only by destroying the capsule and which has at least one dimension not less than 5 millimeters and which satisfies the test requirements of 10 CFR 71.75 as amended through September 28, 1995 (60 FedReg 50264) (relating to Transportation of License Material).

(99) **Special nuclear material -**

(A) Plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235, and any other material that the USNRC, under the provisions of the Atomic Energy Act of 1954, §51, as amended through November 2, 1994 (Pub.L. 103-437), determines to be special nuclear material, but does not include source material; or

(B) Any material artificially enriched by any of the foregoing, but does not include source material.

(100) **Special nuclear material in quantities not sufficient to form a critical mass -**

uranium enriched in the isotope 235 in quantities not exceeding 350 grams of contained uranium-235; uranium-233 in quantities not exceeding 200 grams; plutonium in quantities not exceeding 200 grams; or any combination of these in accordance with the following formula: For each kind of special nuclear material, determine the ratio between the quantity of that special nuclear material and the quantity specified above for the same kind of special nuclear material. The sum of such ratios for all of the kinds of special nuclear material in combination shall not exceed 1. For example, the following quantities in combination would not exceed the limitation: (175 grams contained U-235/350 grams) + (50 grams U-233/200 grams) + (50 grams Pu/200 grams) = 1.

(101) **Specific license** - A licensing document issued by an agency upon an application filed under its rules. For purposes of the rules in this chapter, "radioactive material license" is an equivalent term. Unless stated otherwise, "license" as used in this chapter means a "specific license."

(102) **State** - The State of Texas.

(103) **Stochastic effect** - A health effect that occurs randomly and for which the probability of the effect occurring, rather than its severity, is assumed to be a linear function of dose without threshold. Hereditary effects and cancer incidence are examples of stochastic effects. For purposes of the rules in this chapter, "probabilistic effect" is an equivalent term.

(104) **Survey** - An evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, and/or presence of radioactive materials or other sources of radiation. When appropriate, this evaluation includes, but is not limited to, physical examination of the location of radioactive material and measurements or calculations of levels of radiation or concentrations or quantities of radioactive material present.

(105) **Termination** - As applied to a license, a release by the commission of the obligations and authorizations of the licensee under the terms of the license. It does not relieve a person of duties and responsibilities imposed by law.

(106) **Total effective dose equivalent (TEDE)** - The sum of the deep-dose equivalent for external exposures and the committed effective dose equivalent for internal exposures.

(107) **Total organ dose equivalent (TODE)** - The sum of the deep-dose equivalent and the committed dose equivalent to the organ receiving the highest dose as described in §336.346(a)(6) of this title (relating to Records of Individual Monitoring Results).

(108) **Type A quantity (for packaging)** - A quantity of radioactive material, the aggregate radioactivity of which does not exceed A_1 for special form radioactive material or A_2 for normal form radioactive material, where A_1 and A_2 are given in or may be determined by procedures in Appendix A to 10 CFR Part 71 as amended through September 28, 1995 (60 FedReg 50264) (relating to Packaging and Transportation of Radioactive Material).

(109) **Type B quantity (for packaging)** - A quantity of radioactive material greater than a Type A quantity.

(110) **Unrefined and unprocessed ore** - Ore in its natural form before any processing, such as grinding, roasting, beneficiating, or refining.

(111) **Unrestricted area** - Any area that is not a restricted area.

(112) **Very high radiation area** - An area, accessible to individuals, in which radiation levels could result in an individual receiving an absorbed dose in excess of 500 rads (5 grays) in 1 hour at 1 meter from a source of radiation or from any surface that the radiation penetrates. (At very high doses received at high dose rates, units of absorbed dose (rad and gray) are appropriate, rather than units of dose equivalent (rem and sievert).)

(113) **Violation** - An infringement of any provision of the TRCA or of any rule, order, or license condition of the commission issued under the TRCA or this chapter.

(114) **Week** - Seven consecutive days starting on Sunday.

(115) **Weighting factor (w_T) for an organ or tissue (T)** - The proportion of the risk of stochastic effects resulting from irradiation of that organ or tissue to the total risk of stochastic effects when the whole body is irradiated uniformly. For calculating the effective dose equivalent, the values of w_T are: Figure 1: 30 TAC §336.2(a)(115) (No change.)

(116) **Whole body** - For purposes of external exposure, head, trunk including male gonads, arms above the elbow, or legs above the knee.

(117) **Worker** - An individual engaged in activities under a license issued by the commission and controlled by a licensee, but does not include the licensee.

(118) **Working level (WL)** - Any combination of short-lived radon daughters in 1 liter of air that will result in the ultimate emission of 1.3×10^5 million electron volts (MeV) of potential alpha particle energy. The short-lived radon daughters are: for radon-222: polonium-218, lead-214, bismuth-214, and polonium-214; and for radon-220: polonium-216, lead-212, bismuth-212, and polonium-212.

(119) **Working level month (WLM)** - An exposure to 1 working level for 170 hours (2,000 working hours per year divided by 12 months per year is approximately equal to 170 hours per month).

(120) **Year** - The period of time beginning in January used to determine compliance with the provisions of the rules in this chapter. The licensee may change the starting date of the year used to determine compliance by the licensee provided that the change is made at the beginning of the year and that no day is omitted or duplicated in consecutive years.

SUBCHAPTER B : RADIOACTIVE SUBSTANCE FEES

§§336.101, 336.102, 336.107

STATUTORY AUTHORITY

These amendments are adopted under the Texas Radiation Control Act (TRCA), Texas Health and Safety Code §§401.011, 401.051, and 401.412, and Texas Water Code §5.103, which give the commission the authority to adopt rules necessary to carry out its responsibilities to regulate and license the disposal of radioactive substances.

§336.101. Purpose and Scope.

(a) (No change.)

(b) Except as otherwise specifically provided, this subchapter applies to any person who is:

(1) an applicant for or holder of a radioactive material license issued under this chapter; or

(2) - (3) (No change.)

§336.102. Definitions.

Terms used in this subchapter are defined in §336.2 of this title (relating to Definitions).

Additional terms used in this subchapter have the following definitions:

(1) **Emergency response** - The application of those capabilities necessary for the protection of the public and the environment from the effects of an accidental or uncontrolled release of radioactive materials, including the equipping, training, and periodic retraining of response personnel.

(2) **Fixed nuclear facility** -

(A) Any nuclear reactor(s) at a single site;

(B) Any facility designed or used for the assembly or disassembly of nuclear weapons; or

(C) Any other facility using special nuclear material for which emergency response activities, including training, are conducted to protect the public health and safety or the environment.

§336.107. Annual License Fee Due Date and Period Covered.

(a) Payment for annual fees set forth in §336.105(b) of this title (relating to Schedule of Fees for Subchapter F Licenses) shall be due in full each year on or before the last day of the expiration month of the license. As an example, if the license expires on May 31, 1999, annual fees are due on or before May 31 of each year.

(b) The period covered by each annual fee set forth in §336.105(b) of this title shall be the twelve months preceding the fee payment due date.

SUBCHAPTER B : RADIOACTIVE SUBSTANCE FEES

§336.104, §336.108

These repeals are adopted under the Texas Radiation Control Act, Texas Health and Safety Code §§401.011, 401.051, and 401.412, and Texas Water Code §5.103, which give the commission the authority to adopt rules necessary to carry out its responsibilities to regulate and license the disposal of radioactive substances.

§336.104. Schedule of Fees for Subchapter G Licenses.

§336.108. Proration of Annual Fee Adjustments.

**SUBCHAPTER C : ADDITIONAL APPLICATION, OPERATION, AND
LICENSE REQUIREMENTS**

§§336.201, 336.203, 336.209, 336.211, 336.213

STATUTORY AUTHORITY

These amendments are adopted under the Texas Radiation Control Act (TRCA), Texas Health and Safety Code §§401.011, 401.051, and 401.412, and Texas Water Code §5.103, which give the commission the authority to adopt rules necessary to carry out its responsibilities to regulate and license the disposal of radioactive substances.

§336.201. Additional Application Requirements.

(a) - (c) (No change.)

(d) Applicants for licenses other than renewals, after August 20, 1997, shall describe in the application how facility design and procedures for operation will minimize, to the extent practicable, contamination of the facility and the environment, facilitate eventual decommissioning, and minimize, to the extent practicable, the generation of radioactive waste.

§336.203. Environmental Analysis.

(a) When the executive director is considering an application under Subchapter H of Chapter 336 of this title (relating to Licensing Requirements for Near-Surface Land Disposal of Radioactive Waste) and determines that the licensed activity may have a significant effect on the human environment, the executive director shall prepare or have prepared a written analysis of the effect on the environment.

(b) An environmental analysis, if prepared, shall be included as part of the record of the commission's proceedings.

§336.209. Records and Reports.

(a) - (d) (No change.)

(e) The executive director may require the licensee to provide the commission with copies of all records prior to termination of the license.

(f) (No change.)

§336.211. Reporting Requirements for Incidents.

This section sets forth the incident reporting requirements for licenses issued under Subchapter F of Chapter 336 of this title (relating to Licensing of Alternative Methods of Disposal of Radioactive Material).

(1) Immediate report. Each licensee shall notify the executive director or staff as soon as possible but not later than 4 hours after the discovery of an event that prevents immediate protective actions necessary to avoid exposures to radiation or radioactive materials that could exceed regulatory limits or releases of radioactive materials that could exceed limits (e.g., events may include fires, explosions, toxic gas releases, etc.).

(2) Twenty-four hour report. Each licensee shall notify the executive director or staff within 24 hours after the discovery of any of the following events involving licensed material:

(A) an unplanned contamination event that:

(i) requires access to the contaminated area, by workers or the public, to be restricted for more than 24 hours by imposing additional radiological controls or by prohibiting entry into the area;

(ii) involves a quantity of material greater than five times the lowest annual limit on intake specified in §336.359, Appendix B, of this title (relating to Annual Limits on Intake (ALI) and Derived Air Concentrations (DAC) of Radionuclides for Occupational Exposure; Effluent Concentrations; Concentrations for Release to Sanitary Sewerage); and

(iii) has access to the area restricted for a reason other than to allow isotopes with a half-life of less than 24 hours to decay prior to decontamination;

(B) an event in which equipment is disabled or fails to function as designed when:

(i) the equipment is required by rule or license condition to prevent releases exceeding regulatory limits, to prevent exposures to radiation and radioactive materials exceeding regulatory limits, or to mitigate the consequences of an accident;

(ii) the equipment is required to be available and operable when it is disabled or fails to function; and

(iii) no redundant equipment is available and operable to perform the required safety function;

(C) an event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body; or

(D) an unplanned fire or explosion damaging any radioactive material or any device, container, or equipment containing radioactive material when:

(i) the quantity of material involved is greater than five times the lowest annual limit on intake specified in §336.359, Appendix B, of this title; and

(ii) the damage affects the integrity of the radioactive material or its container.

(3) Preparation and submission of reports. Reports made by licensees in response to the requirements of this section must be made as follows:

(A) Telephone report. Licensees shall make reports required by paragraphs (1) and (2) of this subsection by telephone, accompanied by a facsimile, to the executive director or staff.

To the extent that the information is available at the time of notification, the information provided in these reports must include:

(i) the caller's name and telephone number;

(ii) a description of the event, including date and time;

(iii) the exact location of the event;

(iv) the isotopes, quantities, and chemical and physical form of the radioactive material involved; and

(v) any personnel radiation exposure data available.

(B) Written report. Each licensee who makes a report required by paragraphs (1) and (2) of this subsection shall submit a written follow-up report to the executive director within 30 days of the initial report. Written reports prepared under other regulations may be submitted to fulfill this requirement if the reports contain all of the necessary information. These written reports must be sent to the executive director or staff. The reports must include the following:

(i) a description of the event, including the probable cause and the manufacturer and model number (if applicable) of any equipment that failed or malfunctioned;

(ii) the exact location of the event;

(iii) the isotopes, quantities, and chemical and physical form of the radioactive material involved;

(iv) date and time of the event;

(v) corrective actions taken or planned and the results of any evaluations or assessments; and

(vi) the extent of exposure of individuals to radiation or to radioactive materials without identification of individuals by name.

§336.213. Tests.

(a) Each licensee shall perform, upon instructions from the executive director, or shall permit the executive director to perform such tests as the executive director deems appropriate or necessary for the administration of the rules in this chapter, including, but not limited to, tests of:

(1) - (4) (No change.)

(b) (No change.)

**SUBCHAPTER C : ADDITIONAL APPLICATION, OPERATION, AND
LICENSE REQUIREMENTS**

§336.217

STATUTORY AUTHORITY

The repeal is adopted under the Texas Radiation Control Act, Texas Health and Safety Code §§401.011, 401.051, and 401.412, and Texas Water Code §5.103, which give the commission the authority to adopt rules necessary to carry out its responsibilities to regulate and license the disposal of radioactive substances.

§336.217. Expiration and Termination of Licenses and Decommissioning of Sites and Separate Buildings or Outdoor Areas.

SUBCHAPTER D : STANDARDS FOR PROTECTION AGAINST RADIATION

§§336.304, 336.331, 336.332, 336.334, 336.341, 336.348, 336.352, 336.356

STATUTORY AUTHORITY

These amendments are adopted under the Texas Radiation Control Act (TRCA), Texas Health and Safety Code §§401.011, 401.051, and 401.412, and Texas Water Code §5.103, which give the commission the authority to adopt rules necessary to carry out its responsibilities to regulate and license the disposal of radioactive substances.

§336.304. Radiation Protection Programs.

(a) - (c) (No change.)

(d) To implement the ALARA requirement of subsection (b) of this section, and notwithstanding the requirements in §336.313 of this title (relating to Dose Limits for Individual Members of the Public), a constraint on air emissions of radioactive material to the environment, excluding Radon-222 and its daughters, shall be established by licensees other than nuclear power reactors, such that the individual member of the public likely to receive the highest dose will not be expected to receive a total effective dose equivalent in excess of 10 mrem (0.1 mSv) per year from these emissions. If a licensee subject to this requirement exceeds this dose constraint, the licensee shall report the exceedence as provided in §336.352 of this title (relating to Reports of Exposures, Radiation

Levels, and Concentrations of Radioactive Material Exceeding the Limits) and promptly take appropriate corrective action to ensure against recurrence.

§336.331. General Requirements for Waste Disposal.

(a) Unless otherwise exempted, a licensee shall dispose of licensed material, as appropriate to the type of licensed material, only:

(1) by transfer to an authorized recipient as provided in §336.338 of this title (relating to Transfer for Disposal at Licensed Land Disposal Facility and Manifests) or in Subchapter H of this chapter (relating to Licensing Requirements for Near-Surface Land Disposal of Radioactive Waste);

(2) by transfer to a recipient authorized in another state by license issued by the United States Nuclear Regulatory Commission or an Agreement State or to the United States Department of Energy;

(3) by decay in storage;

(4) by release in effluents within the limits specified in §336.313 of this title (relating to Dose Limits for Individual Members of the Public);

(5) as authorized under §336.332 of this title (relating to Method of Obtaining Approval of Proposed Disposal Procedures), §336.333 of this title (relating to Disposal by Release into Sanitary Sewerage), or §336.337 of this title (relating to Disposal of Specific Wastes); or

(6) as specifically authorized by commission license issued under this chapter.

(b) (No change.)

(c) Processing or storage of waste containing licensed material from other persons at a disposal facility by a person licensed for disposal under Subchapter H of Chapter 336 of this title shall be regulated in accordance with the provisions of §336.11, Appendix A, of this title (relating to Memorandum of Understanding Between the Texas Department of Health and the Texas Natural Resource Conservation Commission Regarding Radiation Control Functions).

§336.332. Method of Obtaining Approval of Proposed Disposal Procedures.

(a) (No change.)

(b) A person holding a license issued under Chapter 336 of this title may apply for approval of proposed disposal procedures in accordance with subsection (a) of this section by requesting amendment of the license.

(c) A person applying for a license to be issued under Chapter 336 of this title may request approval of proposed disposal procedures in accordance with subsection (a) of this section as part of the license application.

(d) A person not subject to licensing under Subchapter H of Chapter 336 of this title may request approval of proposed disposal procedures in accordance with subsection (a) of this section either by filing an application for a license under Subchapter F of Chapter 336 of this title or by requesting approval without a license. In some cases, approval of a limited disposal which meets the standards of this subchapter may be granted by the executive director to a person without a license, as authorized by law. Requests for approval without a license must be reviewed by the executive director on a case-by-case basis.

(e) Notwithstanding the provisions of this section, the commission shall not approve any application for a license to receive radioactive waste from other persons for disposal on land not owned by the state or the federal government. The commission shall not issue a license to dispose of radioactive waste received from others except to a public entity specifically authorized by law for radioactive waste disposal.

§336.334. Disposal by Burial in Soil.

No licensee may dispose of radioactive material by burial in soil except as provided by §336.337 of this title (relating to Disposal of Specific Wastes) or by specific license authorization by the

commission under §336.332 of this title (relating to Method of Obtaining Approval of Proposed Disposal Procedures), Subchapter F of Chapter 336 of this title (relating to Licensing of Alternative Methods of Disposal of Radioactive Material), or Subchapter H of Chapter 336 of this title (relating to Licensing Requirements for Near-Surface Land Disposal of Radioactive Waste).

§336.341. General Requirements for Recordkeeping.

(a) Each licensee shall use the units curie, rad, and rem, including multiples and subdivisions, and shall clearly indicate the units of all quantities on records required by this subchapter.

Disintegrations per minute may be indicated on records of surveys performed to determine compliance with §336.605 of this title (relating to Surface Contamination Limits for Facilities, Equipment, and Materials) and §336.364, Appendix G, of this title (relating to Acceptable Surface Contamination Levels).

(b) - (c) (No change.)

§336.348. Records of Waste Disposal.

(a) Each licensee shall maintain records of the disposal of licensed materials made under §336.332 of this title (relating to Method of Obtaining Approval of Proposed Disposal Procedures), §336.333 of this title (relating to Disposal by Release into Sanitary Sewerage), §336.336 of this title (relating to Treatment or Disposal by Incineration), §336.337 of this title (relating to Disposal of

Specific Wastes); made by transfer to an authorized recipient under §336.331(a)(1) and (2) of this title (relating to General Requirements for Waste Disposal); or made under license authorization issued under this chapter. Each licensee shall also maintain records of the disposal of licensed materials by burial in soil, including burials authorized by Texas Department of Health rules before May 1977.

(b) (No change.)

§336.352. Reports of Exposures, Radiation Levels, and Concentrations of Radioactive Material Exceeding the Limits.

(a) Reportable events. In addition to the notification required by §336.351 of this title (relating to Notification of Incidents), each licensee shall submit a written report to the executive director within 30 days after learning of any of the following occurrences:

(1) (No change.)

(2) doses in excess of any of the following:

(A) - (E) (No change.)

(F) the ALARA constraints for air emissions established under §336.304(d); or

(3) - (4) (No change.)

(b) Contents of reports.

(1) Each report required by subsection (a) of this section shall describe the extent of exposure of individuals to radiation and radioactive material, including, as appropriate:

(A) - (C) (No change.)

(D) corrective steps taken or planned to ensure against a recurrence, including the schedule for achieving conformance with applicable limits, ALARA constraints, generally applicable environmental standards, and associated license conditions.

(2) Each report filed under subsection (a) of this section shall include for each occupationally overexposed individual: the name, social security number, and date of birth. With respect to the limit for the embryo/fetus in §336.312 of this title, the identifiers should be those of the declared pregnant woman. The report shall be prepared so that this information is stated in a separate and detachable part of the report.

§336.356. Soil and Vegetation Contamination Limits.

(a) No licensee may possess, receive, use, or transfer licensed radioactive material in such a manner as to cause contamination of soil or vegetation in unrestricted areas that causes a member of the public to receive a total effective dose equivalent in excess of 25 mrem/year from all pathways (excluding radium and its decay products) and to the extent that the contamination exceeds the background level by more than:

(1) for radium-226 or radium-228 in soil, the following limits, based on dry weight, averaged over any 100 square meters of area:

(A) 5 picocuries/gram (pCi/g), averaged over the first 15 centimeters of soil below the surface;

(B) 15 pCi/g, averaged over each 15-centimeter thick layer of soil below the first 15 centimeters below the surface; and

(2) for radium-226 or radium-228 in vegetation, 5 pCi/g, based on dry weight.

(b) Notwithstanding the limits set forth in subsection (a) of this section, each licensee shall make every reasonable effort to maintain any contamination of soil or vegetation as low as is reasonably achievable (ALARA).

(c) If contamination caused by the licensee is detected in an unrestricted area, the licensee shall decontaminate any unrestricted area which is contaminated above the limits specified in subsection (a) of this section.

SUBCHAPTER D : STANDARDS FOR PROTECTION AGAINST RADIATION

§336.357 and §336.366

STATUTORY AUTHORITY

These repeals are adopted under the Texas Radiation Control Act, Texas Health and Safety Code §§401.011, 401.051, and 401.412, and Texas Water Code §5.103, which give the commission the authority to adopt rules necessary to carry out its responsibilities to regulate and license the disposal of radioactive substances.

§336.357. Surface Contamination Limits for Facilities and Equipment.

§336.366. Appendix I. Soil and Vegetation Contamination Limits for Selected Radionuclides.

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

§§336.501-336.503, 336.512-336.515, 336.517, 336.519

STATUTORY AUTHORITY

These new and amended sections are adopted under the Texas Radiation Control Act (TRCA), Texas Health and Safety Code §§401.011, 401.051, and 401.412, and Texas Water Code §5.103, which give the commission the authority to adopt rules necessary to carry out its responsibilities to regulate and license the disposal of radioactive substances.

§336.501. Scope and General Provisions.

(a) This subchapter establishes the criteria, terms and conditions under which the commission may issue, amend or renew a license for on-site disposal of radioactive material or waste or to decommission an inactive disposal site. This subchapter does not apply to disposal of diffuse NORM waste having concentrations of radium-226 or radium-228 of less than 2,000 pCi/g.

(b) (No change.)

(c) Any person who owns, operates, controls, or possesses an inactive disposal site and who does not hold a current radioactive material license for the inactive disposal site shall apply for a license to decommission by January 1, 2000. Any decommissioning performed to fulfill this provision shall be

performed by an individual who is qualified and licensed to perform the activities, ensuring that all appropriate radiation protection standards for workers and the public are met, including the maintenance of records.

(1) If the site meets the requirements for unrestricted use of §336.603 of this title, (relating to Radiological Criteria for Unrestricted Use), the owner shall submit to the executive director the information required by §336.603(c) of this title before January 1, 2000. Once the executive director verifies that the criteria have been met, the executive director will certify in writing that the owner is in compliance with the regulations and will not require any further cleanup, unless there is new evidence that the decommissioning standards for unrestricted use were not met and that residual radioactivity remaining at the site could result in significant threat to public health and safety.

(2) If a site is decommissioned for unrestricted use under §336.603 of this title before January 1, 2000, a license is not required. If decommissioning is completed before January 1, 2000, proof of decommissioning must be submitted to the agency before January 1, 2000, or the owner shall submit an application for license by that date. Once the executive director verifies that the criteria have been met, the executive director will certify in writing that the owner is in compliance with the regulations and will not require any further cleanup, unless there is new evidence that the decommissioning standards for unrestricted use were not met and that residual radioactivity remaining at the site could result in significant threat to public health and safety.

(3) If a site does not meet the requirements for unrestricted use and the owner does not decommission before January 1, 2000, or if the owner plans to decommission under §336.607 of this title (relating to Criteria for License Termination under Restricted Conditions) or §336.609 of this title (relating to Alternate Criteria for License Termination), the owner shall apply for a license to decommission by January 1, 2000. The applicant shall provide the information required by this subchapter using a form provided by the agency.

(d) Any person whose possession of disposed radioactive material is authorized by the Texas Department of Health is exempt from the requirements of this subchapter. This subchapter does not apply to persons licensed or subject to licensing under Subchapter H of Chapter 336 of this title (relating to Licensing Requirements for Near-Surface Land Disposal of Radioactive Waste).

(e) (No change.)

§336.502. Definitions.

Terms used in this subchapter are defined in §336.2 of this title (relating to Definitions).

Additional terms used in this subchapter have the following definitions:

(1) **Inactive disposal site** - A site or facility that:

(A) contains radioactive material or waste disposed of below the surface, or soils or structures contaminated with radioactive material or waste; and

(B) no longer disposes or will dispose of, or accepts or will accept for the purpose of disposal, additional radioactive material or waste.

(2) **Funding plan** - a plan, equivalent to the decommissioning funding plan of 10 Code of Federal Regulations §30.35 (relating to Financial assurance and recordkeeping for decommissioning) and §40.36 (relating to Financial assurance and recordkeeping for decommissioning), submitted by the holder of an existing license before the development of a detailed decommissioning plan. The funding plan includes:

(A) an initial cost estimate for decommissioning;

(B) a description of the financial mechanism(s) utilized; and

(C) a certification by the licensee that a signed original of the financial assurance mechanism for decommissioning was submitted to the executive director.

(3) **On-site** - The same or geographically contiguous property that may be divided by public or private rights-of-way, provided the entrance and exit between the properties is at a cross-roads intersection, and access is by crossing, as opposed to going along, the right-of-way. Noncontiguous

properties owned by the same person but connected by a right-of-way that the property owner controls and to which the public does not have access, is also considered on-site property.

§336.503. Filing of Application.

(a) (No change.)

(b) An application for a license, or amendment of a license shall be accompanied by the appropriate fee as specified in §336.105 of this title (relating to Schedule of Fees for Subchapter F Licenses).

§336.512. Technical Requirements for Inactive Disposal Sites.

(a) Content of license application. An applicant for a license to authorize possession of disposed radioactive material and subsequent decommissioning of an inactive disposal site shall submit the following using the application form provided by the agency:

(1) - (3) (No change.)

(4) the technical qualifications and identity of personnel responsible for radiation safety functions at the site;

(5) (No change.)

(6) information on land ownership and any covenants on land use imposed by recorded title documents;

(7) a decommissioning plan that meets the standards in Subchapter G of this chapter (relating to Decommissioning Standards), including an evaluation of the alternative of disposing of the radioactive material at a licensed disposal facility;

(8) information regarding financial assurance for decommissioning as provided for in §336.514 of this title (relating to Financial Assurance for Decommissioning); and

(9) for license applications other than renewals, a description of how facility design and procedures for operation minimize, to the extent practicable, contamination of the facility and the environment, facilitate eventual decommissioning, and minimize, to the extent practicable, the generation of radioactive wastes.

(b) Content of application for renewal of license.

(1) An applicant for renewal of a license authorizing possession of disposed radioactive material in an inactive disposal site or to decommission an inactive disposal site shall submit information using the application form provided by the agency on:

(A) - (B) (No change.)

(C) the methods of restricting access to the site;[and]

(D) any changes in or additions to the procedures or information contained in previous applications;

(E) the technical qualifications and identity of personnel responsible for radiation safety functions at the site;

(F) a decommissioning plan that meets the standards in Subchapter G of this chapter, if not previously submitted, including an evaluation of the alternative of disposing of the radioactive material at a licensed disposal facility; and

(G) financial assurance for decommissioning as provided for in §336.514 of this title (relating to Financial Assurance for Decommissioning).

(2) The executive director may request additional information, such as that required by subsection (a) of this section, if this 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. The executive director shall evaluate existing inactive disposal sites on a case-by-case basis and may consider the following general criteria and performance objectives in making the evaluation:

(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) - (9) (No change.)

§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 following:

(1) - (18) (No change.)

(19) the applicant's justification for the proposed disposal method;

(20) an evaluation of other disposal alternatives, including disposal of the radioactive material at a licensed disposal facility; and

(21) financial assurance for decommissioning as provided for in §336.514 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) - (E) (No change.)

(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 §336.514 of this title (relating to Financial Assurance for Decommissioning); 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) - (9) (No change.)

§336.514. Financial Assurance for Decommissioning.

(a) A financial assurance mechanism or combination of mechanisms in accordance with Subchapter I of this chapter (relating to Financial Assurance) is required for all entities currently licensed or proposed to be licensed. Federal, State or local government licensees may submit a statement of intent containing a cost estimate for decommissioning based upon the appropriate criteria listed below and indicating that funds for decommissioning will be obtained when necessary.

(b) Applicants for a new license to decommission an inactive disposal site shall submit with the application a signed statement regarding how the applicant will provide financial assurance for decommissioning using one or more of the mechanisms specified in Subchapter I of this chapter. The amount of financial assurance shall be based upon the detailed cost estimate included in the decommissioning plan submitted with the application. The financial assurance for decommissioning shall be provided at least 30 days prior to license issuance and be effective upon license issuance.

(c) Holders of licenses issued before January 1, 1998 shall submit a funding plan before January 1, 1998. Each funding plan must contain:

(1) a cost estimate for decommissioning;

(A) Each holder of a license authorizing the disposal of unsealed radioactive material with a half-life greater than 120 days and in quantities exceeding 10^5 times the applicable quantities set forth in §336.521, Appendix A, of this title (relating to Radionuclide Quantities for Use in Determining Financial Assurance for Decommissioning) or when a combination of isotopes is involved if R divided by 10^5 is greater than 1 (unity rule), where R is defined as the sum of the ratios of the quantity of each isotope to the applicable value in §336.521, Appendix A of this title, shall submit a certification of financial assurance for decommissioning in an amount at least equal to \$750,000, in accordance with the criteria set forth in this subchapter and Subchapter I of this chapter; or

(B) Each holder of a license authorizing disposal of radioactive material with a half-life greater than 120 days shall provide certification of financial assurance for decommissioning based on the quantity of material as follows:

(i) \$750,000--greater than 10^4 but less than or equal to 10^5 times the applicable quantities in §336.521, Appendix A, of this title, in unsealed form. (For a combination of isotopes, if R , as defined in subsection (c)(1)(A), divided by 10^4 is greater than 1 but R divided by 10^5 is less than or equal to 1.); or

(ii) \$150,000--greater than 10^3 but less than or equal to 10^4 times the applicable quantities in §336.521, Appendix A of this title in unsealed form. (For a combination of

isotopes, if R, as defined in subsection (c)(1)(A) of this section, divided by 10^3 is greater than 1 but R divided by 10^4 is less than or equal to 1.).

(C) Notwithstanding the requirements of subparagraph (A) and (B) of this paragraph,

(i) each holder for a license authorizing the disposal of more than 100 millicuries of source material in a readily dispersible form shall submit certification that financial assurance has been provided in the amount of \$750,000.

(ii) each holder for a license authorizing the disposal of quantities of source material greater than 10 millicuries but less than or equal to 100 millicuries in a readily dispersible form shall submit certification that financial assurance has been provided in the amount of \$150,000;

(2) a description of the financial assurance mechanism of assuring funds for decommissioning as specified in Subchapter I of this chapter, including means for adjusting cost estimates and associated funding levels annually over the life of the facility; and

(3) a certification by the licensee that a signed original of the financial assurance mechanism for decommissioning, in accordance with criteria set forth in this section and Subchapter I

of this chapter, has been submitted to the executive director in the amount specified in paragraph (1) of this subsection.

(d) Holders of existing licenses for inactive disposal sites shall, as part of the license renewal process, submit a signed statement adjusting the amount of financial assurance based upon the detailed cost estimate included in the decommissioning plan submitted with the renewal application. The adjusted amount of financial assurance for decommissioning shall be effective upon license renewal.

(e) Holders of licenses for active disposal sites shall submit a signed statement adjusting the amount of financial assurance based upon the detailed cost estimate included in the decommissioning plan submitted no later than the date specified in §336.519(e) of this title (relating to Expiration and Termination of Licenses).

§336.515. Recordkeeping for Decommissioning.

Each person licensed under this subchapter shall keep records of information important to the safe and effective decommissioning of the facility in an identified location until the license is terminated by the commission. If records of relevant information are kept for other purposes, reference to these records and their locations may be used. Information important to decommissioning consists of:

(1) records of spills or other unusual occurrences involving the spread of contamination in and around the disposal facility, equipment, or site. These records may be limited to instances when

contamination remains after any cleanup procedures or when there is reasonable likelihood that contaminants may have spread to inaccessible areas, as in the case of possible seepage into porous materials such as concrete. These records must include any known information on identification of involved nuclides, quantities, forms, and concentrations.

(2) as-built drawings and modifications of structures and equipment in restricted areas where radioactive materials are disposed of and of locations of possible inaccessible contamination (e.g., buried pipes) that may be subject to contamination. If required drawings are referenced, each relevant document need not be indexed individually. If drawings are not available, the licensee shall substitute appropriate records of available information concerning these areas and locations.

(3) except for areas containing only radioactive materials having half-lives of less than 65 days, a list contained in a single document and updated every two years of the following:

(A) all areas designated as restricted areas, as defined in §336.2 of this title (relating to Definitions), and all areas formerly designated as restricted areas under rules in effect before January 1, 1994;

(B) all areas outside of restricted areas that require documentation under paragraph (1) of this subsection;

(C) all areas outside of restricted areas where current and previous wastes have been buried as documented under §336.348 of this title (relating to Records of Waste Disposal); and

(D) all areas outside of restricted areas which contain material such that, if the license expired, the licensee must be required to either decontaminate the area to unrestricted release levels or apply for approval for disposal under §336.332 of this title (relating to Method of Obtaining Approval of Proposed Disposal Procedures).

(4) records of the cost estimate performed for the funding plan or of the amount certified for decommissioning, and records of the financial assurance mechanism used for assuring funds.

§336.517. Financial Assurance for Control and Maintenance.

(a) An applicant or licensee required to demonstrate financial assurance for control and maintenance of a site shall maintain financial assurance for control and maintenance upon license issuance and during the decommissioning period. The applicant or licensee shall provide sufficient financial assurance to enable an independent third party, including a governmental custodian of a site, to assume and carry out responsibilities for any necessary control and maintenance of the site. The financial assurance mechanism(s) for control and maintenance shall comply with Subchapter I of this chapter (relating to Financial Assurance) including increasing annually the financial assurance amount

for inflation or whenever modifications to the control and maintenance activities or changes to the amount being demonstrated causes the amounts for control and maintenance to increase.

(b) Prior to license termination, the licensee shall deposit a sum of cash acceptable to the executive director into the Texas Treasury Safekeeping Control and Maintenance account to assume and carry out responsibilities for any necessary surveillance, monitoring, control, maintenance and other care of the decommissioned disposal site on a continual basis during the institutional control period. Upon receipt of the deposit, the executive director shall release the existing financial assurance mechanism(s) for control and maintenance. If a deposit is not made into the Control and Maintenance account, the executive director shall draw on the existing financial assurance mechanism(s) and deposit the cash into the Texas Safekeeping Treasury Control and Maintenance account.

§336.519. Expiration and Termination of Licenses.

(a) Each license expires at the end of the day on the expiration date stated in the license unless the licensee has filed an application for renewal not less than 30 days before the expiration date stated in the existing license. If an application for renewal in proper form has been filed at least 30 days before the expiration date stated in the existing license, the existing license shall not expire until the application has been finally determined by the commission. For the purposes of this section, “proper form” shall mean that the application includes the information required by §336.512 of this title (relating to Technical Requirements for Inactive Disposal Sites) or §336.513 of this title (relating to Technical Requirements for Active Disposal Sites). The existing license expires at the end of the day on which

the commission makes a final determination to deny the renewal application or, if the determination states an expiration date, the expiration date stated in the determination.

(b) Each license revoked by the commission expires at the end of the day on the date of the commission's final determination to revoke the license, or on the expiration date stated in the determination, or as otherwise provided by commission order.

(c) Each license continues in effect, beyond the expiration date if necessary, with respect to possession of source material, byproduct material, or other radioactive material until the commission notifies the licensee in writing that the license is terminated. During this time, the licensee shall:

(1) limit actions involving source material, byproduct material, or other radioactive material to those related to decommissioning; and

(2) continue to control entry to restricted areas until they are suitable for release in accordance with commission requirements.

(d) Within 60 days of the occurrence of any of the following, each licensee of an active disposal site shall provide written notification to the executive director:

(1) The license has expired under subsection (a) or (b) of this section; or

(2) The licensee has decided to permanently cease principal activities at the entire site or in any separate building or outdoor area that contains residual radioactivity such that the building or outdoor area is unsuitable for unrestricted release in accordance with commission requirements; or

(3) No principal activities under the license have been conducted for a period of 24 months; or

(4) No principal activities have been conducted for a period of 24 months in any separate building or outdoor area that contains residual radioactivity such that the building or outdoor area is unsuitable for release in accordance with commission requirements.

(e) The licensee of an active disposal site shall either:

(1) within 60 days of the occurrence for which notification is required by subsection (d) of this section, begin decommissioning its site or any separate building or outdoor area that contains residual radioactivity, according to an approved decommissioning plan, so that the building or outdoor area is suitable for release in accordance with commission requirements; or

(2) if no decommissioning plan has been submitted, submit a decommissioning plan to the executive director, including a signed statement adjusting the amount of financial assurance based upon the detailed cost estimate included in the decommissioning plan, within 12 months of the

notification required by subsection (d) of this section and request an amendment of the license to incorporate the plan into the license; and

(3) begin decommissioning within 60 days of the approval of that plan by the commission.

(f) The licensee of an inactive disposal site licensed under §336.501(c) of this title (relating to Scope and General Provisions), shall provide notice of and begin decommissioning within 90 days of license renewal. The owner or operator of an unlicensed inactive disposal site must apply for a license to decommission the site and begin decommissioning with 90 days of license approval.

(g) All licensees shall follow a commission-approved closure plan for decontamination, decommissioning, restoration, and reclamation of buildings and the site.

(1) Coincident with the notification required by subsections (d) or (f) of this section, the licensee shall continue to maintain in effect all decommissioning financial assurance until the license is terminated by the commission.

(2) The amount of the financial assurance must be increased, or may be decreased, as appropriate, to cover the detailed cost estimate for decommissioning established under §336.613(f)(5) of this title (relating to Additional Requirements).

(3) Any licensee who has not provided financial assurance to cover the detailed cost estimate submitted with the decommissioning plan shall do so on or before January 1, 1998.

(4) Following approval of the decommissioning plan, with the approval of the executive director, a licensee may reduce the amount of the financial assurance as decommissioning proceeds and radiological contamination is reduced at the site.

(h) The executive director may grant in writing a request to extend the time periods established in subsections (d), (e) or (f) of this section, or to delay or postpone the decommissioning process, if the executive director determines that this relief is not detrimental to the public health and safety and is otherwise in the public interest. The request must be submitted in writing no later than 30 days before notification under subsection (d) or (f) of this section. The schedule for decommissioning set forth in subsection (e) or (f) of this section may not commence until the executive director has made a determination on the request.

(i) Licenses, including expired licenses, will be terminated by the commission by written notice to the licensee when the executive director determines that:

(1) Source material, byproduct material, and other radioactive material has been properly disposed;

(2) Reasonable effort has been made to eliminate residual radioactive contamination, if present;

(3) The site is suitable for release.

(A) A radiation survey has been performed which demonstrates that the premises are suitable for release in accordance with commission requirements; or

(B) Other information submitted by the licensee is sufficient to demonstrate that the premises are suitable for release in accordance with commission requirements;

(4) The licensee has paid any outstanding fees required by Subchapter B of Chapter 336 of this title (relating to Radioactive Substance Fees) and has resolved any outstanding notice(s) of violation issued to the licensee; and

(5) The licensee has complied with all other applicable decommissioning criteria required by Subchapter G of this chapter (relating to Decommissioning Standards).

(j) A licensee may request that a subsite or a portion of a licensed area be released for unrestricted use before full license termination as long as release of the area of concern will not adversely impact the remaining unaffected areas and will not be recontaminated by ongoing authorized activities. When the licensee is confident that the area of concern will be acceptable to the state for

release for unrestricted use, a written request for release for unrestricted use and agency confirmation of close-out work performed must be submitted to the executive director. The request should include a comprehensive report, accompanied by survey and sample results which show contamination is less than the limits specified in §336.603 of this title (relating to Radiological Criteria for Unrestricted Use), and an explanation of how ongoing authorized activities will not adversely affect the area proposed to be released. Upon confirmation by the executive director that the area of concern is indeed releasable for unrestricted use, the licensee may apply for a license amendment, if required.

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

§336.514

STATUTORY AUTHORITY

The repeal is adopted under the Texas Radiation Control Act, Texas Health and Safety Code §§401.011, 401.051, and 401.412, and Texas Water Code §5.103, which give the commission the authority to adopt rules necessary to carry out its responsibilities to regulate and license the disposal of radioactive substances.

§336.514. Financial Assurance and Recordkeeping for Decommissioning.

SUBCHAPTER G : LICENSING REQUIREMENTS FOR SOURCE MATERIAL

(URANIUM OR THORIUM) RECOVERY AND PROCESSING FACILITIES

§§336.601-336.606, 336.613-336.629, 336.636

STATUTORY AUTHORITY

These repeals are adopted under the Texas Radiation Control Act, Texas Health and Safety Code §§401.011, 401.051, and 401.412, and Texas Water Code §5.103, which give the commission the authority to adopt rules necessary to carry out its responsibilities to regulate and license the disposal of radioactive substances.

§336.601. Scope and General Provisions.

§336.602. Definitions.

§336.603. Filing of Application.

§336.604. General Requirements for Issuance of a License.

§336.605. Special Requirements for Issuance of a License.

§336.606. Issuance of License.

§336.613. Site and Design Requirements.

§336.614. Groundwater Protection.

§336.615. Secondary Groundwater Protection.

§336.616. Corrective Action Program.

§336.617. Other Considerations for Groundwater Protection.

§336.618. Seepage Control Systems.

§336.619. Tailings or Waste Disposal System.

§336.620. Ore Stockpiling.

§336.621. Disposal Area Cover and Closure.

§336.622. Closure Completion Milestones and Schedule.

§336.623. Monitoring Requirements.

§336.624. Airborne Emission and Discharge Control Requirements.

§336.625. Daily Inspections of Tailings or Waste Retention Systems.

§336.626. Requirement Alternatives.

§336.627. Financial Assurance Requirements.

§336.628. Long-Term Care and Surveillance Requirements.

§336.629. Land Ownership of Tailings or Waste Disposal Sites.

§336.636. Appendix A. Maximum Concentrations for Groundwater Protection.

SUBCHAPTER G : DECOMMISSIONING STANDARDS

§§336.601, 336.603, 336.605, 336.607, 336.609, 336.611, 336.613

STATUTORY AUTHORITY

These new sections are adopted under the Texas Radiation Control Act (TRCA), Texas Health and Safety Code §§401.011, 401.051, and 401.412, and Texas Water Code §5.103, which give the commission the authority to adopt rules necessary to carry out its responsibilities to regulate and license the disposal of radioactive substances.

§336.601. Applicability.

(a) The criteria in this subchapter apply to the decommissioning of facilities regulated under Subchapter F of this chapter (relating to Licensing of Alternative Methods of Disposal of Radioactive Material) and to the ancillary surface facilities that support radioactive waste disposal activities at facilities licensed under Subchapter H of this chapter (relating to Licensing Requirements for Near-surface Land Disposal of Radioactive Waste).

(b) Licensees who have submitted a decommissioning plan to the commission and have received commission approval of the plan before the effective date of these criteria may decommission according to the regulations in place at the time of filing of the plan or according to these criteria.

(c) After a site has been decommissioned and the license terminated in accordance with the criteria in this subchapter, the commission may require additional cleanup only if, based on new information, it determines that the criteria of this subchapter have not been met and residual radioactivity remaining at the site could result in significant threat to public health and safety.

(d) When calculating the total effective dose equivalent (TEDE) to the average member of the critical group, the licensee shall determine the peak annual TEDE expected within the first 1000 years after decommissioning.

§336.603. Radiological Criteria for Unrestricted Use.

(a) A site will be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in a total effective dose equivalent (TEDE) to an average member of the critical group that does not exceed 25 mrem (0.25 mSv) per year (excluding radium and its decay products), including that from groundwater sources of drinking water, and the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA). The concentration for radium in soil shall be equivalent to or below the limits set forth in §336.356(a) of this title (relating to Soil and Vegetation Contamination Limits).

(b) Determination of the levels which are ALARA must take into account consideration of any detriments expected to potentially result from decontamination and waste disposal (e.g. deaths from transportation accidents).

(c) The licensee shall conduct all necessary radiation surveys and modeling, and shall provide reports and documentation to demonstrate that the requirements for release for unrestricted use have been met.

§336.605. Surface Contamination Limits for Facilities, Equipment, and Materials.

(a) Before vacating any facility or releasing any facility, equipment, or materials for unrestricted use, each licensee shall ensure that radioactive contamination has been removed to levels as low as is reasonably achievable.

(b) No licensee may vacate a facility or release a facility, equipment, or materials for unrestricted use until radioactive surface contamination levels are below the limits specified in §336.364, Appendix G, of this title (relating to Acceptable Surface Contamination Levels). The licensee shall conduct radiation surveys and provide reports and documentation to demonstrate that the requirements for release have been met. The executive director may also require the licensee to provide other information as may be necessary to demonstrate that the facilities and equipment are suitable for release.

(c) In addition to meeting the surface contamination limits of subsection (b) of this section, porous materials (e.g., concrete), which are to be released for unrestricted use, shall be evaluated to determine whether radioactive materials have penetrated to the interior of the material. If radioactive contamination has penetrated into the material, analysis of the average concentration, in picocuries per

gram, shall be made. The material may be released for unrestricted use if the radionuclide concentrations do not exceed the limits specified for soil in §336.356(a) of this title (relating to Soil and Vegetation Contamination Limits) and §336.603 of this title (relating to Radiological Criteria for Unrestricted Use).

§336.607. Criteria for License Termination under Restricted Conditions.

A site will be considered acceptable for license termination under restricted conditions if all of the following conditions are met:

(1) The licensee can demonstrate that further reductions in residual radioactivity would result in net public or environmental harm or were not being made because the residual levels associated with restricted conditions are as low as reasonably achievable (ALARA). Determination of the levels which are ALARA must take into account consideration of any detriments expected to potentially result from decontamination and waste disposal (e.g. traffic accidents);

(2) The licensee has made provisions for legally enforceable institutional controls that provide reasonable assurance that the total effective dose equivalent (TEDE) from residual radioactivity distinguishable from background to the average member of the critical group will not exceed 25 mrem (0.25mSv) per year;

(3) The licensee has provided sufficient financial assurance to enable an independent third party, including a governmental custodian of a site, to assume and carry out responsibilities for any necessary control and maintenance of the site. Acceptable financial assurance mechanisms are listed in Subchapter I of this chapter (relating to Financial Assurance);

(4) The licensee has submitted a decommissioning plan to the commission indicating the licensee's intent to decommission and specifying that the licensee intends to decommission by restricting use of the site. The licensee shall document in the decommissioning plan how the advice of individuals and institutions in the community who may be affected by the decommissioning has been sought and incorporated, as appropriate, following analysis of that advice.

(A) Licensees proposing to decommission by restricting use of the site shall seek advice from affected parties regarding the following matters concerning the proposed decommissioning.

(i) Whether provisions for institutional controls proposed by the licensee:

(I) will provide reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group will not exceed 25 mrem (0.25 mSv) TEDE per year;

(II) will be enforceable; and

(III) will not impose undue burdens on the local community or other affected parties.

(ii) Whether the licensee has provided sufficient financial assurance to enable an independent third party, including a governmental custodian of a site, to assume control and maintenance of the site.

(B) In seeking advice on the issues identified in subparagraph (A) of this paragraph, the licensee shall provide for:

(i) participation by representatives of a broad cross section of community interests who may be affected by the decommissioning;

(ii) an opportunity for a comprehensive, collective discussion on the issues by the participants represented; and

(iii) a publicly available summary of the results of all discussions, including a description of the individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants on the issues; and

(5) Residual radioactivity at the site has been reduced so that if the institution controls were no longer in effect, there is reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group is ALARA and would not exceed either:

(A) 100 mrem (1 mSv) per year; or

(B) 500 mrem (5 mSv) per year provided the licensee:

(i) demonstrates that further reductions in residual radioactivity necessary to comply with the 100 mrem/y (1 mSv/y) value of subparagraph (A) of this paragraph are not technically achievable, would be prohibitively expensive, or would result in net public or environmental harm;

(ii) makes provisions for durable institutional controls; and

(iii) provides sufficient financial assurance to enable a responsible government entity or independent third party, including a governmental custodian of a site, both to carry out periodic rechecks of the site no less frequently than every 5 years to assure that the criteria of §336.603(a) of this title (relating to Radiological Criteria for Unrestricted Use) are met and to assume and carry out responsibilities for any necessary control and maintenance of those controls. Acceptable financial assurance mechanisms are those in Subchapter I of this chapter.

§336.609. Alternate Criteria for License Termination.

(a) The commission may terminate a license using alternate criteria greater than the dose criterion of §§336.603 of this title (relating to Radiological Criteria for Unrestricted Use) and 336.607(2) and (4)(A)(i)(I) of this title (relating to Criteria for License Termination under Restricted Conditions), if the licensee:

(1) provides assurance that public health and safety would continue to be protected, and that it is unlikely that the dose from all manmade sources combined, other than medical, would be more than the 1 mSv/y (100 mrem/y) limit of §§336.314-315 of this title (relating to Compliance with Dose Limits for Individual Members of the Public and General Requirements for Surveys and Monitoring, respectively), by submitting an analysis of possible sources of exposure;

(2) has employed, to the extent practical, restrictions on site use according to the provisions of §336.607 of this title in minimizing exposures at the site;

(3) reduces doses to ALARA levels, taking into consideration any detriments such as traffic accidents expected to potentially result from decontamination and waste disposal; and

(4) has submitted a decommissioning plan to the commission indicating the licensee's intent to decommission the facility, and specifying that the licensee proposes to decommission by use of alternate criteria. The licensee shall document in the decommissioning plan how the advice of

individuals and institutions in the community who may be affected by the decommissioning has been sought and addressed, as appropriate, following analysis of that advice. In seeking such advice, the licensee shall provide for:

(A) participation by representatives of a broad cross section of community interests who may be affected by the decommissioning;

(B) an opportunity for a comprehensive, collective discussion on the issues by the participants represented; and

(C) a publicly available summary of the results of all discussions, including a description of the individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants on the issues.

(b) The use of alternate criteria to terminate a license requires approval of the commission after consideration of the executive director's recommendations that will address any comments provided by the Environmental Protection Agency and any other public comments submitted under §336.611 of this title (relating to Public Notification and Public Participation).

§336.611. Public Notification and Public Participation.

Upon the receipt of a decommissioning plan from the licensee, or a proposal by the licensee for release of a site under §336.607 of this title (relating to Criteria for License Termination under Restricted Conditions) or §336.609 of this title (relating to Alternate Criteria for License Termination), or whenever the commission deems notice to be in the public interest, the commission shall publish notice in accordance with §39.313 of this title (relating to Public Notification and Public Participation).

§336.613. Additional Requirements.

(a) The requirements of this section apply only to licenses issued under Subchapter F of this chapter (relating to Licensing of Alternative Methods of Disposal of Radioactive Material).

(b) A decommissioning plan shall be submitted with the license application required by §336.501(c) of this title (relating to Scope and General Provisions). Holders of licenses of inactive disposal sites shall submit a decommissioning plan with the renewal application. Holders of licenses of active disposal sites shall submit a decommissioning plan no later than the date specified in §336.519(e)(2) of this title (relating to Expiration and Termination of Licenses).

(c) The executive director may approve an alternate schedule for submittal of a decommissioning plan required under §336.519(e)(2) of this title if the executive director determines that:

(1) the alternative schedule is necessary for the effective conduct of decommissioning operations; and

(2) presents no undue risk from radiation to the public health and safety and is otherwise in the public interest.

(d) A licensee shall request a license amendment to amend a decommissioning plan if revised procedures could increase potential health and safety impacts to workers or to the public. Examples of procedures that require a license amendment include, but are not limited to:

(1) procedures that involve techniques not applied routinely during cleanup or maintenance operations;

(2) workers entering areas not normally occupied where surface contamination and radiation levels are significantly higher than routinely encountered during operation;

(3) procedures that could result in significantly greater airborne concentrations of radioactive materials than are present during operation; or

(4) procedures that could result in significantly greater releases of radioactive material to the environment than those associated with operation.

(e) Procedures with potential health and safety impacts, such as those listed in subsection (d) of this section, may not be carried out prior to approval by the commission of the decommissioning plan.

(f) The proposed decommissioning plan for the site or separate building or outdoor area shall include:

(1) a description of the conditions of the site or separate building or outdoor area sufficient to evaluate the acceptability of the plan;

(2) a description of planned decommissioning activities;

(3) a description of methods used to ensure protection of workers and the environment against radiation hazards during decommissioning;

(4) a description of the planned final radiation survey;

(5) an updated detailed cost estimate for decommissioning, comparison of that estimate with present funds set aside for decommissioning, and a plan for assuring the availability of adequate funds for completion of decommissioning;

(6) for decommissioning plans calling for completion of decommissioning later than 24 months after plan approval, a justification for the delay based on the criteria in subsection (h) of this section; and

(7) a description of the quality assurance/quality control program.

(g) The proposed decommissioning plan may be approved by the commission by license amendment if the information demonstrates that the decommissioning will be completed as soon as practicable and that the health and safety of workers and the public will be protected.

(h) Except as provided in subsection (j) of this section, the licensee shall complete decommissioning of the site or separate building or outdoor area as soon as practicable but no later than 24 months following the initiation of decommissioning.

(i) Except as provided in subsection (j) of this section, when decommissioning involves the entire site, the licensee shall request license termination as the final step in decommissioning, which shall be as soon as practicable but no later than 24 months following the initiation of decommissioning.

(j) The commission may approve by license amendment a request for an alternate schedule for completion of decommissioning of the site or separate building or outdoor area, and license termination if appropriate, if the commission determines that the alternative is warranted by consideration of the following:

(1) whether it is technically feasible to complete decommissioning within the allotted 24-month period;

(2) whether sufficient waste disposal capacity is available to allow completion of decommissioning within the allotted 24-month period;

(3) whether a significant volume reduction in wastes requiring disposal will be achieved by allowing short-lived radionuclides to decay;

(4) whether a significant reduction in radiation exposure to workers can be achieved by allowing short-lived radionuclides to decay; and

(5) other site-specific factors which the commission may consider appropriate on a case-by-case basis, such as the regulatory requirements of other government agencies, lawsuits, groundwater treatment activities, monitored natural groundwater restoration, actions that could result in more environmental harm than deferred cleanup, and other factors beyond the control of the licensee.

(k) As the final steps in decommissioning, the licensee shall:

(1) certify the disposition of all licensed material, including accumulated wastes;

(2) conduct a radiation survey of the premises where the licensed activities were carried out and submit a report of the results of this survey unless the licensee demonstrates that the premises are suitable for release in some other commission approved manner. The licensee shall, as appropriate:

(A) report levels of gamma radiation in units of microroentgens (millisieverts) per hour at 1 meter from surfaces, and report levels of radioactivity (removable and fixed), including alpha and beta, in units of disintegrations per minute or microcuries (megabecquerels) per 100 square centimeters for surfaces, microcuries (megabecquerels) per milliliter for water, and picocuries (becquerels) per gram for solids such as soils or concrete; and

(B) specify the survey instrument(s) used and certify that each instrument is properly calibrated and tested; and

(3) submit a request for license termination, which includes, but is not limited to, the information required by paragraphs (1) and (2) of this subsection.

(l) The executive director may require the licensee to provide any other information necessary to demonstrate that the facilities and land are suitable for release.

SUBCHAPTER H : LICENSING REQUIREMENTS FOR NEAR-SURFACE

LAND DISPOSAL OF RADIOACTIVE WASTE

§336.701, §336.702

STATUTORY AUTHORITY

This amendment is adopted under the Texas Radiation Control Act (TRCA), Texas Health and Safety Code §§401.011, 401.051, and 401.412, and Texas Water Code §5.103, which give the commission the authority to adopt rules necessary to carry out its responsibilities to regulate and license the disposal of radioactive substances.

§336.701. Scope and General Provisions.

(a) - (c) (No change.)

(d) In addition to the requirements of this subchapter, all licensees, unless otherwise specified, are subject to the requirements of Subchapters A-E and G of this chapter (relating to General Provisions; Radioactive Substance Fees; Additional Application, Operation, and License Requirements; Standards for Protection Against Radiation; Notices, Instructions, and Reports to Workers and Inspections; and Decommissioning Standards).

(e) Requirements for disposal of radioactive waste by an individual waste generator are set forth in Subchapter D of this chapter and Subchapter F of this chapter (relating to Licensing of

Alternative Methods of Disposal of Radioactive Material), and this disposal is not subject to licensing under this subchapter.

§336.702. Definitions.

Terms used in this subchapter are defined in §336.2 of this title (relating to Definitions).

Additional terms used in this subchapter have the following definitions:

(1) **Active maintenance** - Any significant remedial activity needed during the period of institutional control to maintain a reasonable assurance that the performance objectives in §336.724 of this title (relating to Protection of the General Population from Releases of Radioactivity) and §336.725 of this title (relating to Protection of Individuals from Inadvertent Intrusion) are met. 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** - A portion of the disposal site that is controlled by the licensee and that lies under the disposal units and between the disposal units and the boundary of the site.

(3) **Chelating agent** - A chemical or complex which causes an ion, usually a metal, to be joined in the same molecule by relatively stable bonding, e.g., amine polycarboxylic acids (e.g., EDTA, DTPA), hydroxycarboxylic acids, and polycarboxylic acids (e.g., citric acid, carboic acid, and gluconic acid).

(4) **Commencement of major construction** - 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** - A government agency designated to act on behalf of the government owner of the disposal site.

(6) **Disposal** - The isolation of radioactive waste from the biosphere inhabited by man and containing his food chains by emplacement in a land disposal facility.

(7) **Disposal site** - 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** - A discrete portion of the disposal site into which waste is placed for disposal. For near-surface disposal, the disposal unit is usually a trench.

(9) **Engineered barrier** - A man-made structure or device that is intended to improve the land disposal facility's ability to meet the performance objectives in this subchapter.

(10) **Explosive material** - 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) **Government agency** - Any executive department, commission, independent establishment, or corporation, wholly or partly owned by the United States of America or the State of Texas and which is an instrumentality of the United States or the State of Texas; or any board, bureau, division, service, office, officer, authority, administration, or other establishment in the executive branch of the government.

(12) **Hazardous wastes** - Those wastes designated as hazardous by United States Environmental Protection Agency rules in 40 CFR Part 261 as amended through July 1, 1996 (61 FedReg 34278) (relating to Identification and Listing of Hazardous Waste).

(13) **Hydrogeologic unit** - 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.

(14) **Inadvertent intruder** - 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 the person might be unknowingly exposed to radiation from the waste.

(15) **Intruder barrier** - A sufficient depth of cover over the waste that inhibits contact with waste and helps to ensure that radiation exposures to an inadvertent intruder meet the performance objectives set forth in this subchapter, or engineered structures that provide equivalent protection to the inadvertent intruder.

(16) **Monitoring** - Observing and making measurements to provide data to evaluate the performance and characteristics of the disposal site.

(17) **Pyrophoric material** -

(A) Any liquid that ignites spontaneously in dry or moist air at or below 130 degrees Fahrenheit (54.5 degrees Celsius); or

(B) 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.

(18) **Reconnaissance-level information** - Any information or analysis that can be retrieved or generated without the performance of new comprehensive site-specific investigations. Reconnaissance-level information includes but is not limited to relevant published scientific literature; drilling records required by the commission or other state agencies, such as the Railroad Commission of Texas and the Texas Natural Resources Information System; and reports of governmental agencies.

(19) **Site closure and stabilization** - Those actions that are taken upon completion of operations that prepare the disposal site for custodial care and that assure that the disposal site remain stable and not need ongoing active maintenance.

(20) **Stability** - Structural stability.

(21) **Surveillance** - 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.

(22) **Waste** - Radioactive waste, or low-level radioactive waste, as defined in §336.2 of this title (relating to Definitions) which is acceptable for disposal in a land disposal facility. Notwithstanding the definitions in §336.2 of this title, the term "waste" as used in this subchapter includes transuranics in concentrations less than 10 nanocuries per gram, as provided in §336.701(b)(3) of this title (relating to Scope and General Provisions), and byproduct material which meets the limitations of §336.701(c) of this title.

SUBCHAPTER I : FINANCIAL ASSURANCE

§§336.802-336.807

STATUTORY AUTHORITY

These amendments are adopted under the Texas Radiation Control Act (TRCA), Texas Health and Safety Code §§401.011, 401.051, and 401.412, and Texas Water Code §5.103, which give the commission the authority to adopt rules necessary to carry out its responsibilities to regulate and license the disposal of radioactive substances.

§336.802. Definitions.

Terms used in this subchapter are defined in §§336.2, 336.502, and 336.702 of this title (relating to Definitions), except where terms used in this subchapter have the following definitions:

- (1) **Annual review** - Conducted on the anniversary date of the license.
- (2) **Assets** - All existing and all probable future economic benefits obtained or controlled by a particular entity.
- (3) **Closure** - Any one or combination of the following: closure, dismantlement, decontamination, decommissioning, reclamation, disposal, restoration, stabilization, monitoring, or post-closure, excluding long-term care.

(4) **Current assets** - Cash or other assets or resources commonly identified as those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business.

(5) **Current cost estimate** - The most recent estimates prepared in accordance with this chapter and approved by the executive director for the purpose of demonstrating financial assurance for closure and, if applicable, long-term care.

(6) **Current liabilities** - Obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities.

(7) **Independently audited** - An audit performed by an independent certified public accountant in accordance with generally accepted auditing standards.

(8) **Liabilities** - Probable future sacrifices of economic benefits arising from present obligations to transfer assets or provide services to other entities in the future as a result of past transactions or events.

(9) **Long-term care** - Shall mean the same as institutional control as used in Subchapter H of Chapter 336 of this title (relating to Licensing Requirements for Near-Surface Land Disposal of Radioactive Waste).

(10) **Net working capital** - Current assets minus current liabilities.

(11) **Net worth** - Total assets minus total liabilities and is equivalent to owner's equity.

(12) **Parent corporation** - A corporation which directly owns at least 50% of the voting stock of the corporation which is the licensee; the latter corporation is deemed a "subsidiary" of the parent corporation.

(13) **Tangible net worth** - The tangible assets that remain after deducting liabilities; such assets would not include intangibles, such as goodwill and rights to patents or royalties.

§336.803. Financial Assurance Requirements.

(a) This subchapter applies to licensees with closure and, if applicable, long-term care requirements. The licensee must choose from one or more of the mechanisms as specified in §336.804 of this title (relating to Financial Assurance Mechanisms). The mechanisms available to licensees under Subchapter F of Chapter 336 of this title (relating to Licensing of Alternative Methods of Disposal of Radioactive Material) include cash deposit, certificate of deposit, deposit of government securities, trust fund, surety bond, letter of credit, insurance, financial test and corporate guarantee, or external sinking fund. The mechanisms available to licensees under Subchapter H of Chapter 336 of this title (relating to Licensing Requirements for Near-Surface Land Disposal of Radioactive Waste) include cash deposit,

certificate of deposit, deposit of government securities, trust fund, surety bond, letter of credit, or external sinking fund.

(1) - (3) (No change.)

(4) The current cost estimate is subject to annual review by the executive director in accordance with §336.736 of this title (relating to Funding for Disposal Site Closure and Stabilization). Whenever the required financial assurance amount increases to an amount greater than the amount being provided in the financial assurance mechanism, the licensee must either cause the amount of the mechanism to be increased or obtain additional financial assurance to cover the increase. The licensee shall submit evidence of such increase to the executive director.

(5) - (7) (No change.)

(8) For Subchapter H of this chapter, the executive director may accept financial assurance established to meet requirements of other federal or state agencies and/or local governing bodies for closure, and if applicable long-term care, provided such mechanism complies with the requirements of this subchapter and the full amount of financial assurance required for the specific license is clearly identified and committed for use for the purposes of Subchapter H of this chapter.

(9) - (13) (No change.)

(b) A licensee must adjust the current cost estimate for inflation at least 60 days before the anniversary date of the license. The adjustment must be made as specified in paragraphs (1) and (2) of this subsection, using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the United States Department of Commerce in its *Survey of Current Business*. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

(1) - (2) (No change.)

(c) On a case-by-case basis, the executive director may approve other alternative financial assurance mechanisms.

§336.804. Financial Assurance Mechanisms.

(a) - (f) (No change.)

(g) External sinking fund.

(1) The licensee may satisfy the requirements of financial assurance by establishing an external sinking fund.

(2) An external sinking fund is an account segregated from the licensee's assets and outside the licensee's administrative control.

(3) An external sinking fund, such as a trust, is combined with a financial assurance mechanism as specified in subsections (b)-(e) of this section.

(4) The external sinking fund is established and maintained by setting aside funds periodically. Deposits are made at least annually.

(5) The value of the external sinking fund and the combined financial assurance mechanism, is equal to the current cost estimate.

(6) As the value of the sinking fund increases, the value of the combined financial assurance mechanism decreases. When the external sinking fund is equal to the current cost estimate, the combined financial assurance mechanism will no longer be required to be maintained.

§336.805. Long-Term Care Requirements.

The long-term care requirements of this chapter shall apply to the licensees specified under Subchapter H of Chapter 336 of this title (relating to Licensing for Near-Surface Land Disposal of Radioactive Waste) whose ownership of the site is subject to being transferred to the state or federal government.

§336.806. Wording of Financial Assurance Mechanisms.

(a) - (g) (No change.)

§336.807. Appendix A. Wording of Financial Assurance Instruments.

(a) - (g) (No change.)