

November 29, 2006

Mr. Oscar Paulson  
Facility Supervisor  
Sweetwater Uranium Project  
Kennecott Uranium Company  
P.O. Box 1500  
Rawlins, WY 82301-1500

SUBJECT: MODIFICATION TO MILL DECOMMISSIONING PLAN, CATCHMENT BASIN RECLAMATION PROJECT, KENNECOTT URANIUM COMPANY, SWEETWATER URANIUM PROJECT, AMENDMENT NO. 25 TO SOURCE MATERIALS LICENSE SUA-1350 (TAC J00503)

Dear Mr. Paulson:

By letter dated October 3, 2006, Kennecott Uranium Company (KUC) submitted to U.S. Nuclear Regulatory Commission (NRC) staff a request to amend the portion of its Mill Decommissioning Plan pertaining to the catchment basin reclamation. Specifically, KUC proposes to install drains at the bottom of the 40-foot deep excavation to collect potentially contaminated seepage below the clarifier and mill building structural foundations. KUC states that this change would allow it to prevent further contaminant migration and facilitate future site decommissioning activities. NRC staff has reviewed and approved this amendment request. Our review is documented in a technical evaluation report enclosed with this letter (Enclosure 1). NRC staff has also enclosed License Amendment No. 25 (Enclosure 2) with the appropriate amendment to License Condition 9.10.

This licensing action is categorically excluded from further environmental review under 10 CFR Part 51.22(c)(11), because it approves a change in equipment that does not change the types and amounts of effluent or the individual or cumulative occupational radiation exposures. Also, this licensing action will neither impact construction nor increase the risk of radiological accidents.

In addition to the above amendment, NRC staff has amended License Condition 9.2 to reflect organizational changes within the agency. The new address to which correspondence regarding this license should be sent is, as follows: 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, Mail Stop T-7 E18, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by express delivery to 11545 Rockville Pike, Rockville, Maryland 20852-2738.

If you have any questions regarding this licensing action, please contact Mr. Stephen J. Cohen, Project Manager, at 301-415-7182, or by e-mail at [sjc7@nrc.gov](mailto:sjc7@nrc.gov).

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 Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Sincerely,

**/RA/**

Keith I. McConnell, 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

Docket No.: 40-8584  
License No.: SUA-1350

Enclosures:

1. Technical Evaluation Report
2. License Amendment No. 25

cc: M. Thiesse, WDEQ

If you have any questions regarding this licensing action, please contact Mr. Stephen J. Cohen, Project Manager, at 301-415-7182 or by e-mail at sjc7@nrc.gov.

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**/RA/**

Keith I. McConnell, Deputy Director  
Decommissioning and Uranium Recovery  
Licensing Directorate  
Division of Waste Management  
and Environmental Protection  
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**(CLOSES TAC J00503)**

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TECHNICAL EVALUATION REPORT  
MODIFICATION TO MILL DECOMMISSIONING PLAN  
CATCHMENT BASIN RECLAMATION  
KENNECOTT URANIUM COMPANY, SWEETWATER COUNTY, WYOMING

DOCKET NO.: 40-8584

LICENSE NO.: SUA-1350

DATE: November 13, 2006

FACILITY: Sweetwater Uranium Project, Sweetwater County,  
Wyoming

TECHNICAL REVIEWERS: Stephen J. Cohen

PROJECT MANAGER: Stephen J. Cohen

## 1.0 SUMMARY AND CONCLUSIONS

By letter dated October 3, 2006, Kennecott Uranium Company (KUC) requested an amendment to its Mill Decommissioning Plan (MDP) for the Sweetwater Uranium Project (SUP) pertaining to soil and ground water remediation associated with prior catchment basin releases. Specifically, the amendment is to install drains in an area of petroleum contaminated soil beneath foundations of clarifiers and the mill building to facilitate contamination removal prior to decommissioning these structures in the future. U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the request and approves this MDP amendment.

## 2.0 BACKGROUND

KUC operated a solvent extraction (SX) circuit, as part of its uranium milling process prior to placing the SUP mill on standby in 1983. KUC operated this SX circuit at almost 100 percent capacity, resulting in upsets or overflows of processing fluids. SX circuit overflow was conveyed to a catchment basin that was lined with concrete on the sides, but no liner on the bottom. Because the basin bottom was not lined, process fluids migrated into the subsurface contaminating ground water and soils. Contaminants included radionuclides (natural uranium, radium-226 and -228, and thorium-230), kerosene (used in the SX process), and volatile organic compounds.

By letter dated May 12, 2004, KUC submitted a request to amend License Condition (LC) 11.3 - ground water corrective action program, LC 11.5 - the mill standby environmental monitoring program, and LC 9.10 - the MDP to allow for catchment basin decommissioning and ground water and soils reclamation (KUC, 2004a). KUC supplemented the aforementioned submittal on July 22, 2004, to provide additional information regarding the surety and environmental contamination (KUC, 2004b). On October 28, 2004, NRC staff issued a request for additional information (NRC, 2004), to which KUC responded on December 15, 2004 (KUC,

2004c). This response provided additional information on hydrogeology, limits of contamination, and the soils and ground water reclamation program. KUC provided additional information on January 18, 2005, regarding natural uranium and thorium-230 remediation in subsurface soils (KUC, 2005). NRC staff issued License Amendment No. 21, approving the requested amendments on May 23, 2005 (NRC, 2005).

The SUP mill may soon be taken off standby status because of its impending sale and likely restart under new ownership. KUC's sale of the SUP mill will likely be finalized in early 2007, at which time KUC plans to apply for a license amendment transferring its license to the new owner.

### **3.0 TECHNICAL EVALUATION**

Active reclamation of the catchment basin started in February 2006, with the demolition of the catchment basin and excavation of contaminated soils. By October 2006, KUC excavated approximately 168,080 cubic meters (220,000 cubic yards) of contaminated soil, which KUC disposed of in its tailings impoundment. The excavation is approximately 12.2 m (40 ft) deep and encroaches upon the foundations of KUC's clarifiers and the east wall of the mill building.

As part of the soil and ground water reclamation activities, KUC eliminated two shallow ground water extraction wells used to recover fluids from a perched zone. Perched fluids consisted of catchment basin seepage and infiltrating precipitation that migrated through contaminated soil strata. This perched zone, as well as the associated contamination, has been removed from the excavation area; however, some contamination is located in the excavation walls below structural foundations for the clarifiers and the east mill building wall. These contaminated materials will be isolated and left in place until the mill is eventually decommissioned.

To isolate the contamination below structural foundations, KUC will cover the excavation walls with synthetic liners. However, KUC now proposes to install drains to remove any contaminated seepage and reduce the potential for further migration of contaminated materials. Specifically, KUC plans to install a 15-centimeter (cm) (6-inch (in.) diameter perforated polyethylene pipe for the collection system and connect it to 15-cm (6-in.) polyethylene pipe extending to the surface to remove seepage. NRC staff expects the amount of seepage to be minimal, because the catchment basin no longer exists, and infiltration from precipitation is limited in the Great Divide Basin of Wyoming. NRC staff has reviewed KUC's request and determined that the addition of drains at the excavation bottom is a prudent measure to control any seepage that might accumulate in this area.

### **4.0 PROPOSED LICENSE AMENDMENTS**

9.2 All written notices and reports to the Nuclear Regulatory Commission (NRC) required under this license, with the exception of incident and event notifications, shall be addressed: c/o 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, Mail Stop T-7 E18, Washington, DC 20555-0001, or by express delivery to 11545 Rockville Pike, Rockville, Maryland 20852-2738.

Incident and event notifications, which require telephone notification under 10 CFR 20.2202 and 10 CFR 40.60, shall be made to the NRC Operations Center at (301) 816-5100.

Applicable Amendments: 16, 18, 25]

- 9.10 Decommissioning of the facility shall be performed as presented in the Final Design, Volume VI, Part 2 - "Mill Decommissioning Addendum to the Existing Impoundment Reclamation Plan," submitted May 28, 1998, as supplemented by the response to comments submitted February 3, 1999, and the catchment basin remediation plan dated May 12, 2004, as revised July 22, 2004, December 15, 2004, January 18, 2005, and October 3, 2006. The verification results of this remediation are to be submitted to NRC for approval, as soon as reasonably possible. The catchment basin verification report and NRC's approval letter shall be referenced in the Final Status Survey Report. Residual contamination remaining under structural foundations after the catchment basin remediation shall be removed at the time the structures are decommissioned. The NRC shall be notified and detailed SOPs for decommissioning (land and buildings) shall be available for review at least three months before decommissioning begins.

[Applicable Amendments: 21, 25]

## 5.0 REFERENCES

Kennecott Uranium Company, 2004a, Request for Amendment to Corrective Action Program and Mill Decommissioning Plan, May 12, 2004 [ADAMS Accession No. ML041450426].

Kennecott Uranium Company, 2004b, Response to Comments Regarding License Renewal Request and License Amendment for Proposed Change to Ground Water Corrective Action Program, July 22, 2004 [ADAMS Accession No. ML042110348].

Kennecott Uranium Company, 2004c, Response to Request for Additional Information Dated October 28, 2004, December 15, 2004 [ADAMS Accession No. ML043520255].

Kennecott Uranium Company, 2005, Response to Comments Regarding Natural Uranium and Thorium-230 Remediation in Subsurface Soils, January 8, 2005 [ADAMS Accession No. ML050350266].

U.S. Nuclear Regulatory Commission, 2004, Request for Additional Information Regarding Amendments to the Ground Water Corrective Action Program and Mill Decommissioning Plan, October 28, 2004 [ADAMS Accession No. ML043070658].

U.S. Nuclear Regulatory Commission, 2005, License Amendment No. 21, May 23, 2005 [ADAMS Accession No. ML051510387].