

November 6, 2008

Mr. Michael Thomas
Environmental, Safety, and Health Manager
Uranerz Energy Corporation
1701 East "E" Street
P.O. Box 50850
Casper, WY 82605-0850

SUBJECT: SUMMARY OF OCTOBER 22, 2008 MEETING - URANERZ ENERGY CORPORATION

Dear Mr. Thomas:

A summary of the meeting between U. S. Nuclear Regulatory Commission (NRC) staff and representatives of Uranerz Energy Corp. (Uranerz) on October 22, 2008, is enclosed.

If you have any questions regarding this letter or the enclosed meeting summary, please contact me at (301) 415-7777, or by email at ron.linton@nrc.gov.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders," 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 Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Sincerely,

/RA/

Ron C. Linton, Project Manager
Uranium Recovery Licensing Branch
Decommissioning and Uranium Recovery
Licensing Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Docket No.: 040-09067

Enclosure: Meeting Summary

cc: G. Mooney (WDEQ)

Mr. Michael Thomas
Environmental, Safety, and Health Manager
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DISTRIBUTION:

JWhitten/RIV DOrlando Meeting attendees

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Office	DWMEP	DWMEP	DWMEP	DWMEP	
Name	RLinton	BGarrett	S Cohen	RLinton	
Date	10/30/08	11/04/08	11/06/08	11/06/08	/ /

OFFICIAL RECORD COPY

MEETING REPORT

DATE: October 22, 2008

TIME: 10:00 a.m. – 12:00 noon

PLACE: U.S. Nuclear Regulatory Commission
Two White Flint North, Rockville, Maryland
Room T8C5c

PURPOSE: Discuss Uranerz Energy Corporation's Nichols Ranch Project License Application and NRC's Request for Additional Information

ATTENDEES: SEE ATTACHED ATTENDEE LIST

BACKGROUND:

The purpose of this meeting was for Uranerz Energy Corporation (UEC) to discuss its Nichols Ranch *in-situ* leach (ISL) facility license application and the U.S. Nuclear Regulatory Commission's (NRC's) request for additional information (RAI). The application was accepted on April 14, 2008, for detailed review by NRC staff. NRC requested additional information on September 11, 2008.

DISCUSSION:

The meeting and teleconference started at 10:00 a.m. Eastern time in T8C5c. An opening statement was presented by Ron Linton, NRC Project Manager.

NRC staff and the applicant discussed several RAIs for which UEC had provided pre-meeting information on the need for additional explanation (see ADAMS package ML082950020). The issues and the results of the discussion are as follows:

- 1. RAI regarding listing and location of potential sources of emissions or releases, Section 3.2** – UEC asked, "Is the NRC asking for ANY potential source of emission/release, or only potential radiological releases? A similar question for locating potential sources on the plant layout figure – is this for any potential chemical/process release or only potential radiological releases?" NRC staff responded that since our authority is for radiological safety, primarily we are looking for potential sources of radiological releases. However, if there are other potential non-radiological releases that could impact or affect radiological safety, these also need to be listed and located. Examples of this situation were discussed. UEC indicated they understood and were clear on the path forward for providing a response.
- 2. RAI regarding the descriptions of the process and wellfield instrumentation and controls and radiation safety monitoring instrumentation and their need to be more detailed and specific, including their minimum specifications and operating characteristics (alarms, interlocks, etc.), Section 3.3** - UEC asked, "Please clarify the detail of the request for minimum specifications, operating characteristics, alarms,

and interlocks. UEC has not yet identified the operating system for the programmable logic controllers, and thus has not specifically designed all of the controls, alarms and interlocks. In section 3.5 UEC committed to having instrumentation and controls listed in detail below in blue. Is the NRC asking for detailed electrical drawings with control schemes?” NRC staff responded that it recognized a commitment by UEC to provide all instrumentation and controls that will meet the details discussed in the Standard Review Plan Section 3.3. However, more details on the actual specifications and operating characteristics are needed. UEC responded that they will provide this information when fully available, and NRC staff can review and verify during pre-operational inspection. UEC indicated they understood and were clear on the path forward for providing a response.

3. **RAI regarding organizational integration among groups below senior management, Section 5.1** – UEC asked, “Discuss NRC expectations of license application verse Uranerz staffing plan below ‘Mine Superintendent’ and construction vs. management.” NRC staff indicated that primarily what is needed here is an explanation of what the Mine Superintendent and the Production Manager do to ensure that the operations, maintenance, and construction staff interact to effectively carry out the radiological and environmental safety programs. UEC indicated they understood and were clear on the path forward for providing a response.
4. **RAI issue regarding particulate environmental air sampling and effluent monitoring** -UEC asked why they would they need to do air particulate environmental sampling since the emissions from the vacuum dryer is zero (or very low). UEC also pointed out that they will be doing radon and TLD monitoring around the site boundary. NRC staff stated that conducting an air particulate environmental sampling is consistent with Regulatory Guide 4.14, and further stated that the purpose of this particular section of the regulatory guide (air particulate environmental sampling) was to ensure that the effluent controls are effective and demonstrate dose or concentration compliance with the regulations. NRC staff further stated that air particulate environmental monitoring ensures that the effluents, not only from the vacuum dryer area is zero (or very low), but also ensures that the effluents from the site are within compliance with the regulations.
5. **RAI issue regarding effluent monitoring for the Nichols/Hank project with respect to other ISL projects** - UEC asked how other applicants and licensees are conducting effluent monitoring. NRC staff stated that licensees will need to demonstrate compliance with the regulations in 10 CFR 20.1301 and 10 CFR 20.1302 by showing that they meet the dose limit to the nearest resident or concentration at the boundary of the unrestricted area, as well as ensure that the dose rate in the unrestricted area is less than 2 mrem per hour. This can be accomplished by either measurements or calculations. In addition to 10 CFR 20, licensees would have to show compliance with 10 CFR 40.65. Licensees will need to provide the quantity of the principal radionuclides released to unrestricted areas from effluents (in this particular case gaseous effluents) during a six month period. A follow-up question was raised about detection of particulate activity from in plant air particulate monitoring. NRC staff stated that gross alpha in-plant particulate air sampling data from Crow Butte Resources show that in-plant air results are a fraction of the DAC limits. This implied that uranium (and possibly other particulate radionuclides) are being detected in the plant environment during operations. UEC representatives asked the hypothetical question that if they did conduct monitoring and collected sufficient data to show that the results are zero (or below the limit of detection) over a period of time, can they present this information as a license amendment to reduce or eliminate monitoring?

NRC staff indicated that licensees can apply for a license amendment and the NRC will review the request.

6. **Question regarding MILDOS source terms (i.e., particulate)** - UEC representatives asked what other licensees have used for MILDOS source terms (i.e., particulate). NRC staff stated that the environmental air sampling and effluent monitoring issue are not unique to UEC. A participant raised a point about discussing this issue further with the other applicants at some later date. NRC acknowledged the point and will review it.
7. **RAI issue regarding permit area subwatershed drainage delineation and surface water sampling** – UEC displayed new draft maps showing subwatershed delineation within the two license areas and the location of surface water sampling points. Surface water sampling points are located at the outlet of the watershed to provide the cumulative impact of any changes in surface water quality from mining operations upstream. The inherent difficulty of obtaining water samples in ephemeral streams was discussed and UEC assured NRC every attempt would be made to collect samples. Three surface water samples were captured in June 2008.
8. **RAI issue regarding flooding of license area** – UEC displayed new draft maps showing regions of the license areas which will be flooded from a 25-year peak flow event. Cottonwood Creek would flood the very southern tips of Nichols Ranch mine units. Dry Willow would flood the very southern tip of the Hank Unit. Drainages would not flood significantly because they are very incised. UEC will avoid putting wells near any of the incised drainages in the mine units in the Nichols Ranch and Hank Unit license areas. They would provide erosion protection near incised drainages in the proposed mine units.
9. **RAI issue regarding aquifer water levels and ground surface locations on cross sections** – UEC displayed new draft cross sections for both the Nichols Ranch and the Hank Unit license areas. These cross sections clearly showed the ground surface, all aquifers and aquitards, and water levels in all of the individual sands of interest. It was clear that the Hank Unit ore body in the “F sand” is confined in some locations and unconfined in others.
10. **RAI requesting maps that show the surficial aquifer units across Nichols Ranch and Hank Units and associated water levels below ground surface (bgs)** – UEC displayed new draft maps of the formations that act as the surficial aquifers and associated water levels below ground surface for both the Nichols Ranch and Hank Units. This information will help to evaluate the potential for surface spills to impact the surficial aquifer. It was determined that three different sands act as the surficial aquifer at the Nichols Ranch Unit. Only one sand acts as the surficial aquifer at the Hank Unit. The water levels were drawn employing less than two measured well values and an interpretation based on site topography. UEC said they would add additional wells in both license areas to help verify these water levels.
11. **RAI issue regarding coal bed methane (CBM) discharge points and impoundments in and surrounding Nichols Ranch and Hank Unit proposed license areas** – UEC displayed a new draft map of all currently permitted CBM discharge points and impoundments in the Nichols Ranch and Hank Unit license areas. There are currently no active CBM discharges or impoundments in either license area. Background surficial aquifer water quality is not yet impacted by CBM activities. It is unknown when the CBM discharges will start to operate in the Nichols Ranch unit. All CBM produced water is planned to be piped out of the Hank Unit permit boundary area for disposal. It was

agreed that UEC can prepare a map(s) which shows CBM discharges and impoundments one mile from the proposed permit boundary for both proposed license areas.

- 12. RAI issue regarding the potentiometric surface for “F sand”** – UEC displayed a new draft potentiometric map for the “F sand” in Hank Unit at the requested refined scale. A discussion was held about the measured water levels, which appeared anomalous when compared to the proposed contours. UEC stated it was their interpretation that the water level anomalies were a function of well completions which intercept more than the “F sand.”
- 13. RAI issue regarding vertical gradients across aquitards** – UEC discussed the dependence of vertical gradients across an aquitard on where the water levels are measured. In particular, a vertical gradient calculated from water levels measured in the upper aquifer and aquitard will produce a different vertical gradient compared to collecting the measurement in the aquifers separated by the aquitard. The difference can be an order of magnitude.
- 14. RAI issue regarding errors in transmissivity value when it is determined, using drawdown measurements from a single pumping well** – UEC displayed a draft plot showing that while it is true that increased skin (head loss) at a pumping well does increase drawdown, the slope of the drawdown vs. time curve does not change as a function of skin. As it is the slope which is used to determine transmissivity and not the actual drawdown values, the head loss in the well should not impact the transmissivity calculation.
- 15. RAI issue regarding natural groundwater gradient reversal at site with bleed** – UEC discussed the model that was used to calculate the bleed required to produce the reversal of the natural groundwater gradient at each license area for a confined or unconfined setting.
- 16. RAI issue regarding restoration in unconfined setting** – UEC indicated they have located a 1981 technical paper which presents evidence of successful restoration after ISL recovery in unconfined aquifer. This paper will be provided to NRC with the RAI response.

UEC suggested that the three new applicants for new ISL licenses in Wyoming meet with NRC staff to discuss generic issues common to their applications. No decisions on this request were made.

A member of the public asked what regulations cover the air quality issues discussed by NRC and UEC. NRC Staff stated that the licensee would have to show compliance with 10 CFR 20 for individual dose to members of the public, 10 CFR 20 for surveys and monitoring, and 10 CFR 40.65 for effluent reporting requirements.

ACTIONS:

1. UEC requested NRC clarify what information other licensees and applicants are providing with respect to environmental monitoring and modeling requirements. NRC staff agreed to provide UEC with information on this request.

2. NRC staff agreed to UEC's request that information on CBM activities related to surface and groundwater be reduced to 1 mile outside of the permit boundary as opposed to a 5 mile radius.

None of the draft maps, plots, etc., discussed at the meeting were submitted to the NRC for review by UEC. Therefore, none are included in this meeting summary. The meeting and teleconference ended at approximately 12:00 noon Eastern time.

ATTACHMENTS: 1. Meeting Agenda
2. Attendee List

MEETING AGENDA
Uranerz Energy Corporation
October 22, 2008

MEETING PURPOSE: Discuss Uranerz Energy Corporation's Nichols Ranch ISR Project License Application and NRC's Request for Additional Information.

MEETING PROCESS:

<u>Time</u>	<u>Topic</u>	<u>Lead</u>
10:00 a.m.	Introductions	All
	Discuss NRC's Request for Additional Information	All
	Summary of Action Items	Moderator
	Public Comment/Questions	Moderator
	Adjourn	