

May 2, 2016

Mr. Larry Reimann
Manager, Technical Services
Cameco Resources
550 North Poplar Street
Suite 100
Casper, WY 82601

SUBJECT: RESULTS OF ACCEPTANCE REVIEW FOR RESPONSE TO REQUEST FOR
ADDITIONAL INFORMATION ON LICENSE RENEWAL APPLICATION FOR
SMITH RANCH HIGHLAND URANIUM IN-SITU RECOVERY FACILITY,
CONVESE COUNTY, WYOMING

Dear Mr. Reimann:

The U.S. Nuclear Regulatory Commission (NRC) issued its Request for Additional Information (RAI) on Cameco Resources (Cameco) license renewal request for the Smith Ranch Highland uranium in-situ recovery facility on May 2, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession Number ML13098A040). Cameco submitted its responses to the NRC staff's request on November 18, 2014 (environmental report, ADAMS Accession Number ML14353A314) and April 21, 2015 (technical report, ADAMS Accession Number ML16063A418).

The NRC staff has completed its acceptance review of the RAI responses. In its May 2, 2013 letter, the NRC staff identified a total of 115 RAIs (both safety and environmental). Cameco has provided sufficient information on 88 of the responses. However, the remaining 27 RAI responses do not provide sufficient information for the staff to proceed with its review. Therefore, additional discussions or submittals will be necessary to resolve these remaining RAIs. The enclosed table identifies the status of the RAI responses. For the responses that do not provide sufficient information, the NRC staff has included a brief explanation of its finding.

Once Cameco has reviewed the enclosed table, a public meeting should be scheduled with the NRC staff to further discuss the RAI responses that did not provide sufficient information for the staff. As the RAI responses do not provide sufficient information, the NRC staff is currently unable to complete the review of the license renewal request. This will delay completion of the NRC staff's review. Once the RAI responses are determined to be sufficient, the NRC staff will be able to identify the schedule for the remainder of the review.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," 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 ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

L. Reimann

- 2 -

If you have any questions regarding this matter, please contact me by telephone at (301) 415-0724, or by e-mail at Douglas.Mandeville@nrc.gov.

Sincerely,

/RA/

Douglas T. Mandeville, Project Manager
Uranium Recovery Licensing Branch
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket No.: 040-8964
License No.: SUA-1548

Enclosure:
Status of Cameco Resources Smith Ranch
License Renewal RAI Responses

L. Reimann

-2-

If you have any questions regarding this matter, please contact me by telephone at (301) 415-0724, or by e-mail at Douglas.Mandeville@nrc.gov.

Sincerely,

/RA/

Douglas T. Mandeville, Project Manager
Uranium Recovery Licensing Branch
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket No.: 040-8964

License No.: SUA-1548

Enclosure:

Status of Cameco Resources Smith Ranch
License Renewal RAI Responses

DISTRIBUTION: J. Whitten, R-IV L. Gersey, R-IV A. Kock, NMSS

ADAMS Accession No.: ML16109A207

OFFICE	NMSS:PM	FCSE	NMSS:LA	NMSS:BC	NMSS:PM
NAME	D. Mandeville	J. Park	S. Achten	B. VonTill	D. Mandeville
DATE	4/20/2016	4/28/2016	4/20/2016	4/22/2016	4/29/2016

OFFICIAL RECORD COPY

Status of Cameco Resources Smith Ranch License Renewal RAI Responses

Technical Report RAIs	RAI Response Sufficient to Proceed?	Explanation
Section 1- Proposed Activities		
RAI 1	Yes	
Section 2 - Site Characterization		
RAI 2	No	No correlation shown between the short-term Smith Ranch data and the long-term Glenrock data (quantitative assessment) or a qualitative assessment (visual graphs). No demonstration that the short-term meteorological data (wind rose and wind speed) at Smith Ranch is representative of the long-term meteorological data (wind rose and wind speed) at the Glenrock Mine. Cameco demonstrated representativeness for North Butte and Gas Hills.
RAI 3	Yes	
RAI 4	Yes	
RAI 5	Yes	
RAI 6	Yes	
RAI 7	Yes	
RAI 8	Yes	
RAI 9	Yes	
RAI 10	Yes	
RAI 11	Yes	

Enclosure

Technical Report RAIs	RAI Response Sufficient to Proceed?	Explanation
Section 3 - Description of Proposed Facility		
RAI 12	No	Not clear if the proposed wellfields have been previously reviewed and approved by the NRC. If they have not been previously reviewed and approved by the NRC, there is not sufficient information for the NRC to allow ISR operations in these mine units.
RAI 13	No	Lack of monitoring of underlying layer beneath Mine Unit (MU) 1 is not acceptable.
RAI 14	Yes	
RAI 15	Yes	
RAI 16	Yes	
RAI 17	No	No discussion of existing Umetco ACL and detection of incursions into MU 5.
RAI 18	No	Section 3.4.8 discussed baseline and excursion monitoring wells and sampling if twinning and recompletes in same sand. No discussion of baseline and excursion monitoring when there are multiple targeted sands such as in MU 2, 3, 4, and potentially 5.
RAI 19	Yes	
RAI 20	Yes	
RAI 21	Yes	
RAI 22	No	No discussion of casing leak investigation or path forward in RAI response. No link to any documents related to casing leak investigation.
RAI 23	No	No discussion of the Purge Storage Reservoir 2 corrective action in the RAI response.
RAI 24	No	No discussion of plans for operating in an unconfined aquifer in RAI response.
RAI 25	Yes	
RAI 26	Yes	

Technical Report RAIs	RAI Response Sufficient to Proceed?	Explanation
RAI 27	Yes	
RAI 28	Yes	
RAI 29	No	No discussion of plans for operating in an unconfined aquifer in RAI response.
RAI 30	Yes	
RAI 31	No	No discussion of Umetco ACL in RAI response.
RAI 32	No	No discussion of Umetco ACL or commitment to evaluate operation of MU 5 and impacts on ACL in RAI response.
Section 4 - Effluent Control Systems		
RAI 33	Yes	
RAI 34	Yes	
Section 5 - Operations		
RAI 35	Yes	
RAI 36	No	Cameco's training program for daily walk-throughs is acceptable, Cameco's plan to address exit surveys for release of packages or items is not acceptable and needs further clarification.
RAI 37	No	RAI response did not describe the type (of detector), specification of the range, sensitivity, calibration methods and frequency for beta surveys. Also see response to RAI No. 43.
RAI 38	No	The NRC staff does not agree with the response to conduct an isotopic analysis once per license renewal period, which is currently every 10 years. The NRC staff recommends once every year to account for dose corrections due to the existing air concentrations currently being measured in the plant.

Technical Report RAIs	RAI Response Sufficient to Proceed?	Explanation
RAI 39	No	Not clear how the isotopic data requested in RAI No. 38 will be used for exposure calculations.
RAI 40	No	RAI response does not describe how the environmental monitoring locations are consistent with the guidance in Regulatory Guide 4.14.
RAI 41	Yes	
RAI 42	Yes	
RAI 43	No	RAI response does not include information on type of detector, range, sensitivity. Response to this RAI impacts RAI No. 37 as well.
RAI 44	No	Although Cameco did state the actual frequency for air particulate sampling, the RAI response did not provide an adequate justification for sampling monthly.
RAI 45	No	Based on correspondence from Cameco, NRC staff is expecting a response to this RAI by June 30, 2016.
RAI 46	No	Citing a finding for Crow Butte as a reason for not sampling at Smith Ranch is not acceptable. Does MILDOS evaluation show vegetation ingestion pathway accounts for less than 5 percent of the projected dose?
RAI 47	No	Cameco's response appears to have addressed the RAI, but further clarification is needed to confirm. The response should be specific about which on-site meteorological data was used for each analysis.
RAI 48	No	RAI response is not acceptable as it does not treat each remote satellite as a separate stand-alone environmental monitoring program.
RAI 49	Yes	
RAI 50	Yes	
RAI 51	Yes	

Technical Report RAIs	RAI Response Sufficient to Proceed?	Explanation
RAI 52	No	The NRC staff recognizes that Table 5-18 of the Technical Report has been updated. However, it is not clear if the Pfister ranch well is included in Table 5-18. Is this well within the 2 kilometer distance?
RAI 53	No	The NRC staff understands that the license requires monitoring of ground water wells within 1 kilometer of operating wellfields and there are currently no wells that meet this criteria. The NRC staff's position is that wells within 2 kilometers should be monitored.
Section 6 - Ground Water Quality Restoration, Surface Reclamation, and Facility Decommissioning		
RAI 54	Yes	
RAI 55	Yes	
RAI 56	Yes	
RAI 57	Yes	
RAI 58	No	Further discussion is needed to understand Cameco's plan for stability monitoring. The NRC staff's position is that stability monitoring will be performed until stability is achieved.
RAI 59	Yes	
RAI 60	No	RAI response is not acceptable as it does not present a methodology for clean-up of spills that is consistent with the radium benchmark dose methodology.
Environmental Report RAIs	RAI Response Sufficient to Proceed?	Explanation
General		
RAI GEN-1	Yes	
RAI GEN-2	Yes	

Environmental Report RAIs	RAI Response Sufficient to Proceed?	Explanation
RAI GEN-3	Yes	
RAI GEN-4	Yes	
RAI GEN-5	Yes	
Facility Design		
RAI FD-1	Yes	
Cumulative Impacts		
RAI CI-1	Yes	
RAI CI-2	Yes	
RAI CI-3	Yes	
Land Use		
RAI LU-1	Yes	
RAI LU-2	Yes	
Transportation		
RAI TR-1	Yes	
RAI TR-2	Yes	
RAI TR-3	Yes	
Geology		
RAI GEO-1	Yes	
Water Resources		
RAI WR-1	Yes	
RAI WR-2	Yes	Need to clarify appropriate figure to use for Smith Ranch permanent BMPs (Should TR Figure 3.18.1 be used instead of the referenced TR Figures 3.18.1A and 3.18.1B, which could not be found).
RAI WR-3	Yes	
RAI WR-4	Yes	

Environmental Report RAIs	RAI Response Sufficient to Proceed?	Explanation
RAI WR-5	Yes	
RAI WR-6	Yes	
RAI WR-7	Yes	
RAI WR-8	Yes	
Ecological Resources		
RAI ECO-1	Yes	
RAI ECO-2	Yes	
RAI ECO-3	Yes	
RAI ECO-4	Yes	
Air Quality		
RAI AQ-1	Yes	
RAI AQ-2	No	RAI response stated that site-specific data is not collected and regionally applicable discussion was provided instead. Staff considers estimate of site-specific data could be provided based on type, capacity, and number of equipment and machines in operation at the project sites and applicable emission factors
RAI AQ-3	Yes	
RAI AQ-4	Yes	
RAI AQ-5	Yes	
Visual Resources		
RAI VIS-1	Yes	
RAI VIS-2	Yes	
RAI VIS-3	Yes	
RAI VIS-4	Yes	

Environmental Report RAIs	RAI Response Sufficient to Proceed?	Explanation
Socioeconomics		
RAI SOC-1	Yes	
RAI SOC-2	Yes	
RAI SOC-3	Yes	
RAI SOC-4	Yes	
RAI SOC-5	Yes	
Environmental Justice		
RAI EJ-1	Yes	
RAI EJ-2	Yes	
RAI EJ-3	Yes	
Public and Occupational Health and Safety		
RAI H&S-1	Yes	
RAI H&S-2	Yes	
Waste Management		
RAI Waste-1	Yes	
RAI Waste-2	Yes	
RAI Waste-3	Yes	
RAI Waste-4	Yes	
RAI Waste-5	Yes	
Historical and Cultural Resources		
RAI CR-1	Yes	
RAI CR-2	Yes	
RAI CR-3	Yes	
RAI CR-4	Yes	