UNITED STATES

NUCLEAR REGULATORY COMMISSION

REGION IV

URANIUM RECOVERY FIELD OFFICE
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Docket No. 40-8907
SUA-1475, Amendment No. 5
04008907300E

MEMORANDUM FOR: Docket File No. 40-8907

FROM: Gary R. Konwinski, Project Manager
Uranium Recovery Field Office
Region IV

SUBJECT: CORRECTIVE ACTION PROGRAM AMENDMENT

Introduction

By letter dated March 29, 1989, United Nuclear Corporation (UNC) submitted a corrective action program in response to License Condition No. 30 of Source Material License SUA-1475. This submittal as well as the previous submittal dated July 26, 1988, represent Amendments 1 and 2 to UNC's reclamation plan. Both of these submittals were reviewed under this licensing action. Together they will represent the initial phase of United Nuclear's corrective action program.

Corrective Action Program

The proposed corrective action program involves utilization of seepage collection wells and evaporation capacity. The corrective action program will phase in seepage collection in Zone 1, Zone 3 and the alluvial materials. The seepage recovered from these collection systems as well as that pumped from borrow pit No. 2 will be discharged to a combination of a spray evaporation system and two synthetically-lined evaporation ponds.

Drilling of the seepage collection wells is scheduled to begin during the spring of 1989 and continue until the system is complete. The total installation period will require approximately 1 year. UNC is then prepared to operate the system throughout the period of reclamation of the tailings impoundments. The UNC proposal involves a sequence of events that decommissions portions of the system at predetermined times. It should be noted that decommissioning or abandonment of system components will be based upon individual performance towards attaining appropriate standards.

Staff review of the proposed corrective program indicated that a combination of seepage collection and subsequent evaporation will remove contaminated water from the various aquifers and deposit the ionic and metallic salts on the tailings surface. The apparent lack of recharge at the site is of concern because significant quantities of contaminated water may be withdrawn from the site without appreciable improvement on water quality. Regardless of this situation, UNC's proposal to withdraw contaminated water from the areas with the greatest saturated thickness represents an appropriate initial effort in ground-water remediation at the site. Should large quantities of contaminated ground water be removed from the site without a positive response in ground-water chemistry, injection of fresh water may be necessary to attain compliance with ground-water protection standards.

Yields from the various system components will change with time. However, the Zone 3 seepage collection system is expected to maintain approximately 70 gpm. This equates to a 5 gpm yield for each of the 14 seepage collection wells. Additionally, 17 gpm is expected to be removed from the alluvial materials, utilizing three collection wells. This yield represents an estimate based upon limited aquifer characterization. Accordingly, pumping data and water level responses will be reviewed in the initial annual system review to determine optimum yields.

Conclusion

Based upon the review of the licensee's March 29, 1989 submittal, the existing seepage collection proposal and the hydrologic conditions that exist at the site, the staff recommends that License Condition Nos. 30 and 33 be revised to incorporate a corrective action program into Source Material License SUA-75 as follows:

30. The licensee shall implement a compliance monitoring program containing the following:

    A. Sample wells GW-1-4; EPA Wells 1-28 and EPA-22A (excepting EPA Wells 6, 10, 16, 19, 20, 21, 22, 24 and 26); and Wells 411, 420, 501-B, 502-B, 504-B, 509-D, 515A, 516A, 517, 518, 604, 614, 619, 632, TWQ-90, TWQ-106D, TWQ-29A, TWQ-141, TWQ-142 and TWQ-143, on a quarterly frequency for chloride, nitrate, sulfate, ammonia, manganese, calcium, magnesium, sodium, bicarbonate, potassium, field-pH, TDS and water level, and on a semiannual frequency for arsenic, beryllium, cadmium, chloroform, cyanide, lead, lead-210, naphthalene, nickel, combined radium-226 and 228, selenium, thorium-230, uranium, gross alpha and vanadium.

    Notwithstanding the above, the licensee is only required to sample EPA wells after receipt of written authorization by the land owner to enter that area for the purpose of sampling ground water from those specified wells. The licensee shall make every reasonable effort to obtain such authorization. If authorization is not obtained, the licensee shall inform the NRC, Uranium Recovery Field Office, promptly.

B. Comply with the following ground-water protection standards at point of compliance Wells GW-1, GW-2, 632, EPA-23, EPA-28, 509-D and EPA-22A in the alluvium; 614, 604, EPA-4, EPA-7 and 516-A in Zone 1; and 517, 518, EPA-3, 501-B and EPA-18 in Zone 3:

arsenic = 0.05 mg/l, beryllium = 0.05 mg/l, cadmium = 0.01 mg/l, chloroform = 0.001 mg/l, cyanide = 0.005 mg/l, gross alpha = 15.0 pCi/l, lead = 0.05 mg/l, lead-210 = 1.0 pCi/l, naphthalene = 0.001 mg/l, nickel = 0.05 mg/l, radium-226 and 228 = 5.0 pCi/l, selenium = 0.01 mg/l, thorium-230 = 5.0 pCi/l, uranium = 0.3 mg/l and vanadium = 0.1 mg/l.

C. Implement a corrective action program in Zones 1 and 3 in accordance with "Amendment 1, Reclamation Plan, License No. SUA-1475" submitted by letter dated July 26, 1988, as well as implement a corrective action program in the alluvium in accordance with "Amendment 2, Reclamation Plan, License No. SUA-1475" submitted by letter dated March 29, 1989, with the objective of returning the concentrations of arsenic, beryllium, cadmium, chloroform, cyanide, gross alpha, lead, lead-210, naphthalene, nickel, radium-226 and 228, selenium, thorium-230, uranium and vanadium to the concentration limits specified in Subsection (B). No corrective action program component, meeting the abandonment criteria stated in the March 29, 1989 submittal, shall be decommissioned without obtaining prior NRC approval.

The corrective action program shall be fully operational as soon as practicable but in no event later than April 1, 1990. Additionally, the licensee shall on a semiannual frequency, submit a ground-water monitoring report as well as submit a corrective action program review, by December 31 of each year, that describes the progress towards attaining ground-water protection standards.

33. The licensee shall adhere to the schedule for cleanup of windblown tailings, interim stabilization and mill decommissioning; and adhere to the schedule for placement of the final reclamation cover and construction of flood diversion structures (pending NRC approval of those designs) in accordance to the document entitled, "Amendment 1, Reclamation Plan, License No. SUA-1475," submitted by letter dated July 26, 1988.

The licensee shall submit the results of a final gamma survey and soil sampling program to verify cleanup of contaminated areas in

accordance with Criterion 6 of Appendix A to 10 CFR 40 within 90 days of completion of cleanup of the mine site during 1988 and all remaining windblown tailings contamination in 1989.

Gary R. Konwinski, Project Manager
Uranium Recovery Field Office
Region IV

Approved by:

Edward F. Hawkins, Branch Chief
Uranium Recovery Field Office
Region IV

Case Closed: 04008907300E

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