



CAMECO RESOURCES
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May 30, 2012

Mr. Doug Mandeville
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Two White Flint North, Mailstop T8 F5
Rockville MD 20852-2738

CERTIFIED MAIL # 7010 1870 0002 1233 7240 RETURN RECEIPT REQUESTED

**RE: Advanced Notification of Processing of Equivalent Feed
NRC License SUA-1548, Docket 40-8964**

Dear Mr. Mandeville:

Power Resources, Inc. d/b/a Cameco Resources (Cameco) is exploring the feasibility of processing equivalent feed from a pilot plant designed to recover uranium from industrial phosphoric acid. The pilot plant is proposing the removal of uranium as a side-stream product from an industrial phosphoric acid circuit for resin elution at a licensed uranium recovery facility. Cameco and the pilot plant have collaborated and proposed to Cameco's Operational Review Committee (ORC/SERP) approach to receiving and processing uranium-loaded resins (ULR) from the pilot plant at the Smith Ranch Central Processing Plant (CPP). As stated in NRC Regulatory Issue Summary (RIS) 2012-06, the analysis would also be applicable to any other sources of ULR not specifically addressed in the RIS, as long as the resins meet all the equivalent feed criteria. The ORC/SERP reviewed the proposal and compared the resins and process to the equivalent feed criteria outlined in the RIS and concluded the resins are indeed ULR.

This will consist of a bench test with 3.5"idx54" HDPE cylinders loaded with secondary ion exchange (SIX) resin transported to the CPP. Each loaded cylinder will contain two (2) gallons of resin with a mass of 0.63 lbs U₃O₈ or 0.53 lbs. uranium per cylinder. The maximum mass per consignment will be 14.8 lbs. uranium. The test will be conducted within confines of the CPP and will demonstrate to the ORC/Safety Environmental Review Panel (SERP) that stripping uranium from the SIX resins will be similar and as efficient as the current approved process at Smith Ranch.

Cameco's analysis will ensure, as normal, that there are no unforeseen contaminants present in the product. Cameco's ORC/SERP process will review, analyze, and document the proposal for full scale production prior to implementation. Cameco will not modify the current approved processing circuit. The ORC/SERP committee has concluded that the test can be completed as presented providing the Regulatory Issue Summary (RIS) was approved, issued and conditions of the RIS were met. The complete ORC/SERP document is on file at Smith Ranch and available for inspection by the NRC.

Per the NRC Regulatory Issue Summary (RIS) 2012-06 issued April 16, 2012, NRC-licensed uranium recovery facilities with licensed IX uranium recovery capacity, whether conventional, heap leach, or in situ leach uranium recovery (ISR), do not require a license amendment for the receipt and processing of "equivalent feed" (e.g., uranium-loaded IX resin media) if certain conditions are met. The conditions and Cameco's fulfillment of those conditions are outlined below:

1. *The resin is chemically and physically essentially the same as that which is currently processed and will be processed using the facility's existing equipment.*

The resin that is used in the ion exchange process at the pilot plant is Dowex 21K, resin which is currently and will continue to be used and processed at the Smith Ranch-Highland's (SRH) Central Processing Plant (CPP) and satellite facilities. The proposed SIX elution test mimics the SRH CPP process utilizing temporary skid mounted cylinder holders mimicking IX columns and fresh eluate directly from CPP tanks T-3A/B to remove uranium from resins. The resins remaining at Smith Ranch's CPP at the conclusion of the test will be incorporated into existing IX resin beds until the resin is considered spent. Spent resin will be disposed of at Cameco's NRC approved 11e.(2) facility.

2. *Processing equivalent feed will not exceed Smith Ranch's currently licensed uranium production limit.*

License Condition 10.1.1 of SUA-1548 grants Cameco production of 5.5 million pounds of U_3O_8 per annum. Cameco produced 1.8 million pounds of U_3O_8 for the year 2011, and the amount of U_3O_8 produced by the test will be minimal compared to normal operations. The 5.5 million pounds of U_3O_8 per annum will not be reached.

3. *Processing the equivalent feed will be within the facility's environmental and safety review envelope.*

The elution is a lab-scale testing rig that will be located within the CPP berm containment-area, will use the same elution method and chemicals as per the existing

CPP, and the product solutions will be returned to the existing rich eluate tank T-6. In addition, the proposed receipt and processing of equivalent feed from a pilot plant has been evaluated by a Safety and Environmental Review Panel (SERP).

As described above, implementation of the test will be in compliance with the conditions outlined in the NRC Regulatory Issue Summary 2012-06. The bench scale test will allow Cameco to verify that full scale IX production from the receipt and processing of equivalent feed from pilot plant can be accomplished using existing equipment, without changes to existing processes, and will be within the facility's environmental and safety review envelope. Specifically, the test will verify that accumulation of unforeseen contaminants does not occur within the existing process.

If you have any questions, please contact Josh Leftwich at 307-316-7600, or email to Josh_Leftwich@cameco.com.

Respectfully,



Josh Leftwich
Director, Safety, Health, Environment and Quality

JL/jmc

cc: Document Control Desk, NRC Certified Mail #7010 1870 0002 1233 7271

cc: Cameco-Smith Ranch-Highland