



October 18, 2013

ATTN: Document Control Desk

Mr. Drew Persinko, Deputy Director
Decommissioning and Uranium Recovery Licensing Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Programs
Mailstop T8 F5
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

CERTIFIED MAIL # 7013 0600 0002 3995 3389

RE: NRC License SUA-1548, Docket No. 40-8964
Smith Ranch-Highland Uranium Project, Response to NRC's Request for Additional
Information - 2012-13 Financial Assurance Estimate (TAC J00677)

Dear Mr. Persinko:

Power Resources, Inc. d/b/a/ Cameco Resources (Cameco) is herein submitting a response to the NRC's request for additional information dated May 29, 2013, on the 2012-13 Surety Estimate Updates for the Smith Ranch-Highland Uranium Project (SR-HUP).

As previously conveyed to the NRC under cover dated July 30 and September 25, 2013, this response is being submitted as a follow-up to Cameco's 2013-14 Surety Estimate Updates for SR-HUP. As requested in the NRC's RAI dated May 29, 2013, the attached response includes a description of how the NRC's comments were addressed in Cameco's 2013-14 surety updates for the SR-HUP.

If you have questions or need additional information please feel free to contact me directly at (307) 316-7586.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott A. Bakken".

Scott A. Bakken
Manager, SHEQ Systems & Compliance

CAMECO RESOURCES

Smith Ranch-Highland
Operation

Mail:

P.O. Box 1210
Glenrock, WY
82637 USA

Tel: (307) 358-6541

Fax: (307) 358-4533

www.cameco.com

SB/sb

Att: Response to NRC's Request for Additional Information for the Annual Financial Assurance Update for Cameco's Smith Ranch-Highland Uranium Project

cc: D. Mandeville, USNRC w/Att
File SR 4.6.4.1 w/Att
File HUP 4.6.4.1 w/Att

ec: CR-Cheyenne

**Cameco's Response to NRC's Request for Additional
Information (RAI) for the Annual Financial Assurance Update
for the Smith Ranch-Highland Uranium Project**

Note – The first three RAIs address items common to both the Smith Ranch and Highland estimates. RAI numbers four and five address components of the Smith Ranch estimate. RAI number six is related to the Highland estimate.

RAI 1

Description of Deficiency

As currently presented, the financial assurance estimate does not separately identify costs necessary to address decontamination, decommissioning, and restoration activities to meet Wyoming Department of Environmental Quality (WDEQ) and U.S. Nuclear Regulatory Commission (NRC) requirements.

Basis for Request

License Condition 9.5 to Source Materials License SUA-1548, in part, requires:

The licensee also must ensure that the surety, where authorized to be held by the State, identifies the NRC-related portion of the surety and covers the above-ground decommissioning and decontamination, the cost of offsite disposal of 11e.(2) byproduct material, soil and water sample analyses, and groundwater restoration associated with the site.

Formulation of RAI

Staff requests that Cameco review the cost estimate and identify separate NRC and WDEQ costs, regardless of any overlap.

Cameco Response

Cameco's surety estimates for the Smith Ranch and Highland projects were calculated using the WDEQ-Land Quality Division's (LQD's) In-Situ Leach (ISL) Uranium Bond Format that has been used and accepted by the WDEQ and NRC since 1998. This bond format contains individual worksheets for all phases of restoration, reclamation and decommissioning and, as such, identifies cost components associated with various activities including ground water restoration, facility decontamination and decommissioning, 11e.(2) byproduct material disposal, soil and water analyses, etc.

Based on the WDEQ- and NRC-approved Reclamation Plans under Permit(s) to Mine Nos. 603 and 633 and NRC License SUA-1548, the ground water restoration, reclamation and decommissioning costs are considered a common requirement under each regulatory authority and

therefore do not require differentiation between WDEQ and NRC-related costs. To clarify that all portions of the surety estimate are considered “NRC-related”, a footnote has been added to the “TOTALS” sheet of the 2013-14 surety estimates indicating that “Costs reflect both WDEQ and NRC requirements.”

RAI 2

Description of Deficiency

As currently presented, the cost estimate does not adequately differentiate between contractor profit, overhead, and contingency.

Basis for Request

License Condition 9.5 to Source Materials License SUA-1596, in part, requires:

The licensee shall maintain an NRC-approved financial surety arrangement, consistent with 10 CFR 40, Appendix A, Criterion 9, adequate to cover the estimated reclamation and closure costs, if accomplished by a third party, for all existing operations and any planned expansions or operational changes for the upcoming year. Along with each proposed revision or annual update of the surety, the licensee shall submit supporting documentation showing a breakdown of the costs and the basis for the cost estimates with adjustments for inflation, maintenance of a minimum 15 percent contingency.

Additionally, NUREG-1569 states that “[o]verhead costs for labor and equipment and contractor profit may be calculated as separate items or loaded into hourly rates.[i]f included in hourly rates, the unit costs must identify the percentages applied to each area. All costs (unit and total) are to be estimated on the basis of third party, independent contractor costs (include overhead and profit in unit costs or as a percentage of the total).”

Formulation of RAI

Staff recommends that Cameco clarify its subsequent decommissioning cost estimates to differentiate between overhead, contractor profit, and contingency.

Cameco Response

The 2013-14 surety estimates for Smith Ranch and Highland differentiate between contractor profit and overhead and an additional 15% contingency. A footnote has been added to the “TOTALS” sheet of the 2013-14 surety estimates to provide clarification and regulatory references for each line item. For contractor profit and overhead, the “TOTALS” sheet provides reference to the “MASTER COSTS” sheet, which incorporates additional profit and overhead into various third-party master costs as appropriate. Specifically, these costs include a 40% net benefits multiplier for labor, 10% increase for equipment and 10% increase for unit costs obtained from WDEQ, Land Quality Division (LQD), Guideline No. 12.

RAI 3

Description of Deficiency

The financial assurance estimate does not clearly indicate whether credit salvage value is used in the estimate.

Basis for Request

NUREG-1569 states that "[c]redit for salvage value is generally not acceptable in the estimated costs."

Formulation of RAI

The NRC staff requests that Cameco clearly identify whether or not a credit for salvage value is taken in its subsequent cost estimates.

Cameco Response

Consistent with NUREG-1569, Cameco does not take credit for salvage value in the surety estimate calculations for Smith Ranch and Highland. A footnote has been added to the "TOTALS" sheet of the 2013-14 surety estimates indicating that "No salvage value [is] assumed."

Items specific to the Smith Ranch estimate

RAI 4

Description of Deficiency

During its review of the financial assurance estimate, staff identified several potential errors related to unit costs, calculations, and assumptions.

Basis for Request

LC 9.5 requires, in part, that the cost estimate provide supporting documentation, showing a breakdown of the costs and the basis for the cost estimates with adjustments for inflation. NUREG-1569 states that "[u]nit costs, calculations, references, assumptions, equipment and operator efficiencies, et cetera, must be provided."

Formulation of RAI

With respect to unit costs, the following items should be better identified:

- In the annual cost of "Infrastructure, Equipment Maintenance, Replacement and Repairs" in the "Misc Rec" sheet, Section VI the basis for the \$62,000 per year is not

clear; and

- WDEQ Guideline 12 unit costs relied on in various sheets do not appear to be consistent with the most recent WDEQ Guideline 12.

Cameco Response

- The \$62,000 per year for infrastructure, equipment maintenance, replacement and repairs, which has been increased to \$92,320 per year in the 2013-14 surety estimate, is based on planned expenditures during each annual surety period. A notation has been added to the "GWR-SITE" sheet in the 2013-14 surety estimate to identify the basis for this estimate; and
- WDEQ/LQD Guideline No. 12 unit costs used in the 2012-13 surety estimate were based on the most recent (11/2011) version of the guideline available at the time of calculating the estimate. Similarly, Guideline No. 12 unit costs in the 2013-14 estimate are consistent with the 10/2012 version of the guideline. The source of the Guideline No. 12 unit costs has been added to the "MASTER COSTS" sheet of the 2013-14 surety estimate.

With respect to assumptions and activities, the following items should be better described:

- The basis for the estimates of Ft³/day, Ft/day, Pumps/day, Ft³/day, and Number of Days in the "Equip" sheet Sections I.A.1, I.B, I.C.1, I.D.1, and I.E, respectively is not clear;
- Which cell(s) in the UC-GWS DDW sheet provide the "DDW PD Injection Pump" as referenced in the "UC-Electrical Power" sheet;
- Please clarify if the heights of the buildings in the "BLDGS" sheet are actual building heights;
- In the "WF Rec" sheet, Section V. C, PRI previously stated that it would ship such waste to an NRC licensed facility, however the current and previous year's sheet states that it will ship waste to a county landfill facility; please confirm the staff's understanding is correct; and
- In the "WF Rec" sheet, Section IV. C, PRI previously stated that it would dispose such waste on-site, however the current and previous year's sheets state that it will ship waste to a landfill facility; please confirm the staff's understanding is correct.

Cameco Response

- The productivity estimates of Ft³/day, Ft/day, etc. are based on historical estimates for removal and loading of equipment (tankage, piping, etc.) by a third party;
- The "DDW PD Injection Pump" costs, as referenced in the "UC-Electrical Power" sheet of the 2012-13 surety estimate, are included under the "DDW Pumping Costs per 1000 gallons" line item of the "UC-GWS DDW" sheet;
- The heights of the buildings in the "BLDGS" sheet are representative of the actual heights of the buildings;
- The NRC staff's understanding is correct. Section V of the "WF REC" sheet of the

2013-13 surety estimate assumes that header house building material is disposed of at a landfill facility. The same assumption has been incorporated into the 2013-14 surety estimate; and

- The NRC staff's understanding is correct. Section IV of the "WF REC" sheet of the 2012-13 surety estimate assumes that wellhead cover material is disposed of at an off-site landfill facility. The same assumption has been incorporated into the 2013-14 surety estimate.

RAI 5

Description of Deficiency

As currently presented, the financial assurance cost estimate is not clear in identifying its plans for future use of bioremediation at the facility.

Basis for Request

LC 9.5, in part, states that the cost estimate must be "adequate to cover the estimated reclamation and closure costs, if accomplished by a third party... includ[ing] all cited activities and groundwater restoration."

Formulation of RAI

Both the current and prior financial assurance cost estimates state that the bioremediation portion of the estimate is for "information only" and that "data[is] being compiled" Staff requests that Cameco clarify whether it intends to rely on bioremediation in its future cost estimates.

Cameco Response

At this time, Cameco does not intend to rely on bioremediation as a reducing agent during ground water restoration and, instead, has assumed treatment using chemical reductant technology in the surety estimate. A total of 3.5 pore volumes of treatment using reverse osmosis with chemical reductant is assumed for each mine in the 2012-13 and 2013-14 surety estimates. Any references to bioremediation have also been removed from the 2013-14 surety estimate to clarify that Cameco intends to rely on chemical reductant technology in the future.

Item Specific to the Highland estimate

RAI 6

Description of Deficiency

During its review of the financial assurance estimate, staff identified several potential errors related to unit costs, calculations, and assumptions.

Basis for Request

LC 9.5 requires, in part, that the cost estimate provide supporting documentation, showing a breakdown of the costs and the basis for the cost estimates with adjustments for inflation. NUREG-1569 states that "[u]nit costs, calculations, references, assumptions, equipment and operator efficiencies, et cetera, must be provided."

Formulation of RAI

Staff requests that Cameco review these calculations to ensure that the unit costs and assumptions and activities are clearly stated.

With respect to unit costs, the following items should be better identified:

- It is not clear if the Well Sealing unit cost stated in the "WA" sheet, Section V.A is specified in the underground injection control (UIC) permit;
- Numerous unit costs contained in the tables called "Utility Costs," "Chemical Costs," "Analytical Costs," "Seeding Unit Costs" in the "Master Costs" sheet reference existing agreements or invoices, if possible, the dates of this information should be provided;
- No void space factor is identified for contaminated soil removal in the "MISC Rec" sheet, Section IV.B.1 and Section XIII;
- It is not clear what the "RO Maintenance Costs" in the "UC-RO BIO Chem" Sheet are based on; and
- It is not clear what the \$62,000 annual cost of "Infrastructure, Equipment Maintenance, Replacement and Repairs in the "Misc Rec" sheet, Section Xii is based on.

Cameco Response

- The waste disposal well sealing cost of \$11.91/ft in the "WA" sheet of the 2012-13 surety estimate is not specified in any UIC permit that Cameco is aware of. The sealing cost was originally increased to \$11.91/ft as a result of WDEQ review comments on the 2009-10 surety estimate and is based on recommendations (i.e., quote) from a third-party consultant at that time. This sealing cost has been increased to \$13.62/ft in the 2013-14 surety estimate based on updated sealing costs as included in the Application for Modifications and Renewal to UIC Permit 99-347 (i.e., Smith Ranch Wells No. 1 and No. 2).
- The source and date of various master cost references, including agreements, invoices, fee schedules, quotes, fee schedules, etc., has been incorporated into the "MASTER COSTS" sheet of the 2013-14 surety estimate. The 2013-14 surety estimate has also been updated using the most current master cost references, wherever feasible, to ensure that the overall surety estimate is representative of current (2013) dollars.
- No void space factor for contaminated soil removal is included in the "MISC REC" sheet, Sections IV.B.1 and XIII, as the six inches of soil removal is considered to be

a conservative estimate at this time.

- The RO maintenance costs in the “UC-RO BIO Chem” sheet are based on the unit cost and application rate of two chemicals (tripolyphosphate and EDTA) associated with cleaning the RO membranes.
- The \$62,000 per year for infrastructure, equipment maintenance, replacement and repairs, which has been increased to \$92,320 per year in the 2013-14 surety estimate, is based on planned expenditures during each annual surety period. A notation has been added to the “GWR-SITE” sheet in the 2013-14 surety estimate to identify the basis of this estimate.

With respect to assumptions and activities, the following items should be clearly described in any subsequent cost estimate submission:

- The basis for the estimates of Fe/day, Ft/day, Pumps/day, Ft³/day, and Number of Days in the "Equip" sheet Sections I.B, I.C, I.D, and I.E, respectively is not clear;
- Which cell(s) in the UC-GWS DDW sheet provide the "DDW PD Injection Pump" as referenced in the "UC-Electrical Power" sheet;
- In the "MISC REC" sheet, Section X, a basis was not provided for the estimated \$3,055,865 cost associated with "Potential Mitigation Plan for Shallow Well Casing Leak Investigation." Staff understands that Cameco is continuing its evaluation of this issue; however, it is not clear what assumptions were used to develop this estimate.
- In the "EQUIP" sheet, Section I.B lists 2,000 feet of steel pipe but does not calculate its volume in Sections I.B and 11.8,
- In the "GW REST" sheet, Cameco has included costs for refurbishing wellfield infrastructure to facilitate restoration activities. Mine Unit B has not received approval of groundwater restoration activities to date. Infrastructure conditions in Mine Unit B do not appear to be capable of supporting additional ground water restoration activities, however, no costs for infrastructure replacement is included for this mine unit.

Cameco Response

- The productivity estimates of Ft³/day, Ft/day, etc. are based on historical estimates for removal and loading of equipment (tankage, piping, etc.) by a third party;
- The “DDW PD Injection Pump” costs, as referenced in the “UC-Electrical Power” sheet of the 2012-13 surety estimate, are included under the “DDW Pumping Costs per 1000 gallons” line item of the “UC-GWS DDW” sheet;
- The cost estimate for “Potential Mitigation Plan for Shallow Well Casing Leak Investigation” in the “MISC” sheet of the 2012-13 surety estimate was based on a third-party quote for potential investigation activities in the C, E and F-Wellfields and plug and abandonment of shallow monitor wells. The 2013-14 surety estimate has been updated (see “MISC” sheet) based on investigation activities completed during the report period, planned investigation activities during the next one year surety period, anticipated ground water pump and treatment costs and plug and abandonment of shallow monitor wells.
- The 2013-14 surety estimate has been updated based on refurbishment activities in the

Highland Central Processing Plant during the previous year. Sections I.B and II.B have also been updated to account for the volume of steel pipe based on a total length of 645 feet.

- Based on the WDEQ's approval of ground water restoration in Mine Unit B and the quality of ground water consistent with the NRC's restoration criteria, Cameco does not anticipate the need for additional ground water restoration in Mine Unit B. Therefore, the costs for infrastructure replacement are considered not applicable at this time.