

October 28, 2011

MEMORANDUM TO: Bill Von Till, Chief
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

FROM: Douglas Mandeville, Project Manager **/RA/ by S. Cohen for**
Uranium Recovery Licensing Branch
Decommissioning and Uranium Recovery
Licensing Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
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SUBJECT: PUBLIC MEETING SUMMARY

On September 19 and 20, 2011, a public meeting was held with Cameco Resources (Cameco), doing business as Power Resources, Inc., (PRI) at Cameco's office in Casper, Wyoming. The purpose of the meeting was to discuss PRI's supplement to its license renewal application. A summary of the meeting is enclosed.

Docket No: 40-8964
License No: SUA-1548

Enclosure: Meeting Summary

cc: Meeting Attendees (via email)

CONTACT: Douglas Mandeville, FSME/DWMEP
(301) 415-0724

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DATE	10/28/11	10/28/11	10/28/11

OFFICIAL RECORD COPY

MEETING REPORT

DATE: Monday, September 19 – Tuesday, September 20, 2011

TIME: See agenda (Attachment1)

PLACE: Cameco Resources
550 North Poplar Street, Suite 100
Casper, WY 82601

PURPOSE: For the U.S. Nuclear Regulatory Commission (NRC) staff to review the Smith Ranch Highland Uranium Project license renewal application prior to submission to identify any major acceptance or technical review issues.

ATTENDEES:

See Attendees List (Attachment 2).

BACKGROUND:

By letter dated August 12, 2010, Power Resources, Inc. (PRI), doing business as Cameco Resources (Cameco), submitted to the U.S. Nuclear Regulatory Commission (NRC) an application to renew Source Materials License SUA-1548, which authorizes uranium in-situ recovery (ISR) operations at the Smith Ranch-Highland Uranium Project (SR-HUP) and its related satellite facilities. During the acceptance review, the staff identified several items that were either not consistent with regulatory requirements or did not appear to be present in the license renewal application (LRA). Therefore, the staff suspended its review of the LRA to provide Cameco an opportunity to supplement the LRA to address the issues identified during the acceptance review. The staff held a public meeting with Cameco to discuss the supplement to the LRA on March 17, 2011. By letter dated April 28, 2011, Cameco requested a pre-submission application review, to which the staff agreed and undertook at this meeting.

DISCUSSION:

NRC staff read the opening statement for the meeting. The staff explained that the two-day meeting would be conducted at Cameco's office in Casper and that a two-hour debrief would be scheduled for late afternoon on September 20, 2011. Furthermore, the supplement to the LRA will also not become part of the meeting summary, because it was not distributed to meeting attendees or removed from the premises by meeting attendees.

Cameco provided an overview of the supplement to the LRA. Cameco has developed a submittal that consists of a technical report (TR) and an environmental report (ER). The TR is a standalone document. The ER is a summary document that contains cross references to a series of appendices that parallel the Wyoming Department of Environmental Quality (WDEQ) permit for the facility.

No members of the public were present for the meeting or the debrief on Tuesday afternoon.

Enclosure

Debrief Notes:

NRC staff stated that it reviewed a substantial portion of both the technical and environmental reports. The staff then summarized the findings by major topics and issues, noting that many other comments were provided in the application itself. Summarized comments are as follows:

General Comments:

- Cameco should be clear in describing the proposed action. As currently structured in both the technical report (TR) and environmental report (ER), the proposed action has not been clearly identified. The proposed action should address all facilities authorized to operate under license SUA-1548.
- Cameco should use consistent terminology when referring to the facility. For example, the term “Smith Ranch” appeared to be used in a way that at times included the Reynolds Ranch satellite and at times excluded the Reynolds Ranch satellite facility. It may be helpful to include an explanation of the terminology near the beginning of the TR and ER.
- The license renewal application (LRA) does not always appear to indicate which aspects of the facility are “new and different.” Clearly identifying changes made to the facility since the last renewal will allow the NRC staff to focus its review on those items. Note that to the extent possible, the staff would prefer that previously reviewed and approved narratives be included in this LRA so that a standalone document describing all aspects of the current facility exists. For example, Cameco’s current excursion monitoring process has been previously reviewed and approved by the staff. The description of the excursion monitoring program should be included, even if there are no proposed changes, so that a complete record of activities at the site exists.

TECHNICAL REPORT (TR)

Radiation protection comments

- The LRA appears to contain an appropriate description of background radiological conditions. However, the LRA does not describe what was previously approved, and does not mention other RG 4.14 parameters that are sometimes collected.
- The LRA does not appear to include discussion of groundwater and surface water sampling conducted during the initial pre-operational sampling or if groundwater and surface water quality has changed.
- The LRA does not appear to include results of radon and particulate samples collected during pre-operational sampling or during operations.
- The LRA does not appear to clearly identify the qualifications for persons designated to perform inspections in the absence of the radiation safety staff. Additionally, the LRA does not appear to identify personnel outside of the radiation safety staff who scan out resin trucks.
- The LRA does not appear to include a discussion related to designation of non-radiation safety staff to scan out equipment for unrestricted release.
- The LRA does not appear to identify the qualified designee that conducts the radiation safety training.

- The LRA does not appear to identify the staff position who are trained on USDOT regulations for shipping yellowcake and byproduct material.
- The staff was not able to locate the section of the LRA where specialized training for the radiation safety officer or radiation safety technician is discussed.
- The staff is aware of at least one instance of a cited violation during an inspection related to designation of radiation areas. The LRA did not appear to discuss the cause and solution addressing this violation.
- The LRA did not appear to include an interpretation of the radon data collected at the facility.
- The LRA did include a discussion of the vacuum dryers and described the dryers as being very low emission. However, the LRA did not appear to discuss the emission control systems that work with the dryer to minimize emissions.
- The LRA is not consistent when describing the plans for the dryer at the Highland Processing facility.
- The staff understands that Cameco is performing a detailed characterization investigation. This program, as well as the results collected to date, should be discussed in the LRA to complete discussions of airborne uranium and other health physics issues.
- The LRA does not appear to discuss how the radiation protection program will be staffed at the remote satellites (Ruth, North Butte, and Gas Hills).
- The LRA does not appear to include a discussion of historical data related to personnel contamination surveys.
- Should references to the EMS manual actually be to the SHEQ manual?
- The LRA does not appear to include data from its duplicate sampling program. This information is needed to determine whether Cameco's sampling and analytical procedures are adequate.
- The LRA does not appear to present any data on air particulates at North Butte.
- The LRA presents radon concentrations without progeny. Would the radon progeny affect dose?
- What other means will Cameco use to estimate effluents in addition to its environmental monitoring program?
- The LRA does not appear to discuss the methodology that was used when conducting the preliminary radiation surveys.
- Does Cameco have soil cleanup criteria for radium benchmark dose assessment?

Hydrogeology comments

- The LRA does not appear to discuss the potential oil and gas activity that may occur within or near the license area. The staff observes the presence of oil and gas exploration and drilling within or near the license area may represent a safety issue if control of production fluids cannot be maintained.
- The LRA does not appear to include a review of any new water wells within license area and within 2km of the license area boundary.
- For the North Butte satellite, the LRA does not appear to address coal bed methane (CBM) activities. Specifically, the staff is interested in permitted locations of CBM wells and impoundments at North Butte.
- For the North Butte satellite, the LRA does not appear to propose a method to distinguish

between potential CBM and ISR impacts to groundwater.

- For the North Butte satellite, the LRA does not appear to address characterization of the surficial aquifer (i.e., depth to water maps and connection to surface water drainages).
- For the North Butte satellite, the LRA does not appear to include a commitment to sample all private wells within 1km of the license boundary.
- For the North Butte satellite, the LRA does not appear to address cumulative aquifer drawdowns in a manner that considers other nearby ISR operations.
- For the North Butte satellite, the LRA discusses locating the monitor well ring 1000 feet from mine unit boundaries. Typically, licensees have proposed a distance of approximately 500 feet between the mine unit and monitor well ring. The LRA should include some technical justification or explanation of the selection of a 1000 foot separation distance.
- For the North Butte satellite, the LRA should reference any previous analyses related to the deep disposal wells. Alternatively, Cameco could present an ALARA analysis consistent with the requirements of 10 CFR 20.2002.
- The LRA should include a discussion on the location, screen intervals, and sampling of North Butte excursion monitoring wells.
- The LRA does not appear to include a commitment to perform a mechanical integrity test (MIT) for any well suspected to have damage due to operational problems.
- The LRA does not appear to include a commitment to maintain an inward hydraulic gradient until stability monitoring is initiated.
- The LRA does not appear to address the use of pressure relief valves at injection wellheads.
- The LRA does not appear to discuss how power outages are managed at header houses. The LRA could include a discussion on the backup power systems, duration of backup power available or other site features available to provide control of production fluids in the mine units in the event of a power outage.
- The LRA does not appear to include an updated disposal water balance that accounts for the new deep disposal wells available at Smith Ranch. The disposal water balance and related restoration schedule should be based on realistic disposal rates which have been achieved and not permitted rates.
- The LRA does not appear to include a table summarizing the frequency of storage pond leaks. In addition to summarizing the leaks that have occurred, the LRA should describe any changes to the design or operation of the ponds that have been made to reduce the frequency of leakage.
- The LRA does not appear to include a discussion of the monitoring results at purge storage reservoir 2 (PSR-2) or the consultant's report which concluded that fluids in PSR2 have seeped into surrounding sediments. The LRA also does not include the proposed PSR2 characterization monitoring plan to determine if fluids from PSR2 have leaked into groundwater.
- The LRA appeared to include placeholders for table and figures summarizing monitoring data collected in for the land application system at PSR-2. These table and figures should be completed and an analysis of the results should be included in the LRA.
- The LRA does not appear to include QA plan for the onsite lab.
- The LRA do not appear to include a commitment to submit mine unit hydrologic packages to the NRC for review only.
- The staff has observed a lack of clarity of the aquifer exemption boundary for the

licensed mine units. The LRA should include information supporting Cameco's interpretation of the aquifer exemption boundary for all existing and proposed mine units.

- The LRA does not appear to include a commitment that restoration excursion monitoring be continued until restoration within a mine unit is approved by the NRC. The staff observes that an appropriate monitoring interval can be proposed.
- The LRA does not appear to include a commitment that all wells on excursion be restored to the standards identified in 10 CFR 40, Appendix A, Criterion 5B5.

Miscellaneous comments

- In the LRA, license SUA-1548 should be referred to as a Materials license because the license is for both source and by product material.
- License SUA-1548 currently has a average monthly flow rate limits of 20,000 gallons per minute at Smith Ranch – Highland and 4,500 gallons per minute at Reynolds Ranch. These flow rate limits are exclusive of restoration flow. License SUA-1548 does not identify flow rate limits for the Ruth, North Butte, or Gas Hills satellites. The LRA should clearly identify the currently licensed flow rates and any proposed changes to these rates.
- The LRA does not appear to discuss aspects of meteorology such as: details about weather stations (height of measurements), stability class, joint frequency distributions, and inversion heights.
- The LRA does not appear to incorporate the North Butte pond design.
- The LRA is not clear on whether or not Cameco plans to use bioremediation during groundwater restoration.

ENVIRONMENTAL REPORT (ER)

- The LRA does not appear to discuss toll milling activities even though it has been approved for license SUA-1548.
- The LRA should include a discussion of all other federal or state permits required for operation. The status of the permits identified should also be discussed.
- The LRA should include a discussion of any agency consultations that have occurred and the results of the consultations.
- The No Action Alternative identified in the LRA should describe the full range of activities that would occur if this alternative is selected (i.e., groundwater restoration, facility decommissioning, and surface reclamation). As currently structured, the No Action Alternative only appears to discuss the business implications to Cameco.
- The cumulative effects section does not appear to discuss any activities other than those performed by Cameco. The cumulative effects section of the LRA should include a discussion of other on-going activities in the vicinity of the license area. The staff is aware of resource development activities related to wind, CBM, as well as oil and gas that are currently being performed or that are proposed to occur near the sites included in license SUA-1548.
- The discussion of the affected environment in the LRA should focus less on the original baseline characteristics of the sites and more on the current status of the affected environment and whether it has changed since the previous environmental review.

- The LRA should be clear in identifying the 10-yr period considered in the renewal as well as the activities proposed to take place during this period, including the activities that will take place at the licensed but unconstructed satellite facilities.
- The LRA, within the proposed action section, should focus less on discussing the generic ISR process and more on discussing the specific activities proposed by Cameco for the renewal period.
- When discussing land use within an 80-km radius of the facility, it is not clear if the discussion in the LRA is focused on the Smith Ranch central processing plant, the license area, or the remote satellites at North Butte, Ruth, and Gas Hills.
- When discussing land use and cumulative impacts, the LRA could provide clarity by providing the distance to different outside projects and activities from the nearest license boundary instead of from the nearest town.
- The LRA appears to reference a report prepared by Aquavera that evaluates drawdown impacts from CBM activities. This report should be properly referenced in the application. Additionally, Cameco should consider including the report in the LRA if the document reaches a conclusion relevant to the staff's environmental review.
- The LRA appears to include a discussion of worker traffic associated with the licensed activities, but does not appear to include a discussion related to the number and frequency of shipments associated with licensed activities.
- The LRA does not appear to address the direct impacts of operations related to the Gas Hills or Ruth satellites nor does it appear to address the combined effects of the Smith Ranch/Highland, North Butte, Ruth, and Gas Hills operations on the environmental resources shared by these projects.
- The LRA discussion of the affected environment for soils does not appear to reflect the spills that have occurred at the facility. The LRA should also identify what changes have been made to reduce the number of spills (including pipe leaks and evaporation pond leaks) at the facility and whether or not spills are expected to continue.
- The LRA mentions correspondence with the Wyoming Department of Game and Fish, as well as the U.S. Fish and Wildlife Service. It is not clear if the correspondence includes activities at North Butte.
- The LRA, within the section on the affected environment, discusses potential impacts to air quality due to continued operations. This discussion should instead be presented within the LRA section on environmental impacts. The discussion of air quality in the affected environment section should instead focus on the current state of the air quality due to the current activities at and near the project sites.
- The discussion of noise in the LRA does not clearly identify the nearest noise receptor for each project site.
- The LRA contains statements that are not properly referenced. For example, the LRA cites a Wyoming State archaeological report, but does not include a citation for the reference. The LRA also cites a 25% threshold for transportation impacts, but does not include a reference for this threshold.
- The LRA does not clearly describe the status of any tribal consultation activities related to North Butte, namely with respect to the Pumpkin Buttes.
- The LRA identifies traffic impacts as being a few trucks per day or less. When possible, it is better to quantify a number instead of using a term like "few."
- The LRA, within the section on environmental impacts, should clarify whether the

anticipated impacts during the renewal period are the same as the current impacts or whether the impacts are expected to change due to changes to the activities at the site and/or changes to the affected environment.

- The LRA uses the GEIS to support impact conclusions. However, it may be more useful to refer to previous environmental reviews prepared specifically for Smith Ranch and the satellite facilities instead of or in addition to the GEIS.
- The LRA does not appear to clearly describe the amount of soil disturbance that has occurred to date and the amount of anticipated soil disturbance during the renewal period.
- The LRA states that there would be no impact to soil under the No Action Alternative. However, it would seem that when compared with the Proposed Action, there would be less soil disturbance and currently disturbed soil would be restored sooner.
- The LRA does not appear to include a discussion of seismic impacts within the section on impacts to geology and soils.
- The LRA does not appear to discuss impacts to groundwater resulting from excursions. The LRA also does not appear to identify what, if any, changes have been made to reduce the frequency of excursions at the facility and whether or not the frequency of excursions is expected to change going forward into the renewal period.
- The LRA appears to include a statement that fugitive dust can be mitigated, but it is not clear whether Cameco proposed to implement the mitigation measures discussed.
- The LRA application appears to include a statement that there will be no noise impacts due to the No Action Alternative. However, the LRA does not appear to provide a basis for this conclusion.

ACTIONS:

None

ATTACHMENTS

1. Agenda
2. List of Attendees

**MEETING AGENDA
Cameco Resources, Inc.
September 19-20, 2011**

MEETING PURPOSE: To perform a Pre-Submission Review of Smith Ranch License Renewal Application. .

MEETING PROCESS:

September 19, 2011

<u>Time</u>	<u>Topic</u>	<u>Lead</u>
8:30 a.m.	Introductions	All
	Pre-Submission Review	NRC
5:00 p.m.	Adjourn	

September 20, 2011

<u>Time</u>	<u>Topic</u>	<u>Lead</u>
8:30 a.m.	Pre-Submission Review	NRC
	Review Debrief	NRC
	Public Comments/Questions	
5:00 p.m.	Adjourn	



MEETING ATTENDEES

Date: September 19 and 20, 2011, Cameco Resources, Casper, Wyoming.
8:00 am to 5:00 pm

Topic: Cameco Resources Smith Ranch Highland *In Situ* Recovery Facility

NAME	AFFILIATION	PHONE NUMBER
Douglas T. Mandeville	USNRC	301-415-0724
Stephen J. Cohen	USNRC	301-415-7182
Chris Pugsley	Thompson & Pugsley, PLLC	202-496-0780
Anthony J. Thompson	Thompson & Puglsey, PLLC	202-496-0780
Arlene Faunce	Cameco	307-358-6541
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