

April 5, 2016

MEMORANDUM TO: Bill Von Till, Chief  
Uranium Recovery Licensing Branch  
Division of Decommissioning, Uranium Recovery,  
and Waste Programs  
Office of Nuclear Material Safety  
and Safeguards

FROM: David Brown, Sr. Health Physicist */RA/*  
Uranium Recovery Licensing Branch  
Division of Decommissioning, Uranium Recovery,  
and Waste Programs  
Office of Nuclear Material Safety  
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SUBJECT: SUMMARY OF MARCH 8, 2016, MEETING WITH URANERZ  
ENERGY CORPORATION

On March 8, 2016, U.S. Nuclear Regulatory Commission (NRC) staff met with representatives of Uranerz Energy Corporation (Uranerz), a wholly-owned subsidiary of Energy Fuels, Incorporated, to discuss the NRC staff's January 21, 2016, request for additional information pertaining to the Uranerz application for an amendment to its source materials license for the Nichols Ranch In Situ Recovery Project. The associated meeting notice was issued on February 23, 2016, and is available at NRC's Agencywide Documents Access and Management System (ADAMS) Accession No. ML16054A370. A summary of the meeting is enclosed.

Docket No.: 040-09067

Enclosure: Meeting Summary

CONTACT: David Brown, NMSS/DUWP  
(301) 415-7677

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**DISTRIBUTION:** J. Whitten, RIV L. Gersey, RIV A. Kock, NMSS  
A. Waldron, NMSS J. Caverly, NMSS R. Linton, NMSS

**ADAMS Accession No.: ML16089A351**

<b>OFFICE</b>	DUWP	DUWP	FCSE:PM	DUWP:LA	DUWP
<b>NAME</b>	D. Brown	L. Desotell	J. Caverly	S. Achten	D. Brown
<b>DATE</b>	3/29/16	3/29/16	4/4/16	4/5/16	4/5/16

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## **MEETING SUMMARY**

DATE: March 8, 2016

TIME: 1:00 p.m. – 5:00 p.m., EST

PLACE: U.S. Nuclear Regulatory Commission  
Two White Flint North, Rockville, MD  
Room T-7C1

PURPOSE: To clarify the U.S. Nuclear Regulatory Commission staff's January 21, 2016, request for additional information pertaining to the Uranerz Energy Corporation May 8, 2014, license amendment request for the Nichols Ranch In Situ Recovery Project.

ATTENDEES: See Attachment 2

### **BACKGROUND:**

The purpose of the meeting was for Uranerz Energy Corporation (Uranerz) to request clarification of some of the individual items in the U.S. Nuclear Regulatory Commission (NRC) staff's January 21, 2016, Request for Additional Information (RAI) (NRC Agencywide Documents Access and Management System Accession No. ML16013A407). The list of items for which Uranerz requested clarification is included as Attachment 1 to this summary. The items are listed in the order they were discussed. Meeting attendees are listed in Attachment 2.

### **PUBLIC DISCUSSION:**

During the discussion, Uranerz sought clarification on one or more of the following related to each of the items discussed: the regulatory basis for the NRC staff's requests; the type and level of detail of information requested; and whether NRC staff would accept alternative approaches to providing the specific information requested. Following the meeting, the NRC staff determined that the following RAIs required additional clarification. Additional clarification was discussed during a follow-up teleconference with Uranerz on March 17, 2016:

GEN-2. In this request on the Environmental Report, NRC staff requested additional information regarding the future Jane Dough wellfield infrastructure, including locations of wells, roads, pipelines, trunk lines, and power lines, and where these features may cross drainage channels.

Uranerz explained that the level of detail requested by the NRC staff is not available at this time. The NRC explained during the follow-up teleconference that what information is available should be provided in response to this request to assist the staff in better defining areas likely to be disturbed by wellfield construction and operations in the Jane Dough Unit. However, NRC staff will complete its environmental impact assessment using conservative estimates for the extent of land area disturbed.

D6C-1.t. In this request on the Technical Report, NRC staff requested aquifer pumping test data presented in Addendums JD-D6B and JD-D6C in electronic form.

**Enclosure**

Uranerz requested clarification on whether all or part of the data presented in Addendums JD-D6B and JD-D6C should be provided. NRC staff clarified during the follow-up teleconference that data for the URZJA-1 multi-well pump test would be sufficient, including the data for wells URZJA-1, URZJA-2, and URZJB-3. The data for URZJF-5 and URZJ1-6 are not in the pumping zone, didn't show a response to pumping, and, therefore, are not required.

- 3D-1.a. In this request on the Technical Report, NRC staff requested the electronic input and output files for all groundwater modeling simulations along with a text file that provides a brief description of each file.

NRC staff clarified during the follow-up teleconference that if Uranerz provides a complete response to items 3D-1.b. through 3D-1.l, then the electronic input and output files are not required at this time.

- RAI D6-2.a In this request on the Technical Report, NRC staff requested the electronic input and output files for the coal bed methane related groundwater modeling simulations.

NRC staff clarified during a follow-up teleconference that if Uranerz provides a complete response to items D6-2.b through D6-2.d then the electronic input and output files are not required at this time.

During the follow-up teleconference, NRC staff also clarified that RAI 2.7-9 on the Technical Report contained a typographical error and should have referred to reservoir RES 29-2, not RES 29-1. NRC staff also clarified that in its response to RAI ADM 3.6-1, Uranerz should explain how the information contained in Section 3.6 of the Technical Report dated January 2010, which was removed from the July 2010 Technical Report, is addressed in other sections of the Technical Report or current license conditions.

#### **ACTION ITEMS:**

Action items from the meeting are addressed in the clarification statements provided above.

#### **Attachments:**

1. List of RAI Items Discussed
2. Meeting Attendees

January 21, 2016, Requests for Additional Information discussed at March 8, 2016, meeting. Uranerz sought clarification on the items marked with an "X."

<b>Environmental Report</b>		
	<b>RAI</b>	<b>Description</b>
	GEN-1	Permit Updates
X	GEN-2	Site Layout
	GEN-3	Project Schedule
X	EC-1	Annual Wildlife Monitoring Plan
X	AQ-1	Emissions from Deep Disposal Well Drilling
X	AQ-2	Fugitive Dust Calculation – Sources
X	AQ-3	Fugitive Dust Calculation
X	AQ-4	Fugitive Dust Calculation – Dust Suppression Estimate
X	AQ-5	Fugitive Dust Calculation – Dust Suppression
X	AQ-6	Fugitive Dust Calculation – Peak Year and ISR Phases
X	SW-1	Ephemeral Channels
X	SW-2	Surface Water Class(es)
X	SW-3	Wells Bored in Drainages
	GW-1	Aquifer and Aquitard Hydrologic Properties and Gradients
	GW-2	Geochemistry Clarification
X	GW-3	Consumptive Water Use During Construction and Decommissioning
X	POH-1	Reporting Units for Uranium in Soil
X	POH-2	Yellowcake Dryer and Scope of Baseline Gamma Monitoring
X	POH-3	Clarify Summary of Groundwater Quality Data
X	POH-4	Miscellaneous Editorial Clarifications
	POH-5	Clarify Baseline Air Radionuclide Concentration Units
X	WM-1	Decommissioning Wastes from Proposed Pipelines
X	WM-2	Solid Byproduct Material Disposal Site

<b>Technical Report</b>		
	<b>RAI</b>	<b>Description</b>
X	1.1-1	License Changes to Technical Report
	2.2-1	Update Land and Water Use Section
X	2.5-1	Description of Meteorological Tower
X	2.5-2	Meteorological Data
	2.6-1	Coal Bed Methane Target Depths
X	2.6-2	AB Mudstone Isopach
X	2.7-1	Drainage Basin Map
X	2.7-2	Delineation of Sub-basin JDA1
	2.7-3	Flood Analyses
X	2.7-4	Source and Use of Reservoir Water

<b>Technical Report</b>		
	<b>RAI</b>	<b>Description</b>
	2.7-5	Accuracy of Figure JD-D6-1
X	2.7-6	Self-Sampler Locations
X	2.7-7	Self-Sampler 2
X	2.7-8	Exhibit 2-4
	2.7-9	Reservoir Discharge
X	2.7-10	Permitted Irrigation
	2.7-11	Vertical Hydraulic Conductivity
	2.7-12	A Sand Hydraulic Conductivity
X	2.7-13	Figure JD-D6-4 Wells
	D5-1	FB Mudstone
X	D6-1	Water Supply Wells Pumping Rate
X	D6-2	Coal Bed Methane Groundwater Model
X	D6C-1	Multi-Well Pumping Tests
X	3D-1	Jane Dough Groundwater Modeling
	2.9-1	Insufficient Explanation of Background Gamma Dose
	2.9-2	Sample Locations for Particulate Matter, Radon-222, and Direct Gamma Exposure Rates
X	3.1-1	Figure 3-12 Project Schedule
X	3.2-1	Jane Dough Bleed Rate
	3.2-2	Jane Dough Groundwater Velocity
X	3.2-3	Deep Disposal Well Flows
X	3.2-4	AB Mudstone's Impact on Operations
	3.4-1	Surface Water Pathways at Jane Dough
X	3.4-2	Injection Pressures
X	5.7-1	Baseline Data for Stacked Ore Zones
X	5.7-2	Composition of Lixiviant
X	5.7-3	Domestic and Livestock Wells Monitoring
	5.7-4	Operational Surface Water Monitoring
X	5.7-5	Creek Sampling
	5.7-6	Quality Assurance Program
X	5.7-7	Monitoring of the 1 Sand
	6.2-1	Seed Mix
	6.2-2	Effect of Aquifer Thickness on Flare Factor
	6.2-3	Restoration Pore Volumes
	7.3-1	Joint Frequency Distribution
	7.3-2	Site-specific Meteorological Data
	7.5-1	Changes to Figure 2-1

In its January 21, 2016, request for additional information, NRC staff identified errors in the application that the staff found during its initial review, and asked Uranerz to correct them. These errors were listed separately because they aren't information requests, but rather requests for correction of information in the application, such as typographical errors, incorrect cross-references, and mislabeled tables and figures. Uranerz sought clarification on the items marked with an "X."

	TOC-1
	TOC-2
	TOC-3
	TOC-4
	TOC-5
	TOC-6
	TOC-7
	TOC-8
	TOC-9
	TOC-10
	1.0-1
	2.4-1
	2.4-2
	2.4-3
	2.6-1
	2.6-2
	2.6-3
	2.7-1
	2.7-2
	2.7-3
	2.7-4
	2.7-5
	2.7-6
	2.7-7
X	2.7-8
	2.7-9
	2.7-10
	2.7-11
	2.7-12
	2.7-13
	2.7-14
	2.7-15
	2.7-16
X	2.7-17
	2.7-18

	2.7-19
	2.7-20
	D5-1
	D5-2
	D5-3
	D5-4
	D5-5
	D5-6
	D5-7
	D5-8
	D6-1
	D6-2
	D6-3
	D6-4
X	D6-5
	D6-6
	D6-7
	D6-8
	D6B-1
	D6C-1
	D6C-2
	D6C-3
	D6C-4
	D6C-5
	D6C-6
	D6C-7
	D6C-8
	D6C-9
	D6C-10
	2.9-1
	2.9-2
	2.9-3
	2.9-4
	2.9-5
	2.9-6

	2.9-7
	3.0-1
	3.2-1
	3.4-1
	3.4-2
	3.4-3
	3.4-4
	3.4-5
	3.5-1
X	3.6-1
	5.7-1
	5.7-2
	5.7-3
	5.7-4
	5.7-5
	5.7-6
X	5.7-7
X	5.7-8
X	5.7-9
	6.1-1
X	6.1-2
	6.2-1
X	7.2-1
	7.2-2
	7.3-1
	JD-11-1
	JD-11-2
	JD-11-3
	JD-11-4
	JD-11-5

## MEETING ATTENDEES



Date: March 8, 2016

Topic: Discussion of January 21, 2016, Request for Additional Information  
Pertaining to Nichols Ranch License Amendment to Expand Operations  
to the Jane Dough Unit

Name	Affiliation
David Brown	NRC
Jill Caverly	NRC
Lloyd Desotell	NRC
Amy Minor	CNWRA
Marla Morales	CNWRA
Miriam Juckett	CNWRA
Bradley Werling	CNWRA
Pat LaPlante	CNWRA
Dawn Kolkman	Uranerz
Scott Bakken	Energy Fuels
Bruce Larson	Uranerz
Aaron Linard	Uranerz
Bernard Bonifas	Uranerz
Tom Michel	Hydro Engineering
George Hoffman	Hydro Engineering
Scott Kamber	TRC
Ben Schiffer	WWC Engineering