BARRETT
& ASSOCIATES, PLLC

3006 Bee Caves Road, Suite D-310, Austin, TX 78746
Phone: 512.600.3800 Fax: 512.600.3899
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RECEIVED
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EXECUTIVE DIRECTOR

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):

- Includes calculations of site specific uranium concentrations;
- Requires compliance to the unity rule; and
- 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