January 21, 2016

Ms. Dawn Kolkman
Permitting Manager
Uranerz Energy Corporation (an Energy Fuels Company)
P.O. Box 50850
1701 East E Street
Casper, WY 82605-0850

SUBJECT: URANERZ ENERGY CORPORATION, NICHOLS RANCH IN-SITU RECOVERY (ISR) PROJECT, SOURCE MATERIALS LICENSE SUA-1597, VERIFICATION OF TECHNICAL BASIS FOR SURFACE CONTAMINATION LIMITS (LICENSE CONDITION 10.14) (TAC NO. L00797)

Dear Ms. Kolkman:

By letter dated October 29, 2015, Uranerz Energy Corporation (Uranerz) provided information to the U.S. Nuclear Regulatory Commission (NRC) staff in response to a requirement in the second paragraph of License Condition (LC) 10.14 of Materials License SUA-1597 (NRC Agencywide Documents Access and Management System (ADAMS) Accession No. ML15314A791). The full text of LC 10.14 states (ADAMS Accession No. ML15215A416):

10.14 The licensee shall conduct radiological characterization of airborne samples for natural U, Th-230, Ra-226, Po-210, and Pb-210 for each restricted area air particulate sampling location at a frequency of once every 6 months for the first 2 years, and annually thereafter to ensure compliance with 10 CFR 20.1204(g). The licensee shall also evaluate changes to plant operations to determine if more frequent radionuclide analyses are required for compliance with 10 CFR 20.1204(g).

The licensee shall determine if surface contamination limits are warranted for Th-230, Ra-226, Po-210, and Pb-210 identified in airborne sample analyses. Within 1 year of commencement of operations, the licensee shall provide for NRC review and written verification a technical basis for surface contamination limits for the applicable radionuclides of concern.

By letter dated November 17, 2015, NRC staff provided comments on Uranerz's October 29, 2015, submittal (ADAMS Accession No. ML15309A299). By letter dated December 7, 2015, Uranerz revised its previous submittal (ADAMS Accession No. ML15351A493).

In its December 7, 2015, submittal, Uranerz stated that only natural uranium and lead-210 exceeded 1 percent of their respective most restrictive effluent concentrations in 10 CFR 20, Appendix B, Table 2, Column 1. Uranerz also stated that the lack of elevated concentrations in air of all measured radionuclides, including natural uranium, thorium-230, radium-226, and polonium-210, support the continued use of the surface contamination limits for uranium and daughters listed in NRC Regulatory Guide 8.30, Table 2 (ADAMS Accession No. ML021260524).

The NRC staff evaluated the data provided by Uranerz to determine whether airborne concentrations of either thorium-230 or radium-226 would warrant revision of surface contamination limits to take into account the possible presence on plant surfaces of a mixture of natural uranium, thorium-230, and/or radium-226. The NRC staff focused on thorium-230 or radium-226 because these radionuclides have different surface contamination limits than those for natural uranium in Table 1 of "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material" (Guidelines) (ADAMS Accession No. ML003745526). The Guidelines are incorporated in LC 9.6 of Materials License SUA-1597. The NRC staff verified that the net concentrations of thorium-230 and radium-226 in air (above background) measured by Uranerz would not result in deposition rates of these radionuclides high enough to warrant a revision of surface contamination limits.

This letter provides NRC's staff's review and written verification of Uranerz's December 7, 2015, technical basis for Uranerz to continue using the surface contamination limits for natural uranium contained in Table 1 of the Guidelines, which are also the limits contained in Table 2 of Regulatory Guide 8.30. The removal of the second paragraph of LC 10.14 will be an administrative licensing action in a future license amendment.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's ADAMS. ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html.

If you have any questions regarding this letter, please contact me, either by telephone at (301) 415-7777, or by e-mail at Ron.Linton@nrc.gov.

Sincerely,

/RA/

Ron C. Linton, Project Manager
Uranium Recovery Licensing Branch
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket No. 040-09067
License No. SUA-1597
Closes TAC L00797

cc: Mr. Dorran Larner, WDEQ

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cc: Mr. Dorran Larner, WDEQ

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