

August 11, 2010

Mr. Jon Winter  
Manager, Wyoming Environmental  
and Regulatory Affairs  
Uranium One USA, Inc.  
907 N. Poplar Street  
Suite 260  
Casper, WY 82601

SUBJECT: JULY 14, 2010 MEETING REGARDING URANIUM ONE AMERICAS, INC.  
MOORE RANCH URANIUM IN SITU RECOVERY PROJECT

Dear Mr. Griffin:

On July 14, 2010, a public meeting was held to discuss the Uranium One Americas, Inc. (Uranium One) proposed uranium *in situ* recovery facility at its Moore Ranch site. The U.S. Nuclear Regulatory Commission (NRC) staff is in the process of finalizing its Safety Evaluation Report and issued a draft license for Moore Ranch on June 22, 2010. Uranium One provided written comments on the draft license on July 2, 2010. The purpose of the meeting was to discuss Uranium One's comments on the draft license. A summary of the meeting is enclosed.

Based on the items discussed at the meeting, the staff anticipates issuing a revised draft license in early to mid September. If you have any questions concerning this letter, please contact me, either by telephone at (301) 415-0724, or by e-mail at [douglas.mandeville@nrc.gov](mailto:douglas.mandeville@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

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component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Sincerely,

**/RA/**

Douglas T. Mandeville, Senior Project Manager  
Uranium Recovery Licensing Branch  
Division of Waste Management  
and Environmental Protection  
Office of Federal and State Materials  
and Environmental Management Programs

Docket No. 40-9073

Enclosure: Meeting summary

cc: G. Mooney, WDEQ

J. Winter

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cc: G. Mooney, WDEQ

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**MEETING SUMMARY**  
**Uranium One Americas, Inc. Moore Ranch ISR**

DATE: July 14, 2010

TIME: 1:30 p.m. – 4:30 p.m.

PLACE: U.S. Nuclear Regulatory Commission  
Two White Flint North, Rockville, Maryland  
Room T8 C5

PURPOSE: To discuss draft license for the Moore Ranch ISR facility

ATTENDEES: See Attached Attendee List

**BACKGROUND:**

The U.S. Nuclear Regulatory Commission (NRC) staff is in the process of finalizing its Safety Evaluation Report (SER) and issued a draft license for Moore Ranch on June 22, 2010 (see ML100970147). Uranium One provided written comments on the draft license on July 2, 2010 (see ML101870568). The purpose of the meeting was to discuss Uranium One's comments on the draft license.

**DISCUSSION:**

The teleconference began at 1:30 p.m. The NRC staff stated that the meeting was open to the public and that members of the public would be allowed to ask questions or make comments at the end of the meeting. Several members of the public listened in on the conference call.

The NRC staff also discussed the status of the review. The draft license conditions were then reviewed.

A summary of the discussion is presented below. Uranium One's comments are provided in normal text and NRC staff comments have been *italicized*. Note that the discussion is organized by license condition and is not necessarily in the same order as during the public meeting. Additionally, the discussion relates to Uranium One's written comments dated July 2, 2010. If no written comments were provided, the NRC staff assumes that Uranium One agrees to the license condition. To aid in the review, the July 2 draft license is included as an attachment to this meeting summary.

#### **License Condition 9.4**

Uranium One identified a grammatical mistake in the second line of the application, the word “the” should appear between “in” and “application”. Uranium One also commented that for obvious changes to the facility that the licensee may proceed with the amendment application without performing a SERP review. Uranium One requested that the condition be revised to remove the requirement to complete a SERP before submitting a license amendment request.

*The staff will address the grammatical mistake in the second line of the license condition. The staff understands Uranium One’s comment about the need to perform a SERP review prior to submitting an “obvious” license amendment. However, the staff’s position is that the SERP process should be followed consistent with the license condition language (i.e., before any license amendment request). The staff proposes no changes to this condition.*

#### **License Condition 9.5**

Uranium One commented on the sentence in this license condition that states “All costs will be third party costs and documented by industry invoices or proposals.” Uranium One commented that invoices may not be available as some work may not be performed prior to submittal of the surety estimate. Uranium One requested that the surety estimate language from the Irigary/Christensen Ranch facility (license SUA-1341) be used in this license condition. The SUA-1431 language requires the licensee to “submit supporting documentation, showing a breakdown of the costs and the basis for the cost estimates with adjustments for inflation.” Uranium One also noted that the last sentence of this license condition should reference Appendix C of NUREG-1569.

*The staff noted that a Commission decision regarding Hydro Resources, Inc. specifically stated that invoices or proposals are not required. Therefore, the request to use the language from license SUA-1431 in the Moore Ranch license appears to be reasonable and the staff will consider the change. The license condition will be changed to address the reference to Appendix C of NUREG-1569.*

#### **License Condition 9.6**

Uranium One asked for clarification on the definition of the term “volumetrically contaminated equipment, materials, or packages.”

*Volumetric contamination refers to contamination that is distributed throughout equipment, materials, or packages, the contamination is not surficial. An example could be contaminated soil. Because the condition only states that volumetrically contaminated material is not addressed by Policy and Guidance Directive 83-23, the staff will consider revising this license condition.*

#### **License Condition 9.8**

This license condition relates to the National Historic Preservation Act and the Archaeological Resources Protection Act. Uranium One commented that they have performed a Class III

Cultural Resource Survey throughout the proposed project area and that the survey has received concurrence from the Wyoming State Historic Preservation Office.

*The staff recognizes that a Class III Cultural Resources Survey has been performed for the proposed project area. However, this is a standard condition to protect historical or cultural resources that may be discovered during operations. The staff also included this condition to address the possibility of future expansions of the Moore Ranch site. The staff will consider clarifying the condition to require a cultural resource inventory if such survey has not been previously conducted and submitted to the NRC.*

#### **License Condition 9.11**

Uranium One questioned the inclusion of the phrase “emergency generator use and maintenance records” in the license condition. Uranium One also suggested adding the phrase “required by NRC regulation or this license” to the end of the first sentence of this license condition.

*The staff will consider removing the phrase “emergency generator use and maintenance records” and adding the phrase “required by NRC regulation or this license” to this license condition.*

#### **License Condition 10.1**

Uranium One commented that this license condition should be revised to: include sodium carbonate, replace “or” with “and/or”, and add hydrogen peroxide. Uranium One proposed these changes to reflect the application.

*The staff will consider the inclusion of sodium carbonate to the license condition and the replacement of “or” with “and/or”. The staff agrees that hydrogen peroxide as a lixiviant is discussed in a general manner in Section 1.6 of the technical report. However, Section 3.1.4.1 of the technical report, which presents the actual lixiviant composition and in situ reactions that will occur during lixiviant injection, does not discuss hydrogen peroxide. Therefore, the staff did not evaluate the use of hydrogen peroxide during its review. If Uranium One wishes to use hydrogen peroxide as a lixiviant at Moore Ranch, the application needs to be amended.*

#### **License Condition 10.4**

Uranium One questions the basis for including the phrase “breathing zone air sample or applicable area air sample” for all radiation work permits (RWPs) issued under the license. Uranium One noted that Regulatory Guide 8.31 states that an RWP should include “The radiological monitoring and air sampling necessary before, during, and following completion of the job.”

*The staff will re-evaluate the need for this license condition.*

### **License Condition 10.6**

Uranium One requested clarification of the term “bi-monthly” as it could be interpreted to mean every two months or twice per month.

*The staff has reviewed Section 2.5 of Regulatory Guide 8.31 and interprets “bi-monthly” to mean every two months. The staff will consider revising the text in this license condition to provide clarity.*

### **License Condition 10.8**

Uranium One questions the basis for inclusion of the term “nonradioactive materials” in this license condition and suggests removing this term.

*The staff will consider clarifying this license condition.*

### **License Condition 10.9**

Uranium One noted that the application proposed performing a mechanical integrity test (MIT) at 120 percent of the maximum operating pressure. Uranium One requests that either the pressure requirement be lowered from 125 percent to 120 percent or that the license condition be revised to reference the section of the application that discusses MIT performance. Uranium One also requests that reference to the single point resistance test be removed.

*The staff will consider revising the license condition to reflect the applicant’s proposed techniques for performing MITs.*

### **License Condition 10.10**

Uranium One requested that the NRC staff provide the criteria and guidance that will be used while reviewing the well field packages.

*The staff notes that guidance on well field packages can be found in section 5.7.8 of NUREG-1569. The staff proposes no changes to the license condition. The staff notes that the cover letter for the draft license (dated June 22, 2010) identified the information that should be contained in a well field package. The information in a well field package should include: completion reports for injection, production, and monitoring wells; pumping tests demonstrating hydraulic connection between the production zone and the monitor well ring; baseline water quality measurements; upper control limits (UCLs); and restoration target values (RTVs). These items will be included in the final SER. It is likely that this information will be required for the WDEQ hydrologic test package. It is anticipated that the NRC staff’s review will be focused on demonstration of hydraulic control over fluids in the production zone ; verifying baseline data and the methods used to determine UCLs and RTVs.*

### **License Condition 10.11**

This license condition addresses the ground water restoration standards that will apply at the site. Uranium One suggests that the term “presented in” be replaced with the term “consistent with” as literal compliance with 10 CFR Part 40, Appendix A, Criterion 5(B)(5), may not be feasible. Uranium One also requests that the staff clarify the point of compliance at Moore Ranch, identify whether the Table 5C concentrations or current maximum contaminant levels (MCLs) apply, and clarify the ground water parameters that will be used to measure effectiveness of restoration.

*The staff understands Uranium One’s comments and will consider revising this license condition.*

### **License Condition 11.3D**

This license condition pertains to the baseline sampling that will be conducted in each well field to establish pre-operational ground water quality and restoration target values (RTVs) prior to the injection of lixiviant. Uranium One notes that this condition, as currently presented, would require all four samples for all baseline and monitor wells would need to be analyzed for the full list of parameters in this license condition, which is not consistent with the sampling plan proposed in the application. Uranium One requests that the condition be revised to reflect the program contained in the application.

*During the review, the staff identified that Uranium One’s proposed baseline sampling program was not consistent with the guidance provided in NUREG-1569, so the staff defaulted to section 5.7.8.3 of this guidance. The staff suggested that non-detects may be deleted after two rounds of sampling or that the list may be reduced to hazardous constituents and those expected during ISR operations. Uranium One may propose an alternative to the baseline sampling program.*

### **License Condition 11.4A**

Uranium One commented that the sampling and analysis requirements in this license condition are not consistent with the proposed program in the application. Additionally, the license condition appears to overlap with license condition 11.3. Uranium One requests that the condition reflect the program proposed in the application.

*The staff will review this license condition for consistency with the sampling and analysis program in the application.*

### **License Condition 11.4C**

Uranium One comments that the application included a provision that would allow the upper control limit (UCL) for chloride to be set at 15 milligram per liter (mg/l) if that value was higher than the average plus five standard deviations. Uranium One indicated that this is consistent with the current Irigaray license (SUA-1341) and with NUREG-1569.

*The staff will consider revising this condition to incorporate the proposed UCL standard for chloride.*

### **License Condition 11.5**

Uranium One notes that criterion b of this license condition would define an excursion as any sample exceeding a single UCL parameter by 20 percent, which is not consistent with the application or Section 5.7.8.3 of NUREG 1569. Uranium One requests that this condition be removed from the license. Uranium One comments that there is no section 5.7.9.6 in the application; the correct reference should be to section 5.7.8.2. Uranium One suggests that this condition be replaced with condition 11.5 from the Irigaray license (SUA-1431).

*The staff will review this condition and will consider Uranium One's proposed changes.*

### **License Condition 11.6**

Uranium One comments that this condition requires maintenance of spills of process chemicals and questions the staff's regulatory basis for requiring chemical spills that do not involve radioactive materials.

*The staff will review this condition.*

### **License Condition 11.7**

Uranium One comments that the application proposed isotopic analysis after initial facility startup and reiterated its position that additional isotopic analysis on an annual or semi-annual basis will not be warranted. Uranium One suggests that this condition require additional analysis only if the initial isotopic analysis fails to confirm that natural uranium is the primary radionuclide of concern in the air particulate samples and that other uranium daughters cannot be disregarded.

*The staff will review this condition.*

### **License Condition 11.8**

Uranium One objects to this license condition. Specifically, Uranium One questions the requirement that release surveys for resin shipments during off hours be performed by personnel meeting the requirements identified for radiation safety staff in Regulatory Guide 8.31. Uranium One notes that the application describes additional training that will be required for staff performing this function and that Regulatory Guide 8.31 is not a regulatory position. Uranium One requests that this condition be removed from the draft license.

*The staff has reviewed Uranium One's proposed training activities for personnel performing health physics duties during off hours and notes that Uranium One proposed following Regulatory Position 2.5 of Regulatory Guide 8.31. The staff determined that, consistent with Regulatory Guide 8.31, the qualification of personnel performing health physics duties, including routine and special contamination surveys during off normal hours, should be commensurate, at a minimum, with the qualifications of an HPT as defined in Regulatory Position 2.4.2.*

### **License Condition 11.9**

Uranium One requests clarification of the term “gas breakout event” and notes that distribution systems at ISR facilities routinely collect and vent gas from dissolved oxygen coming out of solution. Uranium One requests that this license condition be removed.

*The staff reiterated its concern about the possibility of two phase flow occurring as a result of operations in the unconfined (unsaturated) aquifer. The staff also notes that Uranium One provided a reasonable plan for addressing this concern in an open issue response. The staff will evaluate Uranium One’s proposed condition to address this comment.*

#### **License Condition 12.1**

Uranium One notes that the term “aquifer exemption” implies an EPA designation that is not part of the Wyoming UIC primacy program. Uranium One requests that the term “including the aquifer exemption boundary” be removed from this license condition.

*The staff will review this condition and will consider revising the condition to require submittal of State permits and associated documents.*

#### **License Condition 12.2**

Uranium One notes that contact with local emergency service providers will be established and maintained. As an example, Uranium One cited its recent donation to a local life flight helicopter service. These activities would include providing site contact information, hazards present at the site, storage information, and identifying response needs. Uranium One’s position is that the staff should not dictate establishment of Memorandums of Agreement (MOA) in a license condition.

*The staff will consider revising this condition to remove requirements for MOAs.*

#### **License Condition 12.5**

Uranium One notes that details of the preoperational radiological environmental monitoring data were provided in Section 2.9 of the technical report of the license application. Uranium One requests that the staff provide specific details for the monitoring data needs.

*The staff indicated that the intent of this condition was to require Uranium One to submit preoperational sampling data that was not provided in the original application. Details about specific data needs will be available in the staff’s SER.*

#### **License Condition 12.6**

Uranium One notes that sections 5.7.4 and 5.7.4.3 identify the manner in which unmonitored employees will not exceed 10 percent of the dose limit. Uranium One requests that the staff clarify why this facility specific preoperational condition is necessary.

*The staff will review this condition and will consider Uranium One’s comment.*

### **License Condition 12.8**

Uranium One notes that a discussion of 40.65 reporting criteria and a method to estimate radon releases were provided in an open issue response. Uranium One requests that the staff provide guidance on acceptable approaches.

*As discussed in radiological open issue 6a of the July 27, 2009 teleconference, Uranium One has not provided sufficient information for the staff to evaluate how the requirements of 10 CFR 40.65 will be met. Uranium One needs to provide the manner in which effluents generated at the facility will be quantified. The staff notes that this could be accomplished through calculations with verification of input parameters or through monitoring. Uranium One has proposed a hybrid approach based on calculations to estimate the quantity of radioactive materials released to unrestricted areas. However, it is not clear to the staff how the uncertainty with this approach will be quantified.*

### **License Condition 12.9**

Uranium One notes that the application did not identify a quality assurance (QA) manager and that an addendum to section 5 of the technical report identified a senior environmental specialist (SES) as the person responsible for implementing the quality assurance program. At Moore Ranch, Uranium One intends to have the radiation safety officer fill the SES position and implement the QA program.

*The staff will review this condition and will consider Uranium One's comment.*

### **License Conditions 12.11 and 12.12**

Uranium One notes that the application provided sampling locations consistent with Regulatory Guide 4.14. Uranium One requests that the staff identify the deficiencies in the proposed program.

*The staff notes that Uranium One did propose sampling location in the application; however, the locations may need to be altered based on the results of the on-site meteorological data collection. The staff will consider Uranium One's comment.*

### **License Condition 12.13**

Uranium One notes that the proposed contamination control program is consistent with Regulatory Guide 8.30. Uranium One requests that the staff identify deficiencies in the proposed program.

*The staff will review this condition and will consider Uranium One's comment.*

### **Additional License Condition**

Uranium One requests that a new condition be added to the license. This condition would exempt the facility from the requirements of 10 CFR 20.1902(e) provided that all entrances to the facility are posted in accordance with this regulation and that the posting include the words "ANY AREA WITHIN THIS FACILITY MAY CONTIAN RADIOACTIVE MATERIAL." Uranium One plans to insert language addressing this condition in the final revised technical report.

*The staff will consider Uranium One's request.*

**ACTIONS:**

NRC will prepare a summary of the conference call.

Uranium One will provide responses where necessary.

**Public Participation**

None of the members of the public asked questions, when given the opportunity near the conclusion of the conference call.

The meeting concluded at 4:30 p.m.

**ATTACHMENTS:** 1. Meeting Agenda  
2. Attendee List  
3. Draft License

MEETING AGENDA  
Uranium One/Moore Ranch ISR  
July 14, 2010

MEETING PURPOSE: Discuss Draft License for Moore Ranch ISR Facility

MEETING PROCESS:

<u>Time</u>	<u>Topic</u>	<u>Lead</u>
1:30 p.m.	Introductions	All
	Review of Draft License Conditions (draft license attached)	All
	Discussion of Draft License Conditions	All
	Summary of Action Items	Moderator
	Public Comment/Questions	Moderator
5:30 p.m.	Adjourn	

Conference Call Participants  
Uranium One Moore Ranch  
July 14, 2010

Name	Organization
Steve Cohen	US NRC
Jon Winter	Uranium One
Donna Wichers	Uranium One
Mike Griffin	Uranium One
Patti Swain	USNRC
Bill VonTill	USNRC
Behram Schroff	USNRC
Ron Linton	USNRC
James Webb	USNRC
Elise A. Striz	USNRC
John L. Saxton	USNRC
Tom Lancaster	USNRC
John Cash	Ur-Energy
Chuck Kelsey	Ur-Energy
Mike Thomas	Uranerz