

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
AGENDA ITEM REQUEST
for Proposed Rulemaking

AGENDA REQUESTED: June 18, 2013

DATE OF REQUEST: May 30, 2013

INDIVIDUAL TO CONTACT REGARDING CHANGES TO THIS REQUEST, IF NEEDED: Charlotte Horn, (512) 239-0779

CAPTION: Docket No. 2013-0711-RUL. Consideration for publication of proposed amended Section 336.1115 of 30 TAC Chapter 336, Radioactive Substance Rules.

The proposed rulemaking would amend requirements for the release for unrestricted use of outdoor areas at source material recovery sites or by-product disposal sites. The proposed rulemaking would also remove existing language in Section 336.1115(e) to eliminate the uranium soil concentration standard, leaving a radium soil concentration limit coupled with the radium benchmark dose approach method for the release of outdoor areas. (Tony Gonzalez, Don Redmond) (Rule Project No. 2013-029-336-WS)

Brent Wade

Deputy Director

Charles Maguire

Division Director

Charlotte Horn

Agenda Coordinator

Copy to CCC Secretary? NO

Texas Commission on Environmental Quality

Interoffice Memorandum

To: Commissioners

Date: May 30, 2013

Thru: Bridget C. Bohac, Chief Clerk
Zak Covar, Executive Director

From: Brent Wade, Deputy Director
Office of Waste

Docket No.: 2013-0711-RUL

Subject: Commission Approval for Proposed Rulemaking
Chapter 336, Radioactive Substance Rules
Uranium Soil Concentration Standard
Rule Project No. 2013-029-336-WS

Background and reason(s) for the rulemaking:

In response to a petition for rulemaking, the executive director recommends 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 petition for Rulemaking on behalf of Uranium Energy Corp. (UEC). In their petition, Barrett & Associates requested that the commission amend 30 TAC §336.1115 to remove subsection (e)(3), which would remove the redundancy in uranium in soil concentration limits and conform the rule to the federal requirements. At the TCEQ's agenda on April 10, 2013, the commission approved the petition for rulemaking (Project No. 2013-021-PET-NR) and directed staff to initiate rulemaking.

As requested in the petition, the commission proposes to remove §336.1115(e)(3), the limits for the uranium concentration in soil. The commission also proposes, in response to the removal of subsection (e)(3) to amend subsection (e)(4) to compensate for the removal of subsection (e)(3) by effectively limiting uranium concentration limits to limits specified in 10 Code of Federal Regulations (CFR) Part 40 Appendix A, Criterion 6(6).

In considering the petition, staff reviewed the current rule 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.

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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. 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. The dose-based approach was added in the rules 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 proposes this rulemaking to remove the uranium concentration requirement to be consistent with the applicable federal requirements.

Scope of the rulemaking:

A.) Summary of what the rulemaking will do:

This rulemaking will amend §336.1115(e) uranium limits for outdoor areas to be considered suitable for release to unrestricted use. Specifically, it will amend the uranium in soil concentration limit so that uranium and all related radioactive concentrations in soil will be limited by the Radium Benchmark Dose Approach as specified in NUREG-1620 Appendix H. Use of the benchmark method will limit uranium soil concentrations in relation to each site's radium soil concentrations and will serve to limit public dose to levels no greater than that calculated by the radium benchmark method for that site.

B.) Scope required by federal regulations or state statutes:

The proposed rulemaking will make the TCEQ's decommissioning standards compatible with the applicable federal requirements in 10 CFR Part 40, Appendix A, Criterion 6(6).

C.) Additional staff recommendations that are not required by federal rule or state statute:

There are no additional staff recommendations.

Statutory authority:

The amendment is proposed 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

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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 proposed 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 proposed amendment implements 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.

Effect on the:

A.) Regulated community: The proposed rulemaking will clear up conflicting language in the current rule about the uranium concentration in soil and amend the standards for release of site to unrestricted use to meet federal standards. The Texas uranium mining industry will now have to adhere to site release standards and meet the same clean-up criteria as sites regulated by the NRC.

B.) Public: The proposed rulemaking will limit the effective dose equivalent potentially received by the general public at a decommissioned site to a level no greater than that calculated using the radium benchmark method for that site.

C.) Agency programs: The proposed rulemaking will have no impact on agency programs.

Stakeholder meetings:

No stakeholder meetings were held for this rulemaking project.

Potential controversial concerns and legislative interest:

The proposed rulemaking would remove the uranium concentration limits currently in place and replace it with a dose based approach for limiting uranium and other radionuclides relative to the radium concentration in soil. In certain circumstances this has the potential to allow uranium soil concentrations greater than the current 30 picocuries per gram (pCi/g) limit. Since the rulemaking would change the uranium concentration limit relative to the radium concentration, a low radium concentration in soil could allow uranium concentration to exceed 30 pCi/g. Alternatively, if there is already a high radium concentration in soil, final uranium soil concentration allowed could be less than 30 pCi/g. While it may leave an increased uranium concentration in soil, the

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rule change will serve to limit the effective dose equivalent the public may receive to a dose no greater than that calculated by the radium benchmark dose method for that site.

Will this rulemaking affect any current policies or require development of new policies?

This rulemaking will not affect any current policies or require development of new policies.

What are the consequences if this rulemaking does not go forward? Are there alternatives to rulemaking?

The current standard in §336.1115(e) specifies a uranium concentration in soil limit of 30 pCi/g up to six inches below the surface. It also specifies a reference to using the Radium Benchmark Dose approach with an allowable effective dose equivalent of up to 100 mRem per year under certain conditions (Rem is the special unit of absorbed dose expressed as a dose equivalent). The 100 mRem dose equivalent as currently expressed in the regulations is related to the NRC guidance on the radium benchmark method in which doses that exceed 100 mRem/yr would require approval after consideration of the recommendation of staff, and is not a dose limit in the ordinary sense.

The proposed rulemaking removes the conflict of specifying an absolute uranium soil limit by deriving a uranium soil limit dependent on the Radium Benchmark dose approach calculation. The Radium Benchmark dose approach results in a dose that is limited by the concentration of radium (and other radionuclides) in the soil and the physical and chemical characteristics of the site being examined.

If the rulemaking does not go forward there would remain a conflict in the rule for uranium concentration in soil different from the uranium soil concentration derived from the NRC prescribed Radium Benchmark Dose method, which potentially puts Texas in violation of the requirements for agreement state regulation of by-product material as per 10 CFR §150.31(2): "Compliance with standards which shall be adopted by the Agreement State for the protection of the public health, safety, and the environment from hazards associated with such material which are equivalent, to the extent practicable, or more stringent than, standards in 10 CFR Part 40, Appendix A adopted and enforced by the Commission for the same purposes, including requirements and standards subsequently promulgated by the Commission and the Administrator of the Environmental Protection Agency pursuant to the Uranium Mill Tailing Radiation Control Act of 1978."

Key points in the proposal rulemaking schedule:

Anticipated proposal date: June 18, 2013

Anticipated *Texas Register* publication date: July 5, 2013

Public hearing date (if any): None.

Public comment period: July 5 - August 5, 2013

Anticipated adoption date: November 6, 2013

Agency contacts:

Tony Gonzalez, Rule Project Manager, 239-6471, Radioactive Materials Division
Don Redmond, Staff Attorney, 239-0612
Charlotte Horn, Texas Register Coordinator, 239-0779

Attachments

Petition

Order Adopting Petition

cc: Chief Clerk, 2 copies
Executive Director's Office
Anne Idsal
Curtis Seaton
Tucker Royall
Office of General Counsel
Tony Gonzalez
Charlotte Horn

The Texas Commission on Environmental Quality (TCEQ, agency, commission) proposes to amend §336.1115.

Background and Summary of the Factual Basis for the Proposed Rule

In response to a petition for rulemaking, the commission proposes 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 proposes to amend §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 proposes the rule to remove the uranium concentration requirement to be consistent with the applicable federal requirements.

Section Discussion

The commission proposes administrative changes throughout the proposed 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 proposes to amend §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 proposes to delete the language in paragraph (4) and renumber the existing requirement for the radium benchmark dose approach as paragraph (3). The commission proposes 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."

Fiscal Note: Costs to State and Local Government

Nina Chamness, Analyst, Strategic Planning and Assessment, has determined that, for the first five-year period the proposed rule is in effect, no significant fiscal implications are anticipated for the agency. Other units of state or local government would not experience any fiscal impact as a result of the administration or enforcement of the proposed rule. The proposed rule affects business entities that are licensed to receive, possess, use, or dispose of radioactive material in source material recovery facilities and other operations that accept radioactive by-product material for disposal.

Specifically, the rule would amend the Texas' existing decommissioning standards that apply to radioactive source material sites and by-product disposal sites so that they conform to federal requirements of the NRC. The proposed rule removes a state specific standard for the concentration of uranium in soil and amends state rules to establish a risk based Radium Benchmark Dose Approach for determining the acceptable concentration of radionuclides (including uranium) in soil that the public could be exposed to from a decommissioned site.

The proposed rule would not have a significant fiscal impact on the agency. Units of

local government are not expected to experience fiscal impacts since they do not typically decommission sites with radionuclides.

Public Benefits and Costs

Ms. Chamness also determined that for each year of the first five years the proposed rule is in effect, the public benefit anticipated from the changes seen in the proposed rule will be conformance to NRC decommissioning standards that are protective of human health and safety and the environment.

The proposed rule would not have a significant fiscal impact on individuals.

There are ten businesses that own or operate 17 facilities that could be affected by the proposed rule. These facilities are located in Brooks, Duval, Kleberg, Live Oak, Karnes, and Andrews Counties. Four have been closed and are awaiting release for unrestricted use; nine are pre-operational or operational in-situ uranium recovery and processing facilities; three are by-product material impoundments closed to new radioactive waste; and one is an operational by-product material disposal facility. The proposed rule would only apply when a facility is in the decommissioning stage which occurs after operations have ceased. The proposed rule would not change the amount of sampling required, and sampling costs are expected to remain unchanged from that required by current rules. The proposed rule could generate cost savings or cost increases for waste

disposal charges depending on the amount and characteristics of the different radionuclides found in the soil that must be removed using the NRC risk based Radium Benchmark Dose Approach. However, the removal of a state specific standard for uranium that conflicts with the federal decommissioning standards is expected to reduce costs for most businesses that remediate sites that have uranium contamination.

The proposed rule is in response to a petition to make the state's decommissioning standards conform to federal requirements. The UEC has finished decommissioning a facility where uranium is present and is awaiting agency confirmation that the site meets release limits that comply with federal risk based standards. By removing the existing state standard for uranium, UEC would not be required to remove additional soil and pay for additional transportation and waste disposal to meet the separate uranium standard. Estimated savings might be as much as \$9,000 per truckload of waste.

Small Business and Micro-Business Assessment

No adverse fiscal implications are anticipated for small or micro-businesses as a result of the proposed rule, since a small business would not be required to remediate sites for a separate state standard for uranium that contradicts federal standards. Small businesses could expect to see the same types of cost decreases for waste disposal of uranium or by-product material as that of a large business. There may be as many as

three small businesses that are licensed to decommission sites with radioactive material.

Small Business Regulatory Flexibility Analysis

The commission has reviewed this proposed rulemaking and determined that a small business regulatory flexibility analysis is not required because the proposed rule does not adversely affect a small or micro-business in a material way for the first five years that the proposed rule is in effect.

Local Employment Impact Statement

The commission has reviewed this proposed rulemaking and determined that a local employment impact statement is not required because the proposed rule does not adversely affect a local economy in a material way for the first five years that the proposed rule is in effect.

Draft Regulatory Impact Analysis Determination

The commission reviewed the proposed 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 proposed 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 proposed 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 proposed rulemaking 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 proposed rulemaking 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 proposed rule does not exceed a standard set by federal law. The proposed rulemaking 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 proposed 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 proposed 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 proposed 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 invites public comment of the draft regulatory impact analysis determination.

Written comments on the draft regulatory impact analysis determination may be submitted to the contact person at the address listed under the Submittal of Comments section of this preamble.

Takings Impact Assessment

The commission evaluated the proposed rule and performed a preliminary assessment of whether the proposed 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 proposed rulemaking will provide consistency with federal regulations.

Nevertheless, the commission further evaluated the proposed 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 proposed 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 proposed to be consistent with the NRC's standards provided in 10 CFR Part 40, Appendix A, Criterion 6(6). The proposed 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 proposed rule that would constitute a taking of real property.

Promulgation and enforcement of the proposed rule would be neither a statutory nor a constitutional taking of private real property. The proposed 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 proposed 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 proposed 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 proposed rule is not subject to the Texas Coastal Management Program.

Written comments on the consistency of this rulemaking may be submitted to the contact person at the address listed under the Submittal of Comments section of this preamble.

Submittal of Comments

Written comments may be submitted to Charlotte Horn, MC 205, Office of Legal Services, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087, or faxed to (512) 239-4808. Electronic comments may be submitted at: <http://www5.tceq.texas.gov/rules/ecomments/>. File size restrictions may apply to comments being submitted via the eComments system. All comments should reference Rule Project Number 2013-029-336-OW. The comment period closes August 5, 2013. Copies of the proposed rulemaking can be obtained from the commission's Web site at http://www.tceq.texas.gov/nav/rules/propose_adopt.html. For further information, please contact Tony Gonzalez, (512) 239-6471.

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

§336.1115

Statutory Authority

The amendment is proposed 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 proposed 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 implements 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 [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 (m²), 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) [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) The concentration of natural uranium in soil, with no daughters present, averaged over any 100 m², may not exceed the background level by more than:]

[(A) 30 pCi/g (1.11 Bq/g), averaged over the top 15 cm of soil below the surface; and]

[(B) 150 pCi/g (5.55 Bq/g), average concentration at depths greater than 15 centimeters below the surface; and]

[(4)no individual member of the public will receive an effective dose equivalent in excess of 100 mrem (1 mSv) per year as calculated by the methodology provided in NUREG-1620, Appendix H - "Guidance to the U.S. Nuclear Regulatory Commission Staff on the Radium Dose Approach."]

(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 m² 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 [Security] 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 microroentgen per hour ($\mu\text{R/hr}$) (millisieverts per hour (mSv/hr)) at 1 meter (m) from surfaces;

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

(iii) μCi (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 [United States Nuclear Regulatory Commission (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.



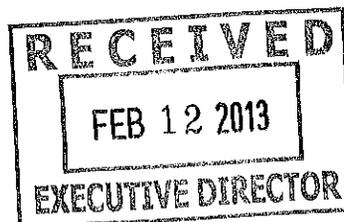
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Phone: 512.600.3800 Fax: 512.600.3899

February 11, 2013

Mr. Zak Covar
Executive Director
Texas Commission on Environmental Quality
PO Box 13087
Austin, Texas 78711-3087



Re: Petition for Rulemaking pursuant to Section 401.051, *Health and Safety Code*

Dear Mr. Covar:

This rulemaking petition is submitted on behalf of Uranium Energy Corp. (UEC), 500 North Shoreline, Suite 800N, Corpus Christi, Texas 78401 pursuant to, *inter alia*, Section 401.051 *Health and Safety Code*. UEC requests that the Texas Commission on Environmental Quality (TCEQ) amend 30 TAC Section 336.1115(e) related to standards 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 in 336.1115(e).

BACKGROUND (30 TAC Section 20.15(a)(3)(A))

SB 1604, 80th Legislature, transferred jurisdiction for this program to the TCEQ. On January 30, 2008, the TCEQ adopted, among other rules, 30 TAC 336.1115(e). In adopting this rule, the TCEQ, responding to comment by the United States Nuclear Regulatory Commission (NRC), adopted 336.1115(e)(1-4) as follows:

(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 (m²), 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 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) The concentration of natural uranium in soil, with no daughters present, averaged over any 100 m², may not exceed the background level by more than:

(A) 30 pCi/g (1.11 Bq/g), averaged over the top 15 cm of soil below the surface; and

(B) 150 pCi/g (5.55 Bq/g), average concentration at depths greater than 15 centimeters below the surface; and

(4) no individual member of the public will receive an effective dose equivalent in excess of 100 mrem (1 mSv) per year as calculated by the methodology provided in NUREG-1620, Appendix H - "Guidance to the U.S. Nuclear Regulatory Commission Staff on the Radium Dose Approach." (emphasis added)

UEC believes that NRC's Radium Dose Approach (sometimes referred to as "Benchmark Dose Approach") is used as an alternative to set remedial standards for radionuclides (other than radium) in the soil. A strict reading of 30 TAC Section 336.1115(e) would currently require an applicant to meet the numeric criteria listed and the Radium Dose Approach before a site can be decommissioned.

To require both standards to be satisfied would render the Radium Dose Approach moot. The Radium Dose Approach is more akin to a Risk Based approach to clean up. That is, the Radium Dose Approach calculates cleanup levels based on actual dosage to a human.

More important, the uranium closure criteria in clause 336.1115(e)(3) is unnecessary because use of the dose / risk based Radium Benchmark Dose Approach per 30 TAC 336.1115(e)(4):

- o Includes calculations of site specific uranium concentrations;
- o Requires compliance to the unity rule; and
- o Ensures exposures of future residents will be less than the TCEQ and NRC fundamental public exposure criteria of 100 mrem/yr

As stated, the TCEQ adopted subsection 336.1115(e)(4) based on comment from NRC. UEC believes that this standard was intended to be an alternative to the numeric standards listed in 336.1115(e)(1-3). It is of note that The Radium Benchmark Dose approach {as required by 10 CFR 40, Appendix A, Criteria 6(6)} has been used for this purpose as part of the licensing process for the recent uranium recovery licenses issued by the NRC.

The Radium Benchmark Approach (NUREG 1620, Appendix H) includes use of the imbedded radium criteria (10 CFR 40, Appendix A, Criteria 6(6)) and 336.1115(e)(1)}. It is fully protective of human health and the environment without the need for quantitative uranium criteria that is not specific to site conditions and is not dose / risk based.

TEXT OF PROPOSED RULE (30 TAC Section 20.15(a)(3)(B))

UEC's suggestion is quite simple—omit subsection in 336.1115(e)(3). Thus, the amended rule would read as follows:

(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 (m²), 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 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; and

~~(3) The concentration of natural uranium in soil, with no daughters present, averaged over any 100 m², may not exceed the background level by more than:~~

~~(A) 30 pCi/g (1.11 Bq/g), averaged over the top 15 cm of soil below the surface; and~~

~~(B) 150 pCi/g (5.55 Bq/g), average concentration at depths greater than 15 centimeters below the surface; and~~

(4) (3) no individual member of the public will receive an effective dose equivalent in excess of 100 mrem (1 mSv) per year as calculated by the methodology provided in NUREG-1620, Appendix H - "Guidance to the U.S. Nuclear Regulatory Commission Staff on the Radium Dose Approach." (emphasis added)

STATUTORY AUTHORITY (30 TAC Section 20.15(a)(3)(C))

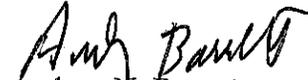
401.011, 401.051 and/or 401.104 *Health and Safety Code* and 5.103, *Water Code*, authorize this rulemaking.

INJURY OR INEQUITY FROM FAILURE TO ADOPT PROPOSALS (30 TAC Section 20.15(a)(3)(D))

Failure to adopt this proposal could result in inequity or injury to a license holder seeking to decommission a site. The injury or inequity is largely in the potential cost of decommissioning. As described above, the current rule would require, or at least could be interpreted to require, that a licensee meet both the Radium Benchmark Dose and specific numeric criteria for natural uranium. Having the dual and redundant requirements are expensive and unnecessary. As shown, the Benchmark Radium Dose approach is generally followed by states and is required by the NRC.

UEC appreciates the TCEQ's attention and consideration of this request. We are happy to meet with you or the proper staff at your convenience.

Very truly yours,


Andrew N. Barrett