

The Texas Commission on Environmental Quality (TCEQ, agency, commission) adopts the amendment to §336.1115.

Section 336.1115 is adopted *with change* to the proposed text as published in the July 5, 2013 issue of the *Texas Register* (38 TexReg 4300) as corrected in the July 19, 2013 issue of the *Texas Register* (38 TexReg 4653) and will be republished.

### **Background and Summary of the Factual Basis for the Adopted Rule**

In response to a petition for rulemaking, the commission adopts this rulemaking to amend the decommissioning standards applicable to radioactive source material (i.e., uranium mining) sites and by-product disposal sites so that the standards will conform to federal requirements.

On February 12, 2013, Barrett & Associates, PLLC submitted a rulemaking petition on behalf of Uranium Energy Corp. (UEC), Radioactive Materials License Number R06064. In their petition, UEC requested that the commission amend §336.1115(e) related to the standards (other than radium) for release of outdoor areas for unrestricted use to reflect that the Radium Benchmark Dose approach is an alternative method to meeting the soil criteria specified in §336.1115(e). At the TCEQ's agenda on April 10, 2013, the commission approved the initiation of a rulemaking based on this petition (Project Number 2013-021-PET-NR).

As requested in the petition, the commission adopts the amendment to §336.1115(e) to remove paragraph (3) and amend paragraph (4) to reflect the Radium Benchmark Dose approach as the clean-up standard (in addition to the radium standard) for release of outdoor areas for unrestricted use. In considering the petition, agency staff reviewed the current language in §336.1115(e) and determined that inclusion of a specific soil standard for the concentration of uranium in soil is not consistent with the federal requirements of the United States Nuclear Regulatory Commission (NRC). The federal regulations set a standard for the concentration of radium in soil and require a risk-based dose assessment, but do not establish a specific concentration limit for uranium. A decommissioning standard for the concentration of uranium in soil is not necessary because the required risk-based radium benchmark dose assessment approach accounts for the radioactivity of the radionuclides in soil, including uranium.

The licensing program for uranium mining has transferred several times from the TCEQ and the Texas Department of State Health Services (DSHS). When the program was previously at TCEQ, the commission proposed rules and invited comments on including a standard for the concentration of uranium in soils in a 1997 rulemaking (Rule Log Number 1997-154-336-WS). In response to comments from the NRC, however, the commission did not adopt a standard for uranium (*See* May 27, 1997, issue of the *Texas Register* (22 TexReg 4593)). After the program was transferred to DSHS in 1997, it

appears the standard for uranium was picked up as a requirement in DSHS rules without any specific explanation. The current TCEQ rule language was carried back over from the rules of DSHS when the licensing program was transferred by Senate Bill 1604 in 2007 (Rule Project Number 2007-060-336-PR). The dose-based approach was added in the rule in response to a comment from the NRC, but the limit for the uranium concentration was not removed from the rule. Accordingly, the commission now adopts the rule to remove the uranium concentration requirement to be consistent with the applicable federal requirements.

A correction of error was published in the July 19, 2013 issue of the *Texas Register* (38 TexReg 4653) to correct four typographical errors in the proposed rule where the superscript "2" appeared as a subscript.

### **Section Discussion**

The commission adopts administrative changes throughout the adopted rule to reflect the agency's existing practices, conform with *Texas Register* and agency guidelines, and correct typographical and grammatical errors.

Section 336.1115(e) establishes the requirements for the release for unrestricted use of outdoor areas at source material recovery sites or by-product disposal sites. The commission adopts the amendment to §336.1115(e) by deleting the existing language in

paragraph (3) that established a limit for the concentration of natural uranium in soil. The commission adopts the amendment to delete the language in paragraph (4) and renumber the existing requirement for the radium benchmark dose approach as paragraph (3). The commission adopts the amendment to reword the requirement of the radium benchmark approach to be consistent with the NRC's applicable language in 10 Code of Federal Regulations (CFR) Part 40, Appendix A, Criterion 6(6). As required under the existing rule, the potential peak annual total effective dose equivalent for members of the public or member of the critical group must be calculated by the methodology provided in NUREG-1620, Appendix H- "Guidance to the U.S. Nuclear Regulatory Commission Staff on Radium Dose Approach."

### **Final Regulatory Impact Determination**

The commission reviewed the adopted rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225, and determined that the rulemaking is not subject to Texas Government Code, §2001.0225 because it does not meet the definition of a "major environmental rule" as defined in the act. "Major environmental rule" means a rule the specific intent of which is to protect the environment or reduce risks to human health from environmental exposure and that may 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. The adopted amendment to Chapter 336 is not anticipated

to 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 because the adopted rule establishes decommissioning standards for the release of outdoor areas at uranium mining sites or by-product disposal sites that are compatible with the requirements of the NRC. The commission proposes the rule to remove the standard for the concentration of uranium in soil. A decommissioning standard for the concentration of uranium in soil is not necessary because the required risk-based radium benchmark dose assessment approach accounts for the radioactivity of uranium.

Furthermore, the adopted rule does not meet any of the four applicability requirements listed in Texas Government Code, §2001.0225(a). Texas Government Code, §2001.0225 only applies to a major environmental rule, the result of which is to: 1) exceed a standard set by federal law, unless the rule is specifically required by state law; 2) exceed an express requirement of state law, unless the rule is specifically required by federal law; 3) exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4) adopt a rule solely under the general powers of the agency instead of under a specific state law. The adopted rule does not exceed a standard set by federal law, an express requirement of state law, a requirement of a delegation agreement, nor adopt a rule solely under the general powers of the agency.

The Texas Radiation Control Act, Texas Health and Safety Code (THSC), Chapter 401, authorizes the commission to regulate the recovery and processing of source material and the disposal of radioactive by-product material. THSC, §401.262 authorizes the commission to assure that processing and disposal sites are closed and that by-product material is managed in compliance with applicable federal standards. In addition, the state of Texas is an "Agreement State," authorized by the NRC to administer a radiation control program under the Atomic Energy Act. The adopted rule does not exceed a standard set by federal law. The adopted rule implements standards that are consistent with the NRC requirements for the decommissioning of source material recovery sites or by-product disposal sites under 10 CFR Part 40, Appendix A, Criterion 6(6).

The adopted rule does not exceed an express requirement of state law. The Texas Radiation Control Act, THSC, Chapter 401, establishes general requirements for the licensing and disposal of radioactive materials. THSC, §401.262 specifically authorizes the commission to assure that processing and disposal sites are closed in compliance with applicable federal standards that are protective of human health and safety and the environment.

The commission has also determined that the adopted rule does not exceed a requirement of a delegation agreement or contract between the state and an agency of

the federal government. The State of Texas has been designated as an "Agreement State" by the NRC under the authority of the Atomic Energy Act. The Atomic Energy Act requires that the NRC find that the state radiation control program is compatible with the NRC's requirements for the regulation of radioactive materials and is adequate to protect health and safety. The commission determined that the adopted rule does not exceed the NRC's requirements nor exceed the requirements for retaining status as an "Agreement State."

The commission also determined that the rule is proposed under specific authority of the Texas Radiation Control Act, THSC, Chapter 401. THSC, §§401.051, 401.103, 401.104, and 401.412 authorize the commission to adopt rules for the control of sources of radiation, the licensing of source material recovery and disposal of radioactive materials.

The commission invited public comment regarding the draft regulatory impact analysis determination during the public comment period. No comments were received regarding the regulatory impact analysis determination.

### **Takings Impact Assessment**

The commission evaluated the adopted rule and performed a preliminary assessment of whether the adopted rule constitutes a taking under Texas Government Code, Chapter

2007. The commission's preliminary assessment indicates that Texas Government Code, Chapter 2007 does not apply to the proposed rule because this is an action that is reasonably taken to fulfill an obligation mandated by federal law, which is exempt under Texas Government Code, §2007.003(b)(4). The State of Texas has received authorization as an "Agreement State" from the NRC to administer a radiation control program under the Atomic Energy Act. The Atomic Energy Act requires the NRC to find that the state's program is compatible with NRC requirements for the regulation of radioactive materials and is protective of health and safety. The adopted rule will provide consistency with federal regulations.

Nevertheless, the commission further evaluated the adopted rule and made a preliminary assessment that implementation of the proposed rule would not constitute a taking of real property under Texas Government Code, Chapter 2007. The purpose of the adopted rule is to establish the standards for release of outdoor areas for unrestricted use after the completion of decommissioning activities at uranium mining or by-product disposal sites. The standards are adopted to be consistent with the NRC's standards provided in 10 CFR Part 40, Appendix A, Criterion 6(6). The adopted rule would substantially advance this purpose by amending the current rule to remove a specific standard for concentration of uranium in soil, which is not included in the federal standards for release of property for unrestricted use. No requirements are imposed by the commission in the adopted rule that would constitute a taking of real

property.

Promulgation and enforcement of the adopted rule would be neither a statutory nor a constitutional taking of private real property. The adopted rule does not affect a landowner's rights in private real property because this rulemaking does not burden (constitutionally), nor restrict or limit, the owner's right to property and reduce its value by 25% or more beyond which would otherwise exist in the absence of the rule. The adopted rule removes the standard for the concentration of uranium in soil and mirror language of the NRC for the release of outdoor areas after decommissioning.

### **Consistency with the Coastal Management Program**

The commission reviewed the adopted rule and found that it is neither identified in Coastal Coordination Act Implementation Rules, 31 TAC §505.11(b)(2) or (4), nor will it affect any action/authorization identified in Coastal Coordination Act Implementation Rules, 31 TAC §505.11(a)(6). Therefore, the adopted rule is not subject to the Texas Coastal Management Program.

The commission invited public comment regarding the consistency with the coastal management program during the public comment period. No comments were received on the Coastal Management Program.

### **Public Comment**

The comment period closed on August 5, 2013. The commission received two comments. One comment was received from the Uranium Committee of the Texas Mining & Reclamation Association (TMRA-UC). The TMRA-UC comment was in support of the adopted rule change. The second comment was received by the NRC. The NRC's comment letter did not address the proposed revision to §336.1115. The NRC's comment addressed an existing provision in the TCEQ rule in §336.1127 for determining the amount of financial assurance required for long-term care and maintenance obligations based on an assumed real annual interest rate of 2%.

### **Response to Comments**

TMRA-UC is in support of the adopted rule and believes it would "adequately address the inconsistencies between the existing language of Section 336.1115(e) and 10 CFR Part 40 Appendix A, Criterion 6(6)." The commission appreciates the statement of support for this rulemaking.

The NRC's comment was unrelated to the proposed rulemaking. Because the commission's proposed rulemaking did not address financial assurance requirements or propose revisions to §336.1127, the NRC comment is not germane to this rulemaking and cannot be addressed by the commission at this time. No change to the proposed rule was made in response to this comment.

**SUBCHAPTER L: LICENSING OF SOURCE MATERIAL RECOVERY AND  
BY-PRODUCT MATERIAL DISPOSAL FACILITIES**

**§336.1115**

**Statutory Authority**

The amendment is adopted under the Texas Radiation Control Act, Texas Health and Safety Code (THSC), Chapter 401; THSC, §401.011, which provides the commission authority to regulate and license the disposal of radioactive substances, the commercial processing and storage of radioactive substances, and the recovery and processing of source material; THSC, §401.051, which authorizes the commission to adopt rules and guidelines relating to control of sources of radiation; THSC, §401.103, which authorizes the commission to adopt rules and guidelines that provide for licensing and registration for the control of sources of radiation; THSC, §401.104, which requires the commission to provide rules for licensing for the disposal of radioactive substances; THSC, §401.262, which authorizes the commission to assure that by-product disposal sites are closed and that by-product material is managed and disposed in compliance with applicable federal standards; and THSC, §401.412, which provides the commission authority to adopt rules for the recovery and processing of source material and the disposal of by-product material. The adopted amendment is also authorized by Texas Water Code, §5.103, which provides the commission with the authority to adopt rules necessary to carry out its powers and duties under the Texas Water Code and other laws of the state.

The amendment implement THSC, Chapter 401, relating to Radioactive Materials and Other Sources of Radiation, including THSC, §401.011, relating to Radiation Control Agency; THSC, §401.051, relating to Adoption of Rules and Guidelines; THSC, §401.103, relating to Rules and Guidelines for Licensing and Registration; THSC, §401.104, relating to Licensing and Registration Rules; and THSC, §401.262, relating to Management of Certain By-Product Material.

**§336.1115. Expiration and Termination of Licenses; Decommissioning of Sites, Separate Buildings or Outdoor Areas.**

- (a) The term of the specific license is for a fixed term not to exceed ten years.
  
- (b) Expiration of the specific license does not relieve the licensee of the requirements of this chapter.
  
- (c) All license provisions continue in effect beyond the expiration date with respect to possession of radioactive material until the agency notifies the former licensee in writing that the provisions of the license are no longer binding. During this time, the former licensee must:

(1) be limited to actions involving radioactive material that are related to decommissioning; and

(2) continue to control entry to restricted areas until the location(s) is suitable for release for unrestricted use in accordance with the requirements of subsection (e) of this section.

(d) Within 60 days of the occurrence of any of the following, each licensee must provide notification to the agency in writing and either begin decommissioning its site, or any separate buildings or outdoor areas that contain residual radioactivity in accordance with the closure plan in §336.1111(1)(B) of this title (relating to Special Requirements for a License Application for Source Material Recovery and By-product Material Disposal Facilities), so that the buildings or outdoor areas are suitable for release in accordance with subsection (e) of this section if:

(1) the license has expired in accordance with subsection (a) of this section; or

(2) the licensee has decided to permanently cease principal activities, as defined in §336.1105(24) of this title (relating to Definitions), at the entire site or in any separate building or outdoor area; or

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

(e) Outdoor areas are considered suitable for release for unrestricted use if the following limits are not exceeded.

(1) The concentration of radium-226 or radium-228 (in the case of thorium by-product material) in soil, averaged over any 100 square meters (m<sup>2</sup>), may not exceed the background level by more than:

(A) 5 picocuries per gram (pCi/g) (0.185 becquerel per gram (Bq/g)), averaged over the first 15 centimeters (cm) of soil below the surface; and

(B) 15 pCi/g (0.555 Bq/g), averaged over 15 cm thick layers of soil more than 15 cm below the surface.

(2) The contamination of vegetation may not exceed 5 pCi/g (0.185 Bq/g), based on dry weight, for radium-226 or radium-228.

(3) By-product material containing concentrations of radionuclides other than radium in soil (e.g., natural uranium, natural thorium, lead-210), and surface activity on remaining structures, must not result in a total effective dose equivalent (TEDE) exceeding the dose from cleanup of radium contaminated soil to the standard in paragraph (1) of this subsection (radium benchmark dose), and must be at levels which are as low as reasonably achievable. If more than one residual radionuclide is present in the same 100 m<sup>2</sup> area, the sum of the ratios for each radionuclide of concentration present to the calculated radium benchmark dose equivalent concentration limits will not exceed "1" (unity). A calculation of the potential peak annual TEDE within 1,000 years to the average member of the critical group that would result from applying the radium standard (not including radon) must be submitted for approval, using the United States Nuclear Regulatory Commission (NRC) staff guidance on the Radium Benchmark Dose Approach.

(f) Coincident with the notification required by subsection (c) of this section, the licensee shall maintain in effect all decommissioning financial security established by the licensee in accordance with §336.1125 of this title (relating to Financial Assurance Requirements) in conjunction with a license issuance or renewal or as required by this section. The amount of the financial security must be increased, or may be decreased, as appropriate, with agency approval, to cover the detailed cost estimate for decommissioning established in accordance with subsection (l)(5) of this section.

(g) In addition to the provisions of subsection (h) of this section, each licensee must submit an updated closure plan to the agency within 12 months of the notification required by subsection (d) of this section. The updated closure plan must meet the requirements of §336.1111(1)(B) and §336.1125 of this title. The updated closure plan must describe the actual conditions of the facilities and site and the proposed closure activities and procedures.

(h) The agency may grant a request to delay or postpone initiation of the decommissioning process if the agency determines that such relief is not detrimental to the occupational and public health and safety and is otherwise in the public interest. The request must be submitted no later than 30 days before notification in accordance with subsection (d) of this section. The schedule for decommissioning in subsection (d) of

this section may not begin until the agency has made a determination on the request.

(i) A decommissioning plan must be submitted if required by license condition or if the procedures and activities necessary to carry out decommissioning of the site or separate building or outdoor area have not been previously approved by the agency and these procedures could increase potential health and safety impacts to workers or to the public, such as in any of the following cases:

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

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

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

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

(j) The agency may approve an alternate schedule for submittal of a decommissioning plan required in accordance with subsection (d) of this section if the agency determines that the alternative schedule is necessary to the effective conduct of decommissioning operations and presents no undue risk from radiation to the occupational and public health and safety and is otherwise in the public interest.

(k) The procedures listed in subsection (i) of this section may not be carried out prior to approval of the decommissioning plan.

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

(1) a description of the conditions of the site, separate buildings, 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 decommissioning; and

(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 (p) of this section.

(m) The proposed decommissioning plan may be approved by the agency if the information in the plan demonstrates that the decommissioning will be completed as soon as practicable and that the occupational health and safety of workers and the public will be adequately protected.

(n) Except as provided subsection (p) of this section, licensees 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.

(o) Except as provided in subsection (p) of this section, when decommissioning involves the entire site, the licensee must request license termination as soon as practicable but no later than 24 months following the initiation of decommissioning.

(p) The agency may approve a request for an alternate schedule for completion of decommissioning of the site or separate buildings or outdoor areas and the license termination if appropriate, if the agency determines that the alternative is warranted by the 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; and

(3) other site-specific factors that the agency 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.

(q) As the final step in decommissioning, the licensee must:

(1) certify the disposition of all radioactive material, including accumulated by-product material;

(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 accordance with subsection (e) of this section. The licensee shall, as appropriate:

(A) report the following levels:

(i) gamma radiation in units of microrentgen per hour ( $\mu\text{R/hr}$ ) (millisieverts per hour ( $\text{mSv/hr}$ )) at 1 meter (m) from surfaces;

(ii) radioactivity, including alpha and beta, in units of disintegrations per minute (dpm) or microcuries ( $\mu\text{Ci}$ ) (megabecquerels (MBq)) per  $100\text{cm}^2$  for surfaces;

(iii)  $\mu\text{Ci}$  (MBq) per milliliter for water; and

(iv) picocuries (pCi) (becquerels (Bq)) per gram (g) for solids such as soils or concrete; and

(B) specify the manufacturer's name, and model and serial number of survey instrument(s) used and certify that each instrument is properly calibrated and tested.

(r) The executive director will provide written notification to specific licensees, including former licensees with license provisions continued in effect beyond the expiration date in accordance with subsection (d) of this section, that the provisions of

the license are no longer binding. The executive director will provide such notification when the executive director determines that:

(1) radioactive material has been properly disposed;

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

(3) a radiation survey has been performed that demonstrates that the premises are suitable for release in accordance with agency requirements;

(4) other information submitted by the licensee is sufficient to demonstrate that the premises are suitable for release in accordance with the requirements of subsection (e) of this section;

(5) all records required by §336.343 of this title (relating to Records of Surveys) have been submitted to the agency;

(6) the licensee has paid any outstanding fees required by this chapter and has resolved any outstanding notice(s) of violation issued to the licensee;

(7) the licensee has met the applicable technical and other requirements for closure and reclamation of a by-product material disposal site; and

(8) the NRC has made a determination that all applicable standards and requirements have been met.

(s) Licenses for source material recovery or by-product material disposal are exempt from subsections (d)(3), (g), and (h) of this section with respect to reclamation of by-product material impoundments or disposal areas. Timely reclamation plans for by-product material disposal areas must be submitted and approved in accordance with §336.1129(p) - (aa) of this title (relating to Technical Requirements).

(t) A licensee may request that a subsite or a portion of a licensed site 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 agency for release for unrestricted use, a written request for release for unrestricted use and agency confirmation of closeout work performed shall be submitted to the agency. The request should include a comprehensive report, accompanied by survey and sample results that show

contamination is less than the limits specified in subsection (e) of this section and an explanation of how ongoing authorized activities will not adversely affect the area proposed to be released. Upon confirmation by the agency that the area of concern is releasable for unrestricted use, the licensee may apply for a license amendment, if required.