

May 12, 2015

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

FROM: John L. Saxton, Hydrogeologist **/RA/**  
Uranium Recovery Licensing Branch  
Division of Decommissioning, Uranium Recovery  
and Waste Programs  
Office of Nuclear Material Safety  
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SUBJECT: PUBLIC MEETING SUMMARY

On April 6, 2015, a public meeting (teleconference) was held at Room T-7C2, Two White Flint North Building (U.S. Nuclear Regulatory Commission (NRC) Headquarters), Rockville, Maryland, between NRC staff and UR-Energy, Inc. (UR-Energy) staff. The purpose of the meeting was for UR-Energy to ask questions regarding radiological surveys at the proposed Shirley Basin is-situ amendment boundary and air monitoring locations. The meeting notice was publicly noticed on February 24, 2014 on the NRC public webpage and in the Agencywide Documents Access and Management System (ADAMS) under Accession Number ML15056A230.

Enclosures:

1. Meeting Report
2. Attendee List

CONTACT: John L. Saxton, NMSS/DUWP  
(301) 415-0697

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|--------|----------|----------|----------|----------|
| OFFICE | DWMEP    | DWMEP    | DWMEP    | DWMEP    |
| NAME   | JSaxton  | SAchten  | BvonTill | JSaxton  |
| DATE   | 05/11/15 | 05/11/15 | 05/12/15 | 05/12/15 |

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**April 6, 2015 Meeting Summary**  
**To Discuss UR-Energy's Plan for the Shirley Basin Baseline Survey**

On January 28, 2015, UR-Energy had sent an email to the NRC Lost Creek Project Manager (Saxton) in which three questions for U.S. Nuclear Regulatory Commission (NRC) staff were proposed (see Attachment). Staff indicated that discussions on these topics required a public meeting.

The NRC staff read the opening statement for a Category 1 public meeting. The meeting was then opened to UR-Energy. UR-Energy staff asked about the density of the sampling proposed by UR-Energy. Staff stated that it was not aware of any additional guidance other than Regulatory Guidance (RG) 4.14. Staff pointed UR-Energy to the Request for Additional Information sent to Powertech for the Dewey-Burdock site to gain an understanding of staff's concerns regarding the density of gamma measurements in that specific licensing case and suggested that for any large areas that are not surveyed, it would be a good idea to provide details on any assessment performed as a basis for not surveying (e.g., similar geological features, previous surveys completed by another entity, etc.).

UR-Energy asked about field or laboratory sampling. Staff stated that they didn't know any other applicant that relied on laboratory samples only. Staff also reiterated that it was not aware of any additional guidance other than RG 4.14. Staff expressed the concern to UR-Energy that using laboratory analysis alone could complicate proposed decommissioning techniques as other applicants have relied upon in situ dose rate correlated with the radium content in soil.

At this point, UR-Energy stated that the lack of direct answers by NRC staff was frustrating and thought continuation of the meeting was pointless. Staff made it clear to UR-Energy that it will evaluate all alternatives on a case-by-case basis during individual licensing reviews in accordance with RG 4.14. Consequently, questions regarding soil sampling depth were not asked.

No action items were discussed.

The meeting was adjourned at 11:20 AM.

After the meeting through an email, UR-Energy staff asked about the specific location of information in the Powertech reference due to its size and number of documents in that reference. NRC staff provided the following information to UR-Energy: The discussions are in TR RAI 2.9-22 (gamma survey) and TR RAI 2.9-40 of Vol. 1 of 4 of the June 2011 submittal (ML11208B714).

Attachment: Letter from J. Cash, UR Energy, Inc.

John,

Over the past few years, in situ mining companies have satisfied Section 1.1.4(a) of Reg Guide 4.14 by performing vehicle mounted gamma surveys over the proposed wellfields and surrounding areas. The results of the gamma surveys were compared with radium and uranium analysis of a few soil samples in order to make a correlation. The number of gamma readings were in the tens of thousands and perhaps over 100,000.

We plan to complete such a survey at Shirley Basin but will likely use a portable gamma spectrometer such as a Canberra Inspector 1000. Another significant difference that we propose is that the readings be static instead of taken from a moving vehicle. We believe this will give us better quality control since the height of the meter above ground will be more consistent and count times will be longer. These factors should allow us to make a good correlation between gamma and radionuclides of concern (uranium, radium and perhaps Th-230 and Pb-210).

As we design the survey we do have a few questions and are hoping that the NRC can provide us with some insight on what will be acceptable:

1. Can the NRC provide any guidance on the density of gamma measurements needed to satisfy Reg Guide 4.14? The Reg Guide requires up to 40 measurements (actual soil assay). It seems to me that taking measurements on a 150 ft. square grid would provide good coverage and far surpass the quantity of measurements required by the Reg Guide.
2. Does NRC have any thoughts on whether the gamma readings should be taken in situ or should soil samples be collected in the field and the gamma measured in the lab? In situ measurements would "see" a broader area, perhaps a radius of 1 meter, but field conditions are difficult to control. Lab measurements would be more precise due to greater control and longer count times but would only be a measurement of a very discrete sample instead of a broader area.
3. If NRC believes collecting soil samples and measuring the gamma in the lab is the more appropriate method, I would like to propose the sampling depth be 5 cm in order to be in-line with Reg Guide 4.14. Does this seem suitable?

Any and all thoughts would be appreciated. Feel free to have the HP call if they want to discuss.

Regards,

John W. Cash  
Vice President of Regulatory Affairs  
Ur-Energy Inc.  
5880 Enterprise Dr., Suite 200  
Casper, WY 82609

Attachment



**MEETING ATTENDEES**

**Date: April 6, 2015**

**Room T7C2**

**11:00 am to 11:20 am**

**Topic: Discuss UR-Energy, Inc.'s proposed Shirley Basin Radiological Survey**

| NAME        | AFFILIATION |
|-------------|-------------|
| John Saxton | NRC         |
| James Webb  | NRC         |
| Ron Burrows | NRC         |
| John Cash*  | UR-Energy   |
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**\*Participated via Teleconference**