



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

August 11, 1999

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

SUBJECT: PROPOSED LICENSE FOR RENEWAL OF SOURCE MATERIAL LICENSE SUA-1350 FOR OPERATION FOR THE KENNECOTT URANIUM COMPANY SWEETWATER URANIUM PROJECT, SWEETWATER COUNTY, WYOMING

Dear Mr. Paulson:

Per your request, we are providing the proposed license for renewal of source material license SUA-1350. This document reflects the U.S. Nuclear Regulatory Commission (NRC) staff's review of your request for a performance-based operating license for the Kennecott Uranium Company (KUC) Sweetwater Uranium Project, Sweetwater County, Wyoming, dated June 11, 1997. However, the annual surety amount (based on your letter of July 29, 1999) in proposed License Condition 9.7, is still under review.

In revising the license, the staff considered the staff-approved submittals for operation, reclamation (including cost estimates), and decommissioning of the facility and the draft license submitted by you on February 3, 1999. Several telephone conversations and electronic communications with you concerning some of the license conditions were also considered by staff.

If you wish to propose alternatives or clarification for any of the license conditions, please contact Ms. Elaine Brummett of my staff at (301) 415-6606, by August 17, 1999, so that your suggestions may be considered. Otherwise, we are prepared to issue the renewal license once our surety review is complete.

Sincerely,

A handwritten signature in cursive script, reading "John J. Surmeier".

John J. Surmeier, Chief
Uranium Recovery and
Low-Level Waste Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

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

Enclosure: As stated

cc: R. Chancellor, WDEQ
R. Edge, DOE GJ
R. Atkinson, KUC

Natural Uranium and/or
Natural Uranium Byproducts

Expiration Date: June 30, 2004

Any

Unlimited

Section 9: Administrative Conditions

- 9.1 The authorized place of use shall be the licensee's Sweetwater uranium milling facility, located in Township 24 North, Range 93W, Sweetwater County, Wyoming.
- 9.2 All written notices and reports to the NRC required under this license, with the exception of incident and event notifications, shall be addressed to the Chief, Uranium Recovery and Low Level Waste Branch, Division of Waste Management, Office of Nuclear Material Safety and Safeguards.
- 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.
- 9.3 A. The licensee may, without prior NRC approval, and subject to the conditions specified in Part B of this condition:
- (1) Make changes in the facility or process presented in the license renewal applications and supplemental submittals (applications and supplements).
 - (2) Make changes in the procedures presented in the applications and supplements.
 - (3) Conduct tests or experiments not presented in the applications and supplements.
- B. The licensee shall file an application for an amendment to the license, unless the following conditions are satisfied.
- (1) The change, test, or experiment does not conflict with any requirement specifically stated in this license or impair the licensee's ability to meet all applicable NRC regulations.
 - (2) There is no degradation in the essential safety or environmental commitments in the license application or provided by the approved reclamation plan.
 - (3) The change, test, or experiment is consistent with the conclusions of actions analyzed and selected in the most recent EA for the facility.
- C. The licensee's determinations concerning Part B of this condition shall be made by a Safety and Environmental Review Panel (SERP). The SERP shall consist of a minimum of three individuals. One member of the SERP shall have expertise in management and shall be responsible for managerial and financial approval changes; one member shall have expertise in operations and/or construction and shall have responsibility for implementing any operational changes; and, one member shall be the facility radiation safety officer (RSO), with the responsibility of assuring changes conform to radiation safety and environmental requirements. Additional members may be included in the SERP, as appropriate, to address technical aspects such as health physics, groundwater hydrology, surface water hydrology, specific earth sciences, and other technical disciplines. Temporary members or permanent members, other than the three above-specified individuals, may be consultants. At least one member of the SERP shall be designated as Chairman.

D
P The licensee shall maintain records of any changes made pursuant to this condition until license termination. These records shall include written safety and environmental evaluations, made by the SERP, that provide the basis for determining changes are in compliance with the requirements referred to in Part B of this condition. The licensee shall furnish, in an annual report to NRC, a description of such changes, tests, or experiments, including a summary of the safety and environmental evaluation of each. This report shall be incorporated in the facility's annual ALARA audit. In addition, the licensee shall annually submit to the NRC changed pages to the approved license application to reflect changes made under this condition.

- 9.4 The licensee is hereby authorized to possess byproduct material in the form of uranium waste tailings and other uranium byproduct waste generated by the licensee's milling operations authorized by this license.

The licensee is authorized to operate an ion exchange (IX) uranium recovery facility in accordance with submittals dated September 27, 1989, and October 18, 1991. Contaminated liquid and solid wastes from the IX plant shall be placed in the tailings impoundment.

The licensee is not authorized to produce any other uranium concentrates until a pre-operational inspection has been completed and any safety issues resolved. The inspection should confirm, in part, that operating procedures and approved radiation safety and environmental monitoring programs are in place, and that pre-operational testing is complete.

For monitoring purposes, the standby mode of operation is applicable for any continuous 90-day or longer period when no yellowcake is produced by the mill. The NRC shall be notified at least ninety (90) days prior to any planned resumption of uranium milling operations.

- 9.5 The licensee shall conduct operations in accordance with statements, representations, and conditions contained in Sections 5.2, 5.3, 5.4, and 6.0 of the original license application as revised, dated August, 1978; in Sections 2.0, 3.0, and 4.0 of the renewal application dated March, 1984, as supplemented by submittals dated April 3, 1983 and January 17, 1985; and the Final Design Volume VII of the license renewal application submitted September 18, 1997, with page changes submitted April 13, June 10, July 1, and July 20, 1998, and March 25, 1999; except where superseded by license conditions below.

Whenever the word "will" is used in the above referenced submittals, it shall denote a requirement.

- 9.6 Standard operating procedures (SOPs) shall be established and followed for all operational process activities involving radioactive materials that are handled, processed, or stored. These SOPs for operational activities shall enumerate pertinent radiation safety practices to be followed and will be available for the pre-operational inspection.

Additionally, written procedures shall be established for non-operational activities to include in-plant and environmental monitoring, bioassay analyses, and instrument calibrations. An up-to-date copy of each written procedure shall be kept in the mill area to which it applies.

All SOPs (for both operational and non-operational activities) shall be reviewed and approved in writing by the RSO before implementation and whenever a change in procedure is proposed to ensure that proper radiation protection principles are being applied. In addition, the RSO shall perform a documented review of all existing operating procedures at least annually.

- 9.7 The licensee shall maintain an NRC-approved financial surety arrangement, consistent with 10 CFR 40, Appendix A, Criteria 9 and 10, adequate to cover the estimated costs, if accomplished by

a third party, for decommissioning and decontamination of the mill and mill site, reclamation of any existing or approved tailings or waste disposal areas, reclamation of approved evaporation ponds, groundwater restoration, and the long-term surveillance fee. With submittal of a revised reclamation/decommissioning plan, the licensee shall submit, for NRC review and approval, a proposed revision to the financial surety arrangement, if estimated costs in the proposed plan exceed the amount covered in the existing financial surety. The NRC-approved revision to the cost estimate shall be incorporated into the next annual surety amount.

For the approved reclamation plan referenced in License Condition 10.5, the licensee shall provide the NRC-approved surety amount (adjusted for inflation) for reclamation of the proposed structures associated with resumption of mill operation (e.g., tailings impoundment, evaporation ponds, and diversion channels) before commencement of construction of any of these structures.

Annual updates to the surety amount, required by 10 CFR 40, Appendix A, Criteria 9 and 10, shall be submitted to the NRC at least three (3) months prior to the anniversary date (April 30) of the approved surety arrangement. If the NRC has not approved a proposed revision to the surety coverage thirty (30) days prior to the expiration date of the existing surety arrangement, the licensee shall extend the existing surety arrangement. The revised surety amount will be in effect within three (3) months of written NRC approval.

The licensee's currently NRC-approved surety (performance bond) shall be continuously maintained in an amount no less than \$6,308,000, pursuant to the submittal dated July 29, 1999, for the purpose of complying with 10 CFR 40, Appendix A, Criteria 9 and 10 for decommissioning costs related to the existing facility, until a replacement amount is authorized by the NRC.

- 9.8 The licensee shall have an archeological survey performed prior to disturbing any previously unsurveyed areas. Such surveys shall be submitted to the NRC and the State Historic Preservation Office (SHPO) for review and approval. No such disturbance shall occur until authorization to proceed has been granted by the NRC and SHPO. In addition, all work in the immediate vicinity of any buried cultural deposits unearthed during the disturbance of land shall cease until approval to proceed has been granted by the NRC and SHPO.
- 9.9 The licensee is hereby exempted from the requirements of Section 20.1902(e) of 10 CFR Part 20 for areas within the mill buildings, provided that all entrances to the mill buildings are conspicuously posted in accordance with Section 20.1902(e) and with the words, "Any Area Within this Mill May Contain Radioactive Material."
- 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. The NRC shall be notified and detailed SOPs for decommissioning (land and buildings) shall be available for review at least three (3) months before decommissioning begins.

Section 10: **Operational Controls, Limits, and Restrictions**

- 10.1 The mill production per calendar year shall not exceed 4,100,000 pounds of yellowcake, as referenced in the Revised Environmental Report, dated August 1994.
- 10.2 All liquid effluents from mill process buildings, with the exception of sanitary wastes, shall be returned to the mill circuit or discharged to the tailings impoundment.

- 10.3 The licensee shall construct and operate the proposed tailings impoundment, liner system, evaporation ponds, and tailings disposal system in compliance with Volumes III, IV, and VII of the Final Design application submitted by cover dated June 11, July 23, and September 18, 1997, including page changes submitted April 13, June 10, July 1, and July 20, 1998, and March 25, 1999.

The licensee is currently authorized to construct up to eight evaporation ponds and one new impoundment. An additional two evaporation ponds and an additional five impoundments, as described in the above documents, may be constructed after: 1) notification of NRC; 2) submittal of data confirming the proposed design; and 3) an increase in the surety amount, based on the NRC-approved cost estimate for reclaiming the additional structures.

- 10.4 A detailed embankment monitoring program shall be submitted for NRC approval at least three (3) months prior to placing tailings effluent.
- 10.5 The existing tailings impoundment, the proposed tailings impoundments, and the proposed evaporation ponds shall be reclaimed in accordance with the Final Design Volumes V, VI, and VI Part 2 of the license renewal application submitted August 1, 1997, August 20, 1997, and May 28, 1998, with page changes submitted June 10, 1998, and supplements submitted February 3, February 25, and June 21, 1999.
- 10.6 During any period of mill standby, the licensee shall not add tailings or other solid wastes to the tailings impoundment, except byproduct material in the form of debris generated by routine site maintenance. The licensee may add a maximum (total) of 10,000 cubic yards of byproduct material generated in the course of decommissioning U.S. Energy Corporation's Green Mountain Ion Exchange (GMIX) facility which is licensed by SUA-1524; and a maximum of 2,800 cubic yards of 11e.(2) byproduct material generated by Crow Butte Resources, Inc. in the course of operating its Crow Butte In Situ Leach (ISL) facility that is licensed by SUA-1534 and solid and liquid wastes from the site's IX plant. Disposal of GMIX materials shall be performed as described in the disposal plan that was submitted in the licensee's July 21, 1993, letter. Disposal of the Crow Butte ISL materials shall be in accordance with the licensee's submittal of July 9, 1996.

During any period of mill standby, at least a weekly inspection of the tailings area shall be performed and documented.

Section 11: **Monitoring and Recordkeeping Requirements**

- 11.1 The results of sampling, analyses, surveys and monitoring, and of calibration of equipment, as well as reports on audits and inspections, and any subsequent reviews, investigations, and corrective actions, shall be documented. Unless otherwise specified in NRC regulations or this license, all such documentation shall be maintained for a period of at least five (5) years.
- 11.2 The licensee shall conduct an annual survey of land use (private residence, grazing areas, private and public potable water and agricultural wells, and nonresidential structures and uses) in the area within five (5) miles of any portion of the restricted area boundary.
- 11.3 The licensee shall conduct a corrective action program (CAP) with the objective of returning the concentrations of chromium, natural uranium, and combined radium-226/228 to the levels referenced in "Addendum to the Revised Environmental Report, Background Ground Water Quality and Detection Standards," January 1996, as revised by page changes January 8, 1998, and approved by the NRC letter of May 28, 1998.

The ground-water protection standards at point of compliance (POC) wells TMW-15, 16, 17, and 18, with background being recognized in well TMW-5, are: arsenic = 0.05 mg/l, beryllium = 0.01 mg/l, cadmium = 0.01 mg/l, chromium = 0.05 mg/l, lead-210 = 8.9 pCi/l, nickel = 0.01 mg/l, combined radium-226/228 = 5.8 pCi/l, selenium = 0.01 mg/l, thorium-230 = 7.0 pCi/l, natural uranium = 36.0 pCi/l, and gross alpha = 15.0 pCi/l.

Pump-back wells may be added or removed from service with the goal of improving the performance of the CAP. POC, monitoring, and pump-back wells shall be sampled at the locations, at the frequency, and for the parameters provided in Table 5-1 (for existing impoundment) of the Final Design Volume VII, submitted (page change) March 25, 1999. Reporting limits for sampled constituents shall be as provided in Table 5-11 of the Final Design Volume VII, submitted April 13, 1998.

- 11.4 Upon resumption of milling operations, the licensee shall implement a ground-water detection monitoring program for the tailings impoundment and evaporation ponds to ensure compliance with 10 CFR 40, Appendix A, in accordance with the "Addendum to the Revised Environmental Report, Background Ground Water Quality and Detection Standards," January 1996, as revised by the submittals of January 8, 1998, and March 25, 1999; and conduct an environmental monitoring program in accordance with on-file SOPs for environmental monitoring, and in accordance with Table 5-2 of the Final Design Volume VII, submitted (page change) March 25, 1999.
- 11.5 During any period of mill standby, the licensee shall conduct an environmental monitoring program in accordance with on-file SOPs for environmental monitoring, and in accordance with Table 5-1 of the Final Design Volume VII, submitted (page change) March 25, 1999.

Section 12: Reporting Requirements

- 12.1 An annual report of the review of all existing operating procedures, required to be performed by the RSO, shall be prepared and retained on site.
- 12.2 In the event a pond leak detection system indicates a leak and two or more upper control limit parameters (detection standards) are exceeded in a POC well, NRC shall be notified by telephone of the excursion within 48 hours in accordance with License Condition 9.2. A written report shall be filed with the NRC within 60 days of first notifying NRC of the excursion. The report shall include analytical data, describe mitigative action, and propose additional constituents for monitoring based on the chemistry of the tailings/pond fluid.
- 12.3 An annual report will be submitted to the NRC that includes: (1) description of changes, tests, or experiments approved by the SERP; (2) page changes to the approved license application made by the SERP; (3) a report of the annual land use survey indicating any differences in land use from that described in the previous report; (4) a ground-water CAP review, describing the progress toward attaining the ground-water protection standards including the areal extent and concentration of hazardous constituents and estimates of the time needed to obtain compliance; (5) the ground-water monitoring report for the year; and (6) the ALARA audit report.
- 12.4 A completion report(s), including as-built drawings, verifying that reclamation and decommissioning of the site has been performed according to the NRC-approved plans shall be provided within six (6) months of completion of the work. The report(s) shall also include summaries of results of the quality assurance and control testing to demonstrate that the approved specifications were met.

August 11, 1999

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

SUBJECT: PROPOSED LICENSE FOR RENEWAL OF SOURCE MATERIAL LICENSE SUA-1350 FOR OPERATION FOR THE KENNECOTT URANIUM COMPANY SWEETWATER URANIUM PROJECT, SWEETWATER COUNTY, WYOMING

Dear Mr. Paulson:

Per your request, we are providing the proposed license for renewal of source material license SUA-1350. This document reflects the U.S. Nuclear Regulatory Commission (NRC) staff's review of your request for a performance-based operating license for the Kennecott Uranium Company (KUC) Sweetwater Uranium Project, Sweetwater County, Wyoming, dated June 11, 1997. However, the annual surety amount (based on your letter of July 29, 1999) in proposed License Condition 9.7, is still under review.

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Sincerely,
Original Signed By
John J. Surmeier, Chief
Uranium Recovery and
Low-Level Waste Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Docket Number: 40-8584
License No.: SUA-1350
Enclosure: As stated
cc: R. Chancellor, WDEQ
R. Edge, DOE GJ
R. Atkinson, KUC

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