

April 18, 2016

William P. Goranson, P.E.
Executive Vice President ISR Operations
Uranerz Energy Corporation
1701 East "E" Street
Casper, WY 82605

SUBJECT: URANERZ ENERGY CORPORATION, NICHOLS RANCH PROJECT, SOURCE MATERIALS LICENSE SUA-1597, REQUEST FOR ADDITIONAL INFORMATION, ANNUAL FINANCIAL ASSURANCE ESTIMATE ADJUSTMENT (TAC NO. L00758)

Dear Mr. Goranson:

The U.S. Nuclear Regulatory Commission (NRC) received the annual financial assurance update for the Uranerz Energy Corporation (Uranerz) Nichols Ranch Project dated December 18, 2015. The report was made publicly available in the NRC's Agencywide Documents Access and Management System (ADAMS) as Accession No. ML16020A520. The NRC staff evaluated the contents of the cost estimate according to 10 CFR Part 40, Appendix A.

The NRC staff requires additional information from Uranerz in order to complete the surety review. The request for additional information is provided in the enclosure. Within 30 days of the date of this letter, please either provide the information requested or inform us of the date you expect to provide the information. We are available to meet with you to discuss the requested information.

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 ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

P. Goranson

- 2 -

If you have any questions concerning 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

Enclosure:
Request for Additional Information

cc: Mike Ploughe, P.G. (WDEQ)

P. Goranson

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Request for Additional Information

cc: Mike Ploughe, P.G. (WDEQ)

DISTRIBUTION: L. Gersey, RI-V

ADAMS Accession No.: **ML16099A067** ***concurring via e-mail**

OFFICE	NMSS:PM	NMSS:LA	NMSS:PM	NMSS:BC(A)	NMSS:PM
NAME	R. Linton	S. Achten*	R. Augustus*	D. Mandeville	R. Linton
DATE	4/8/16	4/8/16	4/14/16	4/15/16	4/18/16

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Request for Additional Information (RAI)
Uranerz Energy Corporation, 2015-2016 Financial Assurance (Surety) Estimate
Nichols Ranch In-Situ Recovery Project

RAI (1)

Description of Deficiency

Criterion 9 of 10 CFR Part 40, Appendix A states that each cost estimate must contain "...identification and justification for using the key assumptions contained in the DCE [Decommissioning Cost Estimate]." Furthermore, Appendix C of NUREG-1569 states that the "...licensee should provide supporting information on the basis for selection of the unit cost figures used in estimates."

The DCE does not provide sufficient supporting information or adequate justification for all key assumptions and unit costs. For example, there is no basis for cost assumptions related to power in the following sections:

- Groundwater (GW) Sweep
 - *Plant and Office*
 - *Wellfield*

- Reverse Osmosis (RO)
 - *Plant and Office*
 - *Wellfield*

Additionally, there are a number of sections in which costs were based on "ISR Facility Experience" in 2002-2003, plus adjustment for Consumer Price Index (CPI). The baseline being used for these costs is over 12 plus years old. The NRC staff management recommends re-baselining such costs every 3 years.

Furthermore, the cost estimate uses standardized rates from Wyoming's Department of Environmental Quality (WDEQ), Land Quality Division (LQD) Guideline 12 from 2013, adjusted for CPI, instead of using the latest updated rates. For some costs, the submission states that "[p]rices are based on 2013 Building Construction Prevailing Wages, WDEQ-LQD Guideline 12 (updated 3/25/14)." However, the 2015 Building Construction Prevailing Wages prices were last updated in February 2015.

Basis for Request

As currently presented, the surety estimate does not include a basis or adequate justification for all unit costs used in the cost estimate (10 CFR Part 40, Appendix A, Criterion 9(b)(3); Appendix C of NUREG-1569).

Formulation of RAI

RAI #1: Provide additional information (i.e., most recent updated rates from WDEQ-LQD Guideline 12, or further explanation of how the unit costs and key assumptions were derived)

Enclosure

in the DCE to justify reliance on all of the unit costs used in the surety estimate. To ensure adequate funding for decommissioning, the NRC staff recommends that the NRC request that the licensee revise or justify the basis for all unit costs.

RAI (2)

Description of Deficiency

The Nichols Ranch License application states in Section 6.1.3.2 that, "After the treatment the swept water is disposed of in an approved manner such as injection into a deep disposal well." Worksheet 1, No. I shows 62,562,062 gallons for treatment in the GW Sweep phase, which would equate to the same amount to be disposed through the deep disposal wells since, "...swept water is disposed of in an approved manner such as injection into a deep disposal well." At a 150 gallons per minute (gpm) disposal rate as discussed in the estimate summary, it appears as if the maximum disposal rate would be 216,000 gallons per day, which would take approximately 290 days to complete disposal of 62,562,062 gallons for treatment.

The same concern will apply to the number of days of treatment for Nichols #2.

Technical Basis

As currently presented, the surety estimate does not include a basis or adequate detailed cost estimate for decontamination, decommissioning, and reclamation, in an amount reflecting the cost of an independent contractor to perform the decontamination, decommissioning and reclamation activities (10 CFR Part 40, Appendix A, Criterion 9(b)(1)(i); Appendix C of NUREG-1569).

Formulation of RAI

RAI (2)a: Provide a basis for the reduction from 467 days of treatment to 58 days of treatment for GW Sweep at Nichols #1 on Worksheet 1, No. I and the corresponding TOTAL PLANT and OFFICE COST.

RAI (2)b: Provide a basis for 12 days of treatment for GW Sweep at Nichols #2 on Worksheet 1, No. I and the corresponding TOTAL PLANT and OFFICE COST.

RAI (3)

Description of Deficiency

Worksheet 1, No. III shows in the notes, "Total RO Gallons + Total GW Sweep Gallons divided by 20 percent (Brine flow to disposal)." However, this is inconsistent with the GW sweep phase in the Nichols Ranch License application, Section 6.1.3.2, that states, "...swept water is disposed of in an approved manner such as injection into a deep disposal well." It appears the volume totals for disposal may be underestimated.

Technical Basis

As currently presented, the surety estimate does not include a basis or adequate detailed cost estimate for decontamination, decommissioning, and reclamation, in an amount reflecting the cost of an independent contractor to perform the decontamination, decommissioning and reclamation activities (10 CFR Part 40, Appendix A, Criterion 9(b)(1)(i); Appendix C of NUREG-1569).

Formulation of RAI

RAI #3: Clarify the total gallons to be disposed of in the disposal wells from both the GW Sweep phase and the RO phase.

RAI (4)

Description of Deficiency

Section 6.1.3.4 Restoration Monitoring, of the application states, "During restoration, the solution returning from the wellfield will be sampled on a daily basis to track how restoration is progressing." The NRC staff cannot identify in the Worksheets for GW Restoration any costs related to monitoring for the solution that will be sampled on a daily basis to track how restoration is progressing.

Technical Basis

As currently presented, the surety estimate does not include a basis or adequate detailed cost estimate for decontamination, decommissioning, and reclamation, in an amount reflecting the cost of an independent contractor to perform the decontamination, decommissioning and reclamation activities (10 CFR Part 40, Appendix A, Criterion 9(b)(1)(i); Appendix C of NUREG-1569).

Formulation of RAI

RAI #4: Provide costs for daily sampling of solution returning from the wellfield as discussed in Application Section 6.1.3.4.

RAI (5)

Description of Deficiency

Worksheet 1, Nos. IV and VI GW RESTORATION:

- 1.35 years of Labor costs are shown under VI Labor, "Time Required - Years." However, GW Restoration is shown as 2 full years (2nd half 2019, all of 2020 and 1st half 2021) for Production Area (PA) #1 in the schedule provided by Uranerz dated February

4, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16064A245).

- There are no labor costs associated with Nichols #2. However, GW Restoration is shown as 2 full years (2022 and 2023) for PA #2 in the schedule provided by Uranerz dated February 4, 2016 (ADAMS Accession No. ML16064A245). The NRC staff notes that the 2 years for PA #1 and PA #2 do not overlap such that it appears a total of 4 years minimum should be calculated for labor costs.
- Additionally, the RESTORATION MONITORING costs under IV appear to be calculated incorrectly. $68 \times 7 \times 30 = \$14,280$, not $\$13,631$, as stated.

Technical Basis

As currently presented, the surety estimate does not include a basis or adequate detailed cost estimate for decontamination, decommissioning, and reclamation, in an amount reflecting the cost of an independent contractor to perform the decontamination, decommissioning and reclamation activities (10 CFR Part 40, Appendix A, Criterion 9(b)(1)(i); Appendix C of NUREG-1569).

Formulation of RAI

RAI #5a: Provide an explanation for the years of labor costs for PA #1 in the surety estimate or update the worksheets to provide accurate financial assurance.

RAI #5b: Provide an explanation for the years of labor costs for PA #2 in the surety estimate or update the worksheets to provide accurate financial assurance.

RAI #5c: Verify the restoration monitoring costs are accurate in the surety estimate.

RAI (6)

Description of Deficiency

Worksheet 5, Nos. I, II, III, and IV do not show a separate column for costs related to Nichols PA #2, although two additional header houses and associated wells have been reflected on other worksheets.

Technical Basis

As currently presented, the surety estimate does not include a basis or adequate detailed cost estimate for decontamination, decommissioning, and reclamation, in an amount reflecting the cost of an independent contractor to perform the decontamination, decommissioning and reclamation activities (10 CFR Part 40, Appendix A, Criterion 9(b)(1)(i); Appendix C of NUREG-1569).

Formulation of RAI

RAI #6: Provide financial assurance estimates to account for wellfield equipment, removal and disposal costs for PA #2.

GENERAL COMMENTS

GC #1: Uranerz has stated that the WDEQ has permitted the disposal rate of 150 gpm. The permitted disposal rate is an acceptable value for determining cost related to GW disposal in the restoration phases. However, the licensee will need to demonstrate that the deep disposal wells can perform at the rate of 150 gpm in the future. If the well cannot perform at the 150 gpm disposal rate, the financial assurance estimate will need to be increased to account for additional time to dispose of fluids as a slower rate.

GC #2: It appears that PA #1 and PA #2 costs were lumped and shown together in one column labeled PA #1 in Worksheet Nos. I, VII, VIII, and Summary (page G-6).