June 12, 2012

Mr. Steve Hatten
President
Lost Creek ISR, LLC
5880 Enterprise Drive, Suite 200
Casper, WY 82609

SUBJECT: LOST CREEK ISR, LLC, LOST CREEK *IN SITU* RECOVERY FACILITY, SWEETWATER COUNTY, WYOMING, SUMMARY OF APRIL 30, 2012 TELECONFERENCE - (TAC NOS. J00652 & J00660)

Dear Mr. Hatten:

By letter dated February 17, 2012, Lost Creek ISR, LLC (LCI) submitted responses (Agency Documents Access and Management System (ADAMS) accession no. ML120730084) to the U.S. Nuclear Regulatory Commission (NRC) staff's request for additional information (RAI) relating to submitted clarifications and page changes to the technical report for the Lost Creek Project in Sweetwater County, Wyoming. By e-mail dated March 12, 2012 (ADAMS accession no. ML120730084), NRC staff acknowledged receipt of the RAI responses and the start of the technical review of these responses. On April 30, 2012, the NRC staff held a public teleconference call between the staff and LCI representatives to discuss NRC staff's questions concerning the designee qualifications.

In addition to the designee qualifications, the NRC and LCI staffs discussed questions concerning the mine unit 1 submission dated September 23, 2011 (ADAMS accession no. ML11290A121), and the proposed dryer that was submitted by letter dated January 6, 2012 (ADAMS accession no. ML120470355). The enclosed meeting summary documents discussions that occurred during this teleconference.

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

If you have any questions concerning this letter, please contact me, either by telephone at (301) 415-6142, or by email at Tanya.Oxenberg@nrc.gov.

Sincerely,

/RA/

Tanya Palmateer Oxenberg, Ph.D.
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.: 040-09068

Enclosure:
Meeting Summary

cc:
Meeting Attendees
M. Bautz, WDEQ
M. Newman, BLM

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MEETING REPORT

DATE:	April 30, 2012
TIME:	10:00 a.m. – 2:00 p.m.
PLACE:	U.S. Nuclear Regulatory Commission Two White Flint North, Rockville, Maryland Room T8C1
PURPOSE:	To discuss designee qualifications, MU-1, and dryers at the Lost Creek Project
ATTENDEES:	See Attached Attendee List

BACKGROUND:

Lost Creek ISR, LLC (LCI) on November 8, 2011 (Agency Document Access and Management System (ADAMS) accession no. ML11319A196) requested that additional information and technical report page changes submitted on November 11, 2010 (ML103210590), November 16, 2010 (ML103280186), and December 3, 2010 (ML103490862) be considered as fulfilling requirements of license conditions 9.7 and 12.13. These license conditions require LCI to provide health physics designee qualifications and a revised decommissioning, decontamination and reclamation plan, respectively. The U.S. Nuclear Regulatory Commission (NRC) staff completed a detailed review of LCI's submission and requested additional information (RAI) on December 22, 2011 (ML112780057). LCI provided a response on February 17, 2012 (ML12053A326). The staff completed its review of LCI's response and had several unresolved questions concerning the designee qualifications.

LCI submitted mine unit 1 (MU-1) wellfield package for NRC review and verification on September 23, 2011 (ML11290A121), to meet license condition 10.12, and provided clarifications on several hydrology questions in an email dated March 29, 2012 (ML12093A405). LCI also submitted an application to amend its license to allow yellowcake vacuum drying and shipment of vacuum dried yellowcake on January 6, 2012 (ML120470353).

DISCUSSION:

The teleconference began at 10:00 a.m. EDT. One member of the public listened in on the meeting.

Enclosure

Mine Unit 1 Wellfield Package

1. Commitments to Wyoming Department of Environmental Quality (WDEQ) not documented in Mine Unit 1 package under review.

   a. Re-baselining of the monitoring wells along the perimeter.

      Seventeen of the perimeter wells were recompleted in response to discussions with WDEQ and, based on documentation outside of the package, the licensee plans to have a one-time collection of the excursion control parameters and compare the results to the pre-recompletion baseline data. In conversations with WDEQ staff, it is our understanding that several sampling events are planned or have been completed. How is the new information to be evaluated by staff? Were the wells properly redeveloped? Were the wells subject to Mechanical Integrity Tests (MITs) after redevelopment?

      The licensee explained that the 17 wells were subjected to one round of sampling to determine whether or not the baseline changed after the wells were re-completed. The sampling consisted only of the excursion control parameters and field sampling parameters in accordance with the agreement with WDEQ. The licensee believed that MIT testing was done after re-completions prior to the sampling.

   b. Confirmatory pumping test to verify effectiveness of boreholes/abandonment.

      Based on documentation outside of the package, it is our understanding that the licensee will perform a confirmatory pumping test to duplicate a test performed in 2008. How will the staff be able to review this document? Can it be reasonably expected that the licensee will be able to document changes due to the abandonment from changes to the well configurations that have been performed since the earlier tests?

      The licensee indicated that they are in the process of locating the abandoned boreholes and hopes to complete the pump test prior to the end of the year. The licensee believes that the pumping test will be to demonstrate effectiveness of borehole abandonment. The staff noted that changes to the wells since the last pumping test may hamper any evaluation. The staff noted the recompletions and well redevelopment of MP-109. The licensee believes that the pumping test will focus on the ore zone and that the redevelopment will not have an impact on water levels.

2. Methodologies not included and/or contrary to the approved license application.

   a. Line Drives.

      The package includes line drives but line drives were not discussed in the application. How will the licensee ensure control on the fluid migration for the line drives and for staff to evaluate their proposed operations? With line drives,

not to mention a segmented wellfield, the flare factor is expected to increase over the one proposed in the application. Will the licensee modify the flare factor?

The licensee believes that a line drive is a modification to the 5-spot pattern. The licensee expressed concern that numeric modeling was expensive and that the 50-foot wide zone was consistent with their flare determinations.

b. Baseline of Perimeter Wells on a well-by-well basis.

The licensee committed to establishing a baseline for the perimeter and overlying and underlying monitoring wells on a well-by-well basis. The report includes the calculation based on a baseline for the entire networks. Please explain this discrepancy.

The licensee was confused and thought staff's policy was either wellfield-average or well-by-well basis. The staff noted that in the license application, the licensee proposed a baseline on either wellfield average or well-by-well basis which staff reviewed and accepted for the ore zone; however, the licensee committed to well-by-well basis for baselining the perimeter ring or overlying and underlying monitoring wells in the Section 6.2.2 of the approved application. License Condition 11.3E also states this condition.

The licensee believed that they could revise the baseline to a well-by-well basis. The licensee suggested that the staff contact WDEQ to work out differences between the two programs. The licensee suggested that the staff develop an RAI for this issue.

3. Quality Assurance/Quality Control (QA/QC) Issues.

a. Field sampling errors.

The package acknowledges examples of errors in field sampling/processes (e.g., well development) and the licensee acknowledges potential errors in sample identifications in response to staff's earlier request for clarification. The errors could be interpreted as being representative of systematic flaws in the sampling program and how is the staff assured that the remaining data are representative of the aquifer conditions?

The licensee believes that the errors were a small percentage of the total and that errors will occur.

b. Standard Operation Procedures (SOPs).

Has the licensee developed SOPs and QA/QC procedures?

The licensee indicated that they have written SOPs.

c. Timing for MITs.

The licensee commits to performing MITs prior to wells being operational or in service. Please clarify what procedures are considered operation or in service (e.g., measuring water levels during a pumping test)?

The licensee believes that the commitment is to perform MITs prior to being in operation and that water level measurements are not considered operations.

4. Adequacy of the Distribution of Wells.

a. Areas of thinned intervening aquitards.

In the approved application, the licensee committed to selectively placing monitoring wells in the overlying and underlying aquifers in areas where the intervening aquitard thins; however, the package does not address this commitment. Please clarify how the locations of the monitoring wells were selected with this commitment in mind.

The licensee stated that the thickness of the intervening aquitards was considered and that the areas of thin aquitards (5 feet) did not warrant special consideration. The licensee believes that special consideration is if the aquitard is absent.

b. Frequency of one well per four acres with segmented (non-contiguous) wellfields.

The package discusses that the wellfield area is approximately 37 acres and 13 sets of wells meets the WDEQ's requirement of 1 well per 3 acres. However, the 37-acres is based on overlapping zones and the actual area (as used in the surety calculations) for all wellfields subject to injection for each zone is 47 acres. NRC license requires a maximum frequency of 1 well per 4 acres and the 13 wells satisfy NRC's requirement. However, the maximum frequency may be insufficient due to the segmented nature of the wellfield and placement of wells along the margin of several proposed wellfields. Please provide justification that the distribution of monitoring wells is indeed sufficient to demonstrate baseline, restoration, and excursion control.

The licensee believes that the frequency of wells meets the regulatory requirement and is consistent with those wellfields at other licensed areas that have multiple zones.

c. Perimeter well within fault horizon.

One perimeter zone well, M-114, is placed within the fault. How will that well detect an excursion on either side of the fault?

The licensee believes that the well can monitor for an excursion north, south, and within the fault zone.

Rotary Vacuum Dryer Amendment

1. The staff questioned if LCI considered other types of dryers for the processing plant.

   The licensee explained that they did consider other types of dryers, and that they would send information on what they considered.

2. Bag House.

   a. The staff asked how much dust is expected to be collected.

      The licensee stated not much would be produced and any produced would be collected and be recycled.

   b. The staff asked how often the bag filters will be changed.

      The licensee stated only about once every 1 to 2 years.

   c. The staff asked how the licensee will dispose of the used bag filters.

      The licensee stated they will be treated as 11e.(2) byproduct waste.

3. The staff asked if there would be additional air quality monitoring.

   The licensee stated there would be no additional monitoring planned than described in the operational monitoring plan in the technical report (TR).

4. Waste Water Disposal.

   a. The staff asked how the drums will be washed down.

      The licensee stated that drums will be washed down each time a shipment of dry yellowcake is loaded onto a truck, which will occur about once every 2 weeks.

   b. The staff asked how much water will be used in the wash down process.

      The licensee stated that about 5-10 gal/drum and that 42 drums would be loaded on each truck, resulting in 210-420 gallons of water per shipment.

   c. The staff asked how much water will be used in the wash down process.

      The licensee stated that most of the water will be recycled. The water will be coarse-filtered (to remove paint chip-sized particles) before being sent either to the ponds or to deep-well injection.

   d. The staff asked how much waste water will be generated from the condensate tank.

The licensee stated that about 250-500 gallons per batch and that one batch per week.

e. The staff asked how condensate waste water will be generated disposed.

The licensee stated that most of the water will be recycled, but some will be deep-well injected.

5. Particulates.

a. The staff asked what the source is of the emissions table (ML120670157) provided in the email dated March 5, 2012 (ML120670150).

The licensee stated it used an EPA source: AP-42, Vol. 1, 5th ed., 1995. Compilation of Air Pollutant Emission Factors, updated 2008 Chap. 1, Sec. 5 Liquefied Petroleum Gas Combustion.

b. The staff asked if the 19 penetrations in the roof in Figure 4.1-3 Ventilation Diagram dated March 2, 2012 (ML120670164) from propane heaters.

The licensee stated no, the roof penetrations are mostly vents, with radon emission controls and three penetrations are from restrooms.

Designee Qualifications

1. The staff stated that TR Section 5.3.1.1 commits to having the inspector conducting the daily inspection to look for and report to the Operations Manager, Site Supervisor EHS/RSO, and Mine Manager all non-conformances with regulations, SOPs, and as low as is reasonably achievable principle. The NRC staff notes that not "all non-conformances" to regulations and SOPs are addressed in the applicant's proposed training program. Therefore, the applicant should propose training consistent with those commitments.

The licensee stated it did not intend to have the designee know all regulations, but rather the SOPs that relate to the daily inspection.

The staff stated that it is easier to beef up the training program than to provide page changes and recommended including addition training on regulations, SOPs, and ALARA in the training program.

2. The staff stated that the checklist is not consistent with TR Section 5.3.1.1, which states: "The areas inspected will include, but shall not be limited to, the Plant, byproduct storage area, and Storage Ponds." The checklist is limited to the central processing plant (CPP) and does not include all work areas of the licensed facility where radiation areas or radioactive materials may be used as recommended in Regulatory Guide (RG) 8.31. The applicant should revise the program description and the checklist to include all work areas that involve radiation or radioactive materials to be consistent with RG 8.31 and TR Section 5.3.1.1.

The licensee stated that it would modify the checklist to include other buildings that may be added as they become radiation areas or areas where radioactive materials are used, such as header houses. The licensee also stated that it was not their intent to exclude the wellfield from daily inspections.

The staff stated the licensee had proposed a good, solid program for the designee, but the staff identified inconsistencies with their license that could result in an inspection finding.

3. The staff stated that the applicant did not provide a minimum set of qualifications that describes how the Radiation Safety Officer (RSO) determines that the designee candidate has demonstrated "advanced proficiency." For example, TR Section 5.5 states that a test score of 70% is a passing grade of the written or oral test following radiation safety training for new employee and annual refresher classes. How will the applicant show that a designee has demonstrated "advanced proficiency?"

   The licensee stated that the designee would be selected based on achieving a minimum score and the RSO's written assessment of the individual's respect for radiation safety and understanding the responsibilities of the daily inspection, including a hands on evaluation of the designee.

4. The staff stated that the scope of the training in particular areas is not sufficient. Specifically, the designee training must be commensurate with the details in TR Section 5.3.1.1 and 5.7.6.4 to enable the designee to adequately inspect and recognize the significance of issues associated with, inter alia, the specified areas of nonconformance, security features, and access control and for the applicant to comply with the license commitments. In addition, the applicant stated, "all visible contamination shall be cleaned up immediately." The applicant refers to SOPs; however, its training does not appear to address the proper cleanup of contaminated areas.

   The licensee stated that industry practice is that an employee cleans up any spill or contamination immediately and the health physics technician (HPT) or RSO verifies the area is clean with a follow-up survey. LCI would prefer to stick to the industry practice.

   The NRC staff stated there could be upset conditions that require immediate attention of the RSO and that the designee needs more training in the identification and clean-up of contamination than the normal radiation worker.

   The licensee stated that if an upset condition occurs LCI will call the RSO and then follow-up with direction from the RSO.

   The NRC staff stated that more training detail is needed that describes how the designee is to identify that clean-up is needed and that proper clean-up procedures need to be spelled out and covered under the advanced proficiency as determined by the RSO. Additionally, training should address other issues specified in the application including as low as reasonably achievable (ALARA), security features, and access control. The NRC staff stated that it expects the designee to have more knowledge on what is a "non-conformance."

5. The staff noted that the applicant stated that the "designee will not serve as a radiation expert with the qualifications necessary to serve as an RSO or HPT in the event of an emergency or upset condition." The applicant should address how it plans to address the following situations in the absence of the RSO and HPT:

   a. RG 8.31 states that the ventilation rate should be adequate to maintain the concentrations of radon-222 or its daughters and natural uranium from to less than 25% of the Derived Air Concentration (DAC) value specified in Table 1 of Appendix B to 10 CFR Part 20. The staff questions how the designee will know if ventilation rates have been affected (RG 8.30, Para. 2.9) or if there are issues that require the RSO's or HPT's attention. The checklist includes "Tank Ventilation Issues" and the applicant stated in its response to RAI 2c(ii) that "the inspection of the ventilation system will require simply ensuring all of the necessary ventilation systems are on and they are running normally; minimal noise and vibration."

      The licensee stated that when inspecting the ventilation system, the designee will be checking for vibration belt chatter, blade functioning, and if the system is running or not. If there is an issue, the designee will contact the RSO/HPT. If there is an issue with radon, the monitors will alarm. The licensee provided a brief explanation of how the system operates. The licensee pointed out that louvers on ducts direct the exhaust, which has redundant fans. The system will not allow an elution operation if the fans are not operating. If the fans fail, radon must stay in a sealed system and exit in the exhaust.

      The NRC staff stated that RG 8.30, para 2.9 recommends ventilation rate be adequate and asked how the licensee conducts ventilation tests w/garage doors in the CPP open and closed? How does the licensee examine dead spots?

      The licensee stated that air coming into the building enters through an overhead pipe.

      The NRC staff questioned what occurs when operational changes affect the ventilation rate and how would the licensee handle the situation if this occurs during the 3 days that the designee is conducting the daily inspections.

      The licensee stated that it was not the designee's responsibility and that he/she would notify the RSO/HPT.

      The NRC staff stated that if the designee is to notify the RSO/HPT, then the staff wants to ensure that procedures for the designee to know if something has changed that warrants a call to the RSO/HPT are included in the designee's training.

   b. The NRC staff stated that the applicant stated in its response to RAI 2c(ii), "inspection of the continuous working level monitoring device will simply require documenting that the light stack is operating properly" and that it is "not necessary or practical for the Designee, or the RSO for that matter, to perform a detailed inspection of the continuous working level monitoring device on a daily frequency." The NRC staff asked if the licensee performs constancy checks on a routine basis or following an alarm, and if so, asked who conducts these checks in the absence of the RSO and HPT.

The licensee stated that it is the designee's job in the absence of the RSO/HPT. The designee's training will include resetting and checking the response of the continuous working level monitor. The licensee stated they have not yet determined which monitor will be used at the CPP. The licensee further stated that the check is not so much of a function check, but ensuring the monitor has power and checking for error codes. The licensee stated that it does not intend to have the designee perform the constancy checks on the monitors and cannot go into more detail until they determine which monitor will be used.

NRC staff stated that they would review the information on the monitors when it was submitted.

c. The NRC staff asked the licensee what happens during the absence of the RSO/HPT if radiation surveys or RWPs are required and no one is present to do a survey. Is the job shutdown? Who has the authority to shutdown the job? Is the designee going to call the HP staff and go to the plant manager with his concerns?

The licensee stated that if an RWP required health physics (HP) staff coverage during their absence, then the job would wait until HP staff returned.

The licensee also stated that all employees have the authority to shutdown a job and that the RSO is called in to respond to the situation. The RSO stated that he feels he should have the flexibility to use the designee. The licensee stated that it plans to use the designee more in line with a performance based license.

The NRC staff stated that the licensee must provide more information on how the designee will be used.

6. The applicant's response to RA 3 stated, "certain routine radiation safety functions can be performed by a radiation worker other than the RSO or HPT. In such a case, the RSO will use appropriate process, such as the SOP change process or even SERP, to adjust for an alternate radiation worker to perform the task. Regardless, the change will be documented and documentation of adequate training will be on file for NRC inspection." The applicant should define those functions to demonstrate compliance with license condition 9.7, which requires following RG 8.30 and 8.31.

The licensee stated it does not intend to use the designee as the radiation safety staff, but will ensure the designee will be involved to be able to identify and be comfortable with the RSO/HPT's absence.

PUBLIC DISCUSSION: Steve Brown, SENES, Inc. was the only member of the public. Mr. Brown asked what was unique about LCI that would require using radon monitors because no one in the industry uses them.

The applicant stated that not unique, but preferred to use them to identify elevated radon concentrations before they become a hazard.

The NRC stated that using the radon monitors meets acceptance criteria 3.2.3.(3) in NUREG-1569.

ACTION ITEMS:
NRC will provide a detailed meeting summary of the issues discussed and a revised draft license.

The licensee will modify the training program to include the additional information discussed and provide it to the NRC for review and verification.

ATTACHMENTS:
1. Attendee List
2. Meeting Agenda

MEETING ATTENDEES

Topic: Discuss designee qualifications, MU-1, and dryers at the Lost Creek Project in Wyoming

Date: April 30, 2012

NAME	AFFILIATION	PHONE NUMBER	E-MAIL
Wayne Heili*	Ur-Energy, Inc.	307-265-2373	wayne.heili@ur-energyusa.com
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John L. Saxton	HQ NRC	301-415-0697	john.saxton@nrc.gov
Doug Mandeville	HQ NRC	301-415-0724	doug.mandeville@nrc.gov
*Attended by telephone			

MEETING AGENDA
Lost Creek ISR, LLC
April 30, 2012
Room T8-C1

MEETING PURPOSE: Discuss Designee Qualifications, MU-1, and Dryers.

MEETING PROCESS:

Time	Topic	Lead
10:00 a.m.	Introductions	All
	Discussion of Designee Qualifications	All
	Discussion of MU-1 Package	All
	Discussion of Dryer Amendment	All
1:30 p.m.	Summary of Action Items	Moderator
	Public Comment/Questions	Moderator
2:00 p.m.	Adjourn	

Attachment 2