

25 TEXAS ADMINISTRATIVE CODE

§289.259 (TRCR Part 46)

Licensing of Naturally Occurring Radioactive Material (NORM)

Texas Regulations for Control of Radiation

(effective April 11, 1999)

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§289.259. Licensing of Naturally Occurring Radioactive Material (NORM).

(a) Purpose. This section establishes radiation protection standards for the possession, use, transfer, transport, and/or storage of naturally occurring radioactive material (NORM) or the recycling of NORM-contaminated materials not subject to regulation under the Atomic Energy Act of 1954, as amended (AEA). This section is not intended to regulate the disposal of radioactive substances. The Texas Natural Resource Conservation Commission (TNRCC) has the jurisdiction to regulate disposal of NORM, other than oil and gas NORM, which is under the jurisdiction of the Railroad Commission of Texas (RCT).

(b) Scope.

(1) This section applies to any person who engages in the extraction, mining, beneficiating, processing, use, transfer, transport, or storage of NORM or the recycling of NORM-contaminated materials.

(2) This section addresses the introduction of NORM into products in which neither the NORM nor the radiation emitted from the NORM is considered to be beneficial to the products. The manufacture and commercial distribution of products containing NORM in which the NORM or its associated radiation(s) are considered to be a beneficial attribute are licensed in accordance with the provisions of §289.252 of this title (relating to Licensing of Radioactive Material).

(3) The requirements of this section are in addition to and not in substitution for other applicable requirements of §289.201 of this title (relating to General Provisions), §289.202 of this title (relating to Standards for Protection Against Radiation), §289.203 of this title (relating to Notices, Instructions and Reports to Workers; Inspections), §289.204 of this title (relating to Fees for Certificates of Registration, Radioactive Material(s) Licenses, Emergency Planning and Implementation, and Other Regulatory Services), §289.205 of this title (relating to Hearing and Enforcement Procedures), §289.251 of this title (relating to Exemptions, General Licenses, and General License Acknowledgements), §289.252 of this title, and §289.257 of this title (relating to Packaging and Transportation of Radioactive Material).

(c) Definition. The following words and terms, when used in this section, shall have the following meanings, unless the context clearly indicates otherwise.

(1) Beneficial attribute or beneficial to the product - The radioactivity of the product is necessary to the use of the product.

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(2) Beneficiating - The processing of materials for the purpose of altering chemical or physical properties to improve the quality, purity, or assay grade.

(3) Decontamination - The cleaning process of removing or reducing residual radioactivity from equipment, buildings, structures, and land owned, possessed, or controlled by other persons to a level that permits release of equipment, buildings, structures and land for unrestricted use or termination of license.

(4) Naturally occurring radioactive material (NORM) - Naturally occurring materials not regulated under the AEA whose radionuclide concentrations have been increased by or as a result of human practices. NORM does not include the natural radioactivity of rocks or soils, or background radiation, but instead refers to materials whose radioactivity is concentrated by controllable practices (or by past human practices). NORM does not include source, byproduct, or special nuclear material.

(5) Other media - Any volumetric material other than soils or liquids (for example: sludge, scale, slag, etcetera).

(6) Person - As defined in §289.201(b)(68) of this title.

(7) Product - Something produced, made, manufactured, refined, or beneficiated.

(8) Recycling - A process by which materials that have served their intended use are collected, separated, or processed and returned to use in the form of raw materials in the production of new products. Recycling shall not include the use of a material in a manner that constitutes disposal.

(d) Exemptions.

(1) Persons who receive, possess, use, process, transfer, transport, store, or commercially distribute:

(A) Oil and gas NORM waste are exempt from the requirements of this chapter if the material contains, or is contaminated at, concentrations of:

(i) 30 picocuries per gram (pCi/gm) or less of radium-226 or radium-228 in:

(l) soil, averaged over any 100 square meters (m²) and averaged over the first 15 centimeters (cm) of soil below the surface; or

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(II) other media; or

(i) 150 pCi or less per gram of any other NORM radionuclide
in:

(I) soil, averaged over any 100 m² and averaged over the first 15 cm of soil below the surface, provided that these concentrations are not exceeded; or

(II) other media, provided that these concentrations are not exceeded.

(B) Other than oil and gas NORM waste, NORM is exempt from the requirements of this chapter if the materials contain, or are contaminated at, concentrations of:

(i) 30 pCi/gm or less of radium-226 or radium-228 in:

(I) soil, averaged over any 100 m² and averaged over the first 15 cm of soil below the surface, provided the radon emanation rate is less than 20 picocuries per square meter per second (pCi/m²/sec); or

(II) other media, provided the radon emanation rate is less than 20 pCi/m²/sec;

(ii) 5 pCi/gm or less of radium-226 or radium-228 in:

(I) soil, averaged over any 100 m² and averaged over the first 15 cm of soil below the surface, in which the radon emanation rate is equal to or greater than 20 pCi/m²/sec; or

(II) other media, in which the radon emanation rate is equal to or greater than 20 pCi/m²/sec; or

(iii) 150 pCi or less per gram of any other NORM radionuclide
in:

(I) soil, averaged over any 100 m² and averaged over the first 15 cm of soil below the surface, provided that the radon emanation rate is less than 20 pCi/m²/sec; or

(II) other media, provided that these concentrations are not exceeded.

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(2) Materials and equipment in the recycling process contaminated with NORM scale or residue not otherwise exempted are exempt from the requirements of this section if the maximum radiation exposure level does not exceed 50 microrentgens per hour (μ R/hr) including the background radiation level at any accessible point.

(3) Pipe (tubulars) and other downhole or surface equipment used in oil production contaminated with NORM scale or residue not otherwise exempted is exempt from the requirements of this section if the maximum radiation exposure level does not exceed 50 μ R/hr including the background radiation level at any accessible point.

(4) Products or materials containing NORM distributed in accordance with a specific license issued by the agency in accordance with subsection (k)(4) of this section or an equivalent license issued by another licensing state are exempt from the requirements of this section.

(5) The manufacture, commercial distribution, use, or storage of the following products/materials or the recycling of equipment or containers used to produce, contain, or transport these products are exempt from the requirements of this section:

(A) potassium and potassium compounds that have not been isotopically enriched in the radionuclide K-40;

(B) byproducts from fossil fuel combustion (bottom ash, fly ash, and flue-gas emission control byproducts); and

(C) material used for building construction, industrial processing, sand blasting, metal casings, or other NORM in which the radionuclide content has not been concentrated to higher levels than found in its natural state.

(6) The wholesale and retail commercial distribution (including custom blending), possession, and use of the following products/materials or the recycling of equipment or containers used to produce, contain, or transport these products, are exempt from the requirements of this section. The manufacture of phosphate and potash fertilizer is subject to the general license requirements in subsections (f)-(h) of this section:

(A) phosphate and potash fertilizer;

(B) phosphogypsum for agricultural uses if such commercial distribution and uses meet the requirements of 40 Code of Federal Regulations (CFR) 61.204; and

(C) materials used for building construction if the materials contain NORM that has not been concentrated to higher levels than found in its natural state.

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(7) The possession, storage, use, transportation, and commercial distribution of natural gas and natural gas products and of crude oil and crude oil products containing NORM are exempt from the requirements of this section. The processing of natural gas and crude oil and the manufacture of natural gas products and crude oil products containing NORM are subject to the general license requirements in subsections (f)-(h) of this section.

(8) Possession of produced waters from crude oil and natural gas production is exempt from the requirements of this section if the produced waters are reinjected in a well approved by the agency having jurisdiction to regulate such reinjection or if the produced waters are discharged under the authority of the agency having jurisdiction to regulate such discharge.

(e) Radiation survey instruments.

(1) Radiation survey instruments used to determine exemptions in accordance with subsection (d)(2) and (3) of this section and radiation survey instruments used to make surveys in accordance with subsection (f) of this section shall be able to measure from 1 μ R/hr through at least 500 μ R/hr.

(2) Radiation survey instruments used to make surveys required by this section and §289.202(p)(1) of this title shall be calibrated, appropriate, and operable.

(3) Each radiation survey instrument shall be calibrated:

(A) by a person licensed or registered by the agency, another agreement state or licensing state, or the United States Nuclear Regulatory Commission (NRC) to perform such service;

(B) at energies appropriate for the licensee's use;

(C) at intervals not to exceed 12 months, and after each instrument servicing other than battery replacement; and

(D) to demonstrate an accuracy within plus or minus 20% using a reference source provided by a person authorized in accordance with subparagraph (A) of this paragraph.

(4) Records of these calibrations shall be maintained for agency inspection for five years after the calibration date.

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(f) General license.

(1) A general license is hereby issued to mine, extract, receive, possess, own, use, process, transport, store, and transfer for disposal NORM or to recycle NORM-contaminated materials not exempted in subsection (d) of this section without regard to quantity. This general license does not authorize the manufacture or commercial distribution of products containing NORM in concentrations greater than those specified in subsection (d)(1)(B) of this section, or of NORM in any food, beverage, cosmetic, drug, or other commodity designed for ingestion or inhalation by, or application to, a human being. The melting of scrap metal is authorized by the general license if the dilution of the NORM in the end-products or melt byproducts is sufficient to reduce any expected average concentration of NORM to levels not to exceed the concentration specified in subsection (d)(1)(B) of this section.

(2) Equipment, buildings, and structures contaminated with NORM in excess of the levels set forth in subsection (w) of this section and equipment not otherwise exempted under the provisions of subsection (d)(2) and (3) of this section shall not be released for unrestricted use. The decontamination of equipment, buildings, and structures as described in subsection (i)(2) of this section shall be performed only by persons specifically licensed by the agency or another licensing state to conduct such work, including contractors of a general licensee, except that a general licensee or a contractor under the control and supervision of a general licensee can perform routine maintenance on equipment, buildings, and structures owned or controlled by the general licensee. (Maintenance that provides a different pathway for exposure than is found in daily operations and that increases the potential for additional exposure is not considered routine.) Persons conducting activities specified in subsection (i)(2) of this section and working as a contractor under the control and supervision of a general licensee must possess a specific license issued by the agency in accordance with subsection (k) of this section.

(3) The handling or processing by a general licensee of NORM-contaminated materials not otherwise exempted from the requirements of this section for the purpose of recycling is authorized by the agency if the radiation level 18 inches from the NORM-contaminated material does not exceed 2 millirem per hour (mrem/hr).

(4) The transfer of NORM not exempt from the requirements of this section from one general licensee to another general licensee is authorized by the agency if the:

(A) equipment, buildings, and structures contaminated with NORM are to be used by the recipient for the same purpose or at the same site;

(B) materials being transferred are ores or raw materials for processing or refinement; or

(C) materials being transferred are in the recycling process.

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(g) Protection of workers and the general population. Each person subject to the general license in subsection (f) of this section shall conduct operations in compliance with the standards for radiation protection established in §289.202(f)-(o), (ww)-(zz) of this title, and §289.203 of this title, except for transfer for disposal, which shall be governed by subsection (h) of this section.

(h) Transfer of waste for disposal.

(1) Each person subject to the general license in subsection (f) of this section shall manage and dispose of wastes containing NORM:

(A) in accordance with the United States Environmental Protection Agency's (EPA) applicable requirements for disposal of such wastes;

(B) by transfer of the wastes for disposal to a person specifically licensed to receive waste containing NORM; or

(C) in accordance with alternate methods authorized by the agency having jurisdiction to regulate disposal of such waste.

(2) Records of transfers for disposal shall be maintained for inspection by the agency.

(i) Specific license.

(1) Unless otherwise exempted under the provisions of subsection (d) of this section or licensed under the provisions of §289.252 of this title, the manufacture and commercial distribution of any material or product containing NORM shall be specifically licensed in accordance with this section or in accordance with the equivalent requirements of another licensing state.

(2) Persons conducting deliberate operations to decontaminate the following shall be specifically licensed in accordance with the requirements of this section:

(A) buildings and structures owned, possessed, or controlled by other persons and contaminated with NORM in excess of the levels set forth in subsection (w) of this section; or

(B) equipment or land owned, possessed, or controlled by other persons and not otherwise exempted under the provisions of subsection (d) of this section.

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(3) Unless otherwise exempted in accordance with subsection (d) of this section, persons receiving NORM waste from other persons for storage or processing or persons who process NORM for other persons at temporary job sites shall be specifically licensed in accordance with the requirements of this section.

(4) Spinning pipe gauge licensees performing reclamation activities shall obtain specific authorization to perform NORM decontamination on pipe. Alternatively, spinning pipe gauge licensees may survey tubing before reclamation activities are performed. If the exposure rate on the outside of a pipe, measured at any accessible point, is greater than 50 $\mu\text{R/hr}$, then the spinning pipe gauge licensee shall obtain a NORM decontamination license. If the exposure rate of the pipe measures less than 50 $\mu\text{R/hr}$, a spinning pipe gauge licensee may perform the scale removal activity without additional authorization on their license.

(j) Filing application for specific licenses.

(1) Applications for specific licenses shall be filed in duplicate on a form prescribed by the agency.

(2) The agency may at any time after the filing of the original application, and before the expiration of the license, require further information in order to determine whether the application should be granted or denied, or whether a license should be modified or revoked.

(3) Each application shall be signed by the applicant or licensee, or a person duly authorized to act for and on the licensee's behalf.

(4) A license application may include a request for a license authorizing one or more activities.

(5) Applications and documents submitted to the agency may be made available for public inspection. The agency may, however, withhold any document or part thereof from public inspection in accordance with §289.201(n) of this title.

(6) Each application for a specific license shall be accompanied by the fee prescribed in §289.204 of this title.

(k) Requirements for the issuance of specific licenses.

(1) A license application will be approved if the agency determines that:

(A) the applicant is qualified by reason of training and experience to use the material in question for the purpose requested, according to this section, and in a manner that minimizes danger to public health and safety, property, or the environment;

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(B) the applicant's proposed buildings, structures, and procedures are adequate to minimize danger to public health and safety, property, or the environment;

(C) the issuance of the license will not adversely affect the health and safety of the public;

(D) the applicant satisfies any applicable special requirements in this section; and

(E) the applicant has met the financial security requirements of subsection (v) of this section.

(2) An application for a specific license to decontaminate equipment or land not otherwise exempted under the provisions of subsection (d) of this section or buildings and structures contaminated with NORM in excess of the levels set forth in subsection (w) of this section, as applicable, will be approved if:

(A) the applicant satisfies the requirements specified in paragraph (1) of this subsection; and

(B) the applicant has adequately addressed the following items in the application:

(i) procedures and equipment for monitoring and protection of workers;

(ii) an evaluation of the radiation levels and concentrations of contamination expected during normal operations;

(iii) operating and emergency procedures, and quality assurance of items released for unrestricted use; and

(iv) a method of managing the NORM waste removed from contaminated equipment, buildings, structures, and land for disposal or storage.

(3) An application for a specific license to perform NORM decontamination for spinning pipe gauges not otherwise exempted from the requirements of this section in accordance with subsection (d)(3) of this section will be approved if:

(A) the applicant satisfies the requirements specified in paragraph (1) of this subsection; and

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(B) the applicant has adequately addressed the following items in the application:

(i) procedures and equipment for monitoring and protection of workers;

(ii) an evaluation of the radiation levels and concentrations of contamination expected during normal operations;

(iii) operating and emergency procedures, and quality assurance of items released for unrestricted use; and

(iv) a method of managing the NORM waste removed from contaminated pipes for disposal or storage.

(4) An application for a specific license to manufacture and/or commercially distribute products or materials containing NORM to persons exempted from the requirements of this section in accordance with subsection (d)(4) of this section will be approved if:

(A) the applicant satisfies the requirements specified in paragraph (1) of this subsection;

(B) the NORM is not contained in any food, beverage, cosmetic, drug, or other commodity designed for ingestion or inhalation by, or application to, a human being; and

(C) the applicant submits sufficient information relating to the design, manufacture, prototype testing, quality control procedures, labeling or marking, and conditions of handling, storage, use, and disposal of the NORM material or product to demonstrate that the material or product will meet the safety criteria set forth in subsection (l) of this section. The information shall include:

(i) a description of the material or product and its intended use or uses;

(ii) the type, quantity, and concentration of NORM in each material or product;

(iii) the chemical and physical form of the NORM in the material or product, and changes in chemical and physical form that may occur during the useful life of the material or product;

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(iv) an analysis of the solubility in water and human body fluids of the NORM in the material or product;

(v) the details of manufacture and design of the material or product relating to containment and shielding of the NORM and other safety features under normal and severe conditions of handling, storage, use, reuse, and disposal of the material or product;

(vi) the type and extent of human access to the material or product during normal handling, use, and disposal;

(vii) the total quantity of NORM expected to be distributed annually in the material or product;

(viii) the expected useful life of the material or product;

(ix) the proposed method for labeling or marking each unit of the material or product to identify the manufacturer and/or commercial distributor of the product and the radionuclide(s) and quantity of NORM in the material or product;

(x) procedures for prototype testing of the material or product to demonstrate the effectiveness of the containment, shielding, and other safety features under both normal and severe conditions of handling, storage, use, reuse, and disposal;

(xi) results of the prototype testing of the material or product, including any change in the form of the NORM contained in it, the extent that the NORM may be released to the environment, any change in radiation levels, and any other changes in safety features;

(xii) the estimated external radiation doses and dose commitments relevant to the safety criteria in subsection (l) of this section and the basis for such estimates;

(xiii) a determination that the probabilities with respect to doses referred to in subsection (l) of this section meet the criteria;

(xiv) quality control procedures to be followed in assuring each production lot meets agency-approved quality control standards; and

(xv) any additional information, including experimental studies and tests, required by the agency to facilitate a determination of the safety of the material or product.

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(5) An application for a specific license for persons who receive NORM waste from other persons for processing or persons who process NORM for other persons at temporary job sites in accordance with subsection (i)(3) of this section will be approved if:

(A) the applicant satisfies the requirements specified in paragraph (1) of this subsection; and

(B) the applicant has adequately addressed the following items in the application:

(i) procedures and equipment for monitoring and protection of workers;

(ii) an evaluation of the radiation levels and concentrations of contamination expected during normal operations; and

(iii) operating and emergency procedures, including quality assurance of items released for unrestricted use.

(6) Notwithstanding the provisions of paragraph (4) of this subsection, the agency may deny an application for a specific license if the end uses of the product are frivolous or cannot be reasonably foreseen through complete technical documentation.

(l) Safety criteria. An applicant for a license under subsection (k)(4) of this section shall demonstrate that the product is designed and will be manufactured so that:

(1) during routine use and disposal, it is unlikely that the external radiation dose in any one year, or the dose equivalent resulting from the intake of radioactive material, excluding radon and radon decay products, in any one year, to a suitable sample of the group of individuals expected to be most highly exposed to radiation or radioactive material from the consumer end-use material or product, will exceed the doses in column I of subsection (m) of this section;

(2) during routine handling and storage of the quantities of the industrial material or product likely to accumulate in one location during marketing, commercial distribution, installation, and servicing of the material or product, it is unlikely that the external radiation dose in any one year, or the dose equivalent resulting from the intake of radioactive material, excluding radon and radon decay products, in any one year, to a suitable sample of the group of individuals expected to be most highly exposed to radiation or radioactive material from the industrial material or product, will exceed the doses in column II of subsection (m) of this section;

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(3) during routine use, disposal, handling, and storage, it is unlikely that the radon released from the material or product will result in an increase in the average radon concentration in air of more than 0.4 picocurie per liter (pCi/l); and

(4) it is unlikely that there will be a significant reduction in the effectiveness of the containment, shielding, or other safety features of the material or product from wear and abuse likely to occur in normal handling and use of the material or product during its useful life.

(m) Table of allowable organ doses. The following table describes the doses allowed per specific organ.

Part of Body	<u>Column I*</u> Dose in Rem	<u>Column II*</u> Dose in Rem
Whole body; head and trunk; active blood-forming organs; gonads; or lens of eye	0.005	0.5
Hands and forearms; feet and ankles; localized areas of skin averaged over areas no larger than 1 square centimeter (cm ²)	0.075	7.5
Other organs	0.015	1.5

* Dose limit is the dose above background from the product.

(n) Issuance of specific licenses.

(1) When an application meets the requirements of the Act and rules of the agency, the agency will issue a specific license authorizing the proposed activity in such form and containing appropriate or necessary conditions and limitations.

(2) The agency may incorporate in a license at the time of issuance, or thereafter by amendment, any additional requirements and conditions with respect to the licensee's receipt, possession, use, and transfer of NORM subject to this section as it considers appropriate or necessary in order to:

(A) minimize danger to public health and safety, property, or the environment;

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(B) require such reports and the keeping of such records, and to provide for such inspections of activities under the license as may be appropriate or necessary; and

(C) prevent loss or theft of material subject to this section.

(o) Conditions of licenses issued under subsection (k) of this section.

(1) General terms and conditions.

(A) Each license issued in accordance with this section shall be subject to all the provisions of the Act, now or hereafter in effect, and to all rules and orders of the agency.

(B) No license issued or granted under this section and no right to possess or utilize NORM granted by any license issued in accordance with this section shall be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of any license to any person unless the agency, after securing full information, finds that the transfer is in accordance with the provisions of the Act, and gives its consent in writing.

(C) Each person licensed by the agency in accordance with this section shall use and possess the licensed material at the locations and for purposes authorized in the license.

(D) Each person licensed by the agency in accordance with this section is subject to the general license provisions of subsection (g) of this section.

(E) Each person licensed by the agency in accordance with this section shall manage and dispose of wastes containing NORM:

(i) in accordance with EPA applicable requirements for disposal of such wastes;

(ii) by transfer of the wastes for disposal to a person specifically licensed to receive waste containing NORM and that is licensed under requirements equivalent to those for uranium and thorium byproduct materials in §289.260 of this title;

(iii) by transfer of the wastes for disposal to a facility licensed in accordance with the requirements equivalent to those in the 10 CFR Part 61 by NRC, an agreement state, or a licensing state; or

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(iv) in accordance with alternate methods authorized by the agency having jurisdiction to regulate such wastes.

(F) Notification to the agency.

(i) Each licensee shall notify the agency, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy by or against:

(I) a licensee;

(II) an entity controlling a licensee or listing the license of the licensee as property of the estate; or

(III) an affiliate of the licensee.

(ii) This notification shall include:

(I) the bankruptcy court in which the petition for bankruptcy was filed;

(II) the name of the entity in bankruptcy; and

(III) the date of the filing of the petition.

(2) Quality control, labeling, and reports of transfer. Each person licensed under subsection (k)(4) of this section shall:

(A) carry out adequate control procedures in manufacturing the material or product to assure that each production lot meets the quality control standards approved by the agency;

(B) label or mark each unit to identify the manufacturer, processor, producer, or commercial distributor of the material or product and the NORM in the material or product; and

(C) maintain records identifying, by name and address, each person to whom NORM is transferred for use under subsection (d)(4) of this section or the equivalent requirements of another licensing state, and stating the kinds, quantities, and uses of NORM transferred. An annual summary report stating the total quantity of each radionuclide transferred under the specific license shall be filed with the agency. Each report shall cover the year ending December 31, and shall be filed within 30 days thereafter. If no transfers of radioactive material have been made in accordance with (k)(4) of this section during the reporting period, the report shall so indicate.

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(p) Expiration and termination of licenses.

(1) Except as provided in paragraph (6) of this subsection and subsection (q)(2) of this section, each specific license shall expire at the end of the specified day in the month and year stated in the license.

(2) Each licensee shall notify the agency immediately, in writing, and request termination of the license when the licensee decides to terminate all activities involving materials authorized under the license or when the licensee decides to terminate a licensed location. This notification and request for termination of the license or a licensed location must include the reports and information specified in paragraph (4)(D) of this subsection. The licensee is subject to the provisions of paragraphs (3)-(5) of this subsection, as applicable.

(3) No less than 30 days before the expiration date specified in a specific license, the licensee shall either:

(A) submit an application for license renewal under subsection (q) of this section; or

(B) notify the agency in writing, under paragraph (2) of this subsection, if the licensee decides to discontinue all activities involving NORM.

(4) If a licensee terminates a licensed location or if a licensee does not submit an application for license renewal under subsection (q) of this section, the licensee shall, before a licensed location can be removed from the license, or on or before the expiration date specified in the license:

(A) terminate use of NORM;

(B) properly dispose of NORM; and

(C) submit a record of NORM disposal and radiation survey(s) to confirm the absence of NORM or to establish the levels of residual radioactive contamination. The licensee shall, as appropriate:

(i) submit a record of disposal of radioactive material and radiation survey(s) of the licensee's permanent location of use or storage. Levels of radiation shall be reported in units as required by subsection (w) of this section; and

(ii) specify the instruments(s) used and certify that each instrument is properly calibrated and tested.

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(5) If no radioactivity attributable to activities conducted under the license is detected, the licensee shall submit a certification that no detectable radioactive contamination exceeding the levels listed in subsections (d)(1) and (w) of this section was found. If the agency determines that the information submitted under this paragraph and paragraph (4)(D) of this subsection is adequate and surveys conducted by the agency confirm the findings, the agency will notify the licensee in writing that the license is terminated.

(6) If detectable levels of residual radioactivity attributable to activities conducted under the license are found, the requirements of the license continue in effect beyond the expiration date, if necessary, with respect to possession of residual NORM until the agency notifies the licensee in writing that the requirements of the license have been completed. During this time, the licensee is subject to the provisions of paragraph (7) of this subsection. In addition to the information submitted under paragraph (4)(D) of this subsection, the licensee shall submit a plan, if appropriate, for decontaminating the location(s) and disposing of the residual NORM.

(7) Each licensee who possesses residual radioactive material under paragraph (6) of this subsection, following the expiration date specified in the license, shall:

(A) be limited to actions involving NORM related to preparing the location(s) for release for unrestricted use; and

(B) continue to control entry to restricted areas until the location(s) is suitable for release for unrestricted use and the release is approved by the agency in writing.

(q) Renewal of licenses.

(1) Applications for renewal of specific licenses shall be filed in accordance with subsection (j) of this section.

(2) If a licensee has filed the appropriate application form for renewal (or for a new license authorizing the same activities) at least 30 days prior to the expiration date of the existing license, that license shall not expire until final action by the agency.

(r) Amendment of licenses at request of licensee. Applications for amendment of a license shall be filed in writing and in accordance with subsection (j)(2)-(6) of this section and shall specify how the licensee desires the license to be amended and the grounds for such amendment.

(s) Agency action on applications to renew and amend. In considering an application by a licensee to renew, amend, or transfer the license, the agency will apply the criteria set forth in subsection (k) of this section.

§289.259(t)

(t) Modification and revocation of licenses. Modification, suspension, and revocation of licenses shall be in accordance with §289.205 of this title.

(u) Reciprocal recognition of licenses. Subject to this section, any person who holds a specific license from any licensing state, and issued by the agency having jurisdiction where the licensee maintains an office for directing the licensed activity and at which radiation safety records are normally maintained, is hereby granted a general license to conduct the activities authorized in such licensing document within the state of Texas provided that:

(1) the requirements in §289.252(s) of this title are met; and

(2) the out-of-state licensee shall not transfer or dispose of NORM possessed or used under the general license provided in paragraph (1) of this subsection except by transfer to a person:

(A) specifically licensed by the agency, the Texas agency authorized to regulate disposal of NORM waste, or by another licensing state to receive such material; or

(B) exempt from the requirements for a license for such material under subsection (d) of this section.

(v) Financial security requirements.

(1) Each person specifically licensed in accordance with this section for possession of NORM shall comply with the financial security requirements of §289.252(u) of this title.

(2) On April 11, 1999, current licenses in effect may continue provided that the required security arrangements be submitted to the agency by October 11, 1999.

(3) No later than 90 days after the licensee notifies the agency that decontamination and decommissioning have been completed, the agency shall determine if these have been conducted in accordance with the requirements of this section and the conditions of the license. If the agency finds that the requirements have been met, the Director of the Radiation Control Program shall direct the return or release of the licensee's security in full plus any accumulated interest. If the agency finds that the requirements have not been met, the agency will notify the licensee of the steps necessary for compliance.

§289.259(w)

(w) Acceptable surface contamination levels for NORM. The following table is to be used in determining compliance with subsections (f)(2) and (p) of this section.

	AVERAGE ^{bcf}	MAXIMUM ^{bdf}	REMOVABLE ^{bcef}
NORM ^a	5,000 dpm/100 cm ²	15,000 dpm/100 cm ²	1,000 dpm/100 cm ²

^a Surfaces contaminated with alpha and beta emitting naturally occurring radionuclides may be surveyed with a detector that responds to both types of radiation. The same method may be employed when evaluating wipe samples for removable contamination.

^b As used in this table, dpm (disintegrations per minute) means the rate of emission by naturally occurring radioactive material as determined by using a ratemeter or scaler and detector appropriate for the type and energy of emissions being monitored. The detector shall be capable of responding to alpha, beta and/or gamma radiations.

^c Measurements of average contamination level should not be averaged over more than 1 m². For objects of less surface area, the average should be derived for each object.

^d The maximum contamination level applies to an area of not more than 100 cm².

^e The amount of removable radioactive material per 100 cm² of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

^f All surveys and efficiency determinations shall be made with the detector's active surface no greater than one centimeter from the surface being surveyed, wipe being analyzed, or source being used. A scaler must be used when evaluating wipe samples and count times must be sufficient to detect 10% of the applicable limit with 95% confidence that the activity would be detected.

**Cross Reference Table for 25 Texas Administrative Code §289.259 and Equivalent
Texas Regulations for Control of Radiation (TRCR) Part 46 Formats**

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(a)	46.1
(b)	46.2
(b)(1)	46.2
(b)(2)	46.2
(b)(3)	46.1
(c)	46.3
(c)(1)-(8)	46.3
(d)	46.4
(d)(1)	46.4(a)
(d)(1)(A)	-----
(d)(1)(A)(i)	-----
(d)(1)(A)(i)(I)	-----
(d)(1)(A)(i)(II)	-----
(d)(1)(A)(ii)	-----
(d)(1)(A)(ii)(I)	-----
(d)(1)(A)(ii)(II)	-----
(d)(1)(B)	46.4(a)(1)
(d)(1)(B)(i)	-----
(d)(1)(B)(i)(I)	46.4(a)(1)(i)(a)
(d)(1)(B)(i)(II)	46.4(a)(1)(i)(b)
(d)(1)(B)(ii)(I)	46.4(a)(1)(ii)(a)
(d)(1)(B)(ii)	-----
(d)(1)(B)(ii)(II)	46.4(a)(1)(ii)(b)
(d)(1)(B)(iii)	-----
(d)(1)(B)(iii)(I)	46.4(a)(1)(iii)(a)
(d)(1)(B)(iii)(II)	46.4(a)(1)(iii)(b)
(d)(2)	46.4(a)(2)
(d)(3)	-----
(d)(4)	46.4(b)
(d)(5)	46.4(c)
(d)(5)(A)	46.4(c)(1)
(d)(5)(B)	46.4(c)(2)
(d)(5)(C)	46.4(c)(3)
(d)(6)	46.4(d)
(d)(6)(A)	46.4(d)(1)
(d)(6)(B)	46.4(d)(2)
(d)(6)(C)	46.4(d)(3)
(d)(7)	46.4(e)

(d)(8)	46.4(f)
(e)	46.5
(e)(1)	46.5(a)
(e)(2)	46.5(b)
(e)(3)	46.5(c)
(e)(3)(A)	46.5(c)(1)
(e)(3)(B)	46.5(c)(2)
(e)(3)(C)	46.5(c)(3)
(e)(3)(D)	46.5(c)(4)
(e)(4)	46.5(d)
(f)	46.10
(f)(1)	46.10(a)
(f)(2)	46.10(b)
(f)(3)	46.10(c)
(f)(4)	46.10(d)
(f)(4)(A)	46.10(d)(1)
(f)(4)(B)	46.10(d)(2)
(f)(4)(C)	46.10(d)(3)
(g)	46.11
(h)	46.12
(h)(1)	46.12(a)
(h)(1)(A)	46.12(a)(1)
(h)(1)(B)	46.12(a)(2)
-----	46.12(a)(3)
(h)(1)(C)	46.12(a)(4)
(h)(2)	46.12(b)
-----	46.12(c)
(i)	46.20
(i)(1)	46.20(a)
(i)(2)	46.20(b)
(i)(2)(A)	46.20(b)(1)
(i)(2)(B)	46.20(b)(2)
(i)(3)	-----
(i)(4)	-----
(j)	46.21
(j)(1)	46.21(a)
(j)(2)	46.21(b)
(j)(3)	46.21(c)
(j)(4)	46.21(d)
(j)(5)	46.21(e)
(j)(6)	46.21(f)
(k)	46.22

(k)(1)	46.22(a)
(k)(1)(A)	46.22(a)(1)
(k)(1)(B)	46.22(a)(2)
(k)(1)(C)	46.22(a)(3)
(k)(1)(D)	46.22(a)(4)
(k)(1)(E)	46.22(a)(5)
(k)(2)	46.22(b)
(k)(2)(A)	46.22(b)(1)
(k)(2)(B)	46.22(b)(2)
(k)(2)(B)(i)	46.22(b)(2)(i)
(k)(2)(B)(ii)	46.22(b)(2)(ii)
(k)(2)(B)(iii)	46.22(b)(2)(iii)
(k)(2)(B)(iv)	46.22(b)(2)(iv)
(k)(3)	-----
(k)(3)(A)	-----
(k)(3)(B)	-----
(k)(3)(B)(i)	-----
(k)(3)(B)(ii)	-----
(k)(3)(B)(iii)	-----
(k)(3)(B)(iv)	-----
(k)(4)	46.22(c)
(k)(4)(A)	46.22(c)(1)
(k)(4)(B)	46.22(c)(2)
(k)(4)(C)	46.22(c)(3)
(k)(4)(C)(i)	46.22(c)(3)(i)
(k)(4)(C)(ii)	46.22(c)(3)(ii)
(k)(4)(C)(iii)	46.22(c)(3)(iii)
(k)(4)(C)(iv)	46.22(c)(3)(iv)
(k)(4)(C)(v)	46.22(c)(3)(v)
(k)(4)(C)(vi)	46.22(c)(3)(vi)
(k)(4)(C)(vii)	46.22(c)(3)(vii)
(k)(4)(C)(viii)	46.22(c)(3)(viii)
(k)(4)(C)(ix)	46.22(c)(3)(ix)
(k)(4)(C)(x)	46.22(c)(3)(x)
(k)(4)(C)(xi)	46.22(c)(3)(xi)
(k)(4)(C)(xii)	46.22(c)(3)(xii)
(k)(4)(C)(xiii)	46.22(c)(3)(xiii)
(k)(4)(C)(xiv)	46.22(c)(3)(xiv)
(k)(4)(C)(xv)	46.22(c)(3)(xv)
(k)(5)	-----
(k)(5)(A)	-----
(k)(5)(B)	-----

(k)(5)(B)(i)	-----
(k)(5)(B)(ii)	-----
(k)(5)(B)(iii)	-----
(k)(6)	46.22(d)
(l)	46.23
(l)(1)	46.23(a)
(l)(2)	46.23(b)
(l)(3)	46.23(c)
(l)(4)	46.23(d)
(m)	46.24
(n)	46.25
(n)(1)	46.25(a)
(n)(2)	46.25(b)
(n)(2)(A)	46.25(b)(1)
(n)(2)(B)	46.25(b)(2)
(n)(2)(C)	46.25(b)(3)
(o)	46.26
(o)(1)	46.26(a)
(o)(1)(A)	46.26(a)(1)
(o)(1)(B)	46.26(a)(2)
(o)(1)(C)	46.26(a)(3)
(o)(1)(D)	46.26(a)(4)
(o)(1)(E)	46.26(a)(5)
(o)(1)(E)(i)	46.26(a)(5)(i)
(o)(1)(E)(ii)	46.26(a)(5)(ii)
(o)(1)(E)(iii)	46.26(a)(5)(iii)
(o)(1)(E)(iv)	46.26(a)(5)(iv)
(o)(1)(F)	-----
(o)(1)(F)(i)	46.26(a)(6)(i)
(o)(1)(F)(i)(I)	46.26(a)(6)(i)(a)
(o)(1)(F)(i)(II)	46.26(a)(6)(i)(b)
(o)(1)(F)(i)(III)	46.26(a)(6)(i)(c)
(o)(1)(F)(ii)	46.26(a)(6)(ii)
(o)(1)(F)(ii)(I)	46.26(a)(6)(ii)(a)
(o)(1)(F)(ii)(II)	-----
(o)(1)(F)(ii)(III)	46.26(a)(6)(ii)(b)
(o)(2)	46.26(b)
(o)(2)(A)	46.26(b)(1)
(o)(2)(B)	46.26(b)(2)
(o)(2)(C)	46.26(b)(3)
(p)	46.27
(p)(1)	46.27(a)

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(p)(2)	46.27(b)
(p)(3)	46.27(c)
(p)(3)(A)	46.27(c)(1)
(p)(3)(B)	46.27(c)(2)
(p)(4)	46.27(d)(1)
(p)(4)(A)	46.27(d)(1)(i)
-----	46.27(d)(1)(ii)
(p)(4)(B)	46.27(d)(1)(iii)
(p)(4)(C)	46.27(d)(1)(iv)
(p)(4)(C)(i)	46.27(d)(1)(iv)(a)
(p)(4)(C)(ii)	46.27(d)(1)(iv)(b)
(p)(5)	46.27(d)(2)
(p)(6)	46.27(d)(3)
(p)(7)	46.27(e)
(p)(7)(A)	46.27(e)(1)
(p)(7)(B)	46.27(e)(2)
(q)	46.28
(q)(1)	46.28(a)
(q)(2)	46.28(b)
(r)	46.29
(s)	46.30
(t)	46.31
-----	46.31(a)
-----	46.31(b)
-----	46.31(c)
(u)	46.40
(u)(1)	46.40(a)-(d)
(u)(2)	46.40(e)
(u)(2)(A)	46.40(e)(1)
(u)(2)(B)	46.40(e)(2)
(v)	46.50
(v)(1)	-----
(v)(2)	46.50(b)
(v)(3)	46.50(c)
(w)	Appendix 46-A