

Texas Commission on Environmental Quality

Interoffice Memorandum

To: Commissioners

Date: October 4, 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 Rulemaking Adoption
Chapter 336, Radioactive Substance Rules
Uranium Soil Concentration Standard
Rule Project No. 2013-029-336-WS

Background and reason(s) for the rulemaking:

This rulemaking revises the decommissioning standards for source material recovery sites (uranium mining sites) or radioactive by-product disposal sites to be consistent with the requirements of the United States Nuclear Regulatory Commission. 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. 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 Radium Benchmark Dose approach is an alternative method to meeting the soil criteria specified in §336.1115(e). After considering the petition at the TCEQ's agenda on April 10, 2013, the commission approved the initiation of a rulemaking based on this petition.

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 Nuclear Regulatory Commission (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 in soil was not removed from the rule.

In review of the petition, the uranium concentration in soil standard retained in the rule was found to be redundant to and ultimately in conflict with the Radium Benchmark Dose

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approach. The adopted rule corrects the conflict and redundancy in the rule by inserting the appropriate equivalent federal standards.

Scope of the rulemaking:

A.) Summary of what the rulemaking will do:

The rulemaking amends §336.1115(e) by deleting the existing language in paragraph (3) that established a limit for the concentration of natural uranium in soil. The rulemaking will 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 will be calculated by the methodology provided in NUREG-1620, Appendix H- "Guidance to the U.S. Nuclear Regulatory Commission Staff on Radium Dose Approach."

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

None.

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

None.

Statutory authority:

The amendments are adopted under the Texas Radiation Control Act, Chapter 401 of the Texas Health and Safety Code (THSC); 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 amendments are 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 water code and other laws of the state.

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

Effect on the:

A.) Regulated community:

The rulemaking was initiated in response to a petition filed on behalf of Uranium Energy Corp, a uranium mining and processing company and is consistent with their request that the rule reflect current equivalent federal standards. The adopted rule clears up conflicting language in the current rule regarding uranium concentration in soil and amends the standards for release of sites to unrestricted use to equivalent federal standards. For sites to be released for unrestricted use would be determined by the Radium Benchmark Dose approach which would apply a relative uranium concentration in soil limit based on the radium concentration in soil. The uranium mining industry in Texas will now be under the same clean-up criteria as sites regulated by the NRC.

Fiscal impacts of the adopted rule on the regulated community would be negligible.

B.) Public:

The rulemaking would result in the continued protection of the environment and public health and safety by evaluating risk through a dose based approach which aligns with NRC site release standards. Compared to the current rule, the adopted rulemaking effectively reduces the allowable effective dose equivalent to the general public at sites released for unrestricted use.

The adopted rule would not have significant fiscal impact on individuals.

C.) Agency programs:

No changes to agency programs as a result of the rulemaking.

Stakeholder meetings:

There were no stakeholder meetings held associated with this rulemaking.

Public comment:

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The public comment period closed on August 5, 2013. The commission received two comments in response to the rulemaking. The first comment was received from the Uranium Committee of the Texas Mining & Reclamation Association (TMRA-UC). The TMRA-UC comment is in support of the adopted rule. The second comment was submitted by the NRC. The NRC's comment letter did not address the proposed revision to the decommissioning standards in §336.1115(e). The NRC's comment addressed a 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. 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 the pending rulemaking and cannot be addressed at this time.

Significant changes from proposal:

No changes to the proposed rulemaking were made.

Potential controversial concerns and legislative interest:

No concerns or legislative interest have been raised in response to the rulemaking.

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

No current policies will be affected and the development of new policies will not be required.

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 picocuries per gram (pCi/g) up to six inches below the surface. It also specifies a reference to using the Radium Benchmark Dose approach with an allowable total effective dose equivalent of 100 millirem/year (Rem is the special unit of absorbed dose expressed as a dose equivalent). This dose equivalent, when applied, has the potential to give a conflicting allowable uranium concentration in soil limit of 1500 pCi/g.

The adopted rule 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 the conflict allowing for uranium concentration in soil limit in excess of the NRC prescribed Radium Benchmark

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Dose approach, 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 appendix A of 10 CFR part 40 of this chapter 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 adoption rulemaking schedule:

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

Anticipated *Texas Register* adoption publication date: November 8, 2013

Anticipated effective date: November 13, 2013

Six-month *Texas Register* filing deadline: January 5, 2014

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