PDR

UNITED STATES

NUCLEAR REGULATORY COMMISSION

REGION IV

URANIUM RECOVERY FIELD OFFICE
BOX 25325
DENVER, COLORADO 80225

JUL 3 0 1990

URFO:DCW
Docket No. 40-4492
SUA-667, Amendment No. 40
04004492720E

MEMORANDUM FOR: Docket File No. 40-4492

FROM: Dana C. Ward, Project Manager

SUBJECT: AMENDMENT NO. 40 TO SOURCE MATERIAL LICENSE SUA-667 FOR THE GAS HILLS MILL

Introduction

By letter dated June 21, 1990, American Nuclear Corporation (ANC) requested amendment of Source Material License SUA-667 for the Gas Hills Mill to authorize the receipt and disposal of byproduct material waste from Ferret Exploration Company of Nebraska's Crow Butte in-situ leach (ISL) mine. The Crow Butte ISL project is located near Crawford, Nebraska, and expects to soon be in operation. Operations at the ISL facility are authorized by Source Material License SUA-1534. ANC plans to dispose of this material until December 31, 1992, when final reclamation at Pond No. 1 is scheduled to be complete.

Discussion

The material to be disposed will consist of pond residue, contaminated soils, pumps, processing equipment, miscellaneous fittings, and parts. It is estimated that an amount not to exceed 500 cubic yards of Ferret's waste will be disposed. Pond residue will probably be shipped by a slurry truck or if this is impossible, in sealed drums. Miscellaneous fittings, parts, and equipment will be shipped in enclosed trailers and, when necessary, 55 gallon drums. The packaging and shipping containers will meet all the requirements under DOT regulations for low specific activity (LSA) materials. A manifest describing the waste material and an emergency response plan will accompany each shipment.

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ANC states that the ISL byproduct material will be disposed in Tailings Pond No. 1 at the Gas Hills Mill. Evaporation pond residues will be spread to enhance evaporation prior to covering. Other materials will be placed in shallow trenches or on the surface of the tailings pond. Equipment will be sectioned or crushed prior to placement, with all voids filled by soil prior to compaction. A permanent record will be kept showing the burial location of all materials.

The material to be disposed will be placed in layers not to exceed 12 inches in thickness. A minimum of 1 foot of interim cover will be placed over the wastes after each shipment is placed. The pond residues will be covered after desiccation. ANC's approved reclamation plan will not be affected by this activity. The Ferret material (500 cubic yards) will be used in place of off-site material needed to meet specified contours. ANC supplied radon flux calculations to reaffirm the radon attenuation of the cover to be placed over the waste disposal area.

ANC's radiation protection plan will be expanded to include an air particulate monitor located at the disposal site. The monitor will be operated during disposal of Ferret's material.

Staff Review

The staff review of the licensee's proposal indicates that the byproduct material is similar to the tailings. A radiological comparison of Ferret's material with ANC's tailings shows that the Ferret material per unit volume has a slightly elevated natural uranium content over that of the ANC tailings. Compared to the great volume of tailings, the additional radioactivity added to the tailings pile as a result of the disposal would be insignificant.

The general procedure outlined in ANC's submittal for disposal of the wastes from Ferret is acceptable. However, the staff will require that a standard operating procedure be written by ANC for the disposal of the ISL material at Tailings Pond No. 1, and that this procedure be subject to review and revision. This will assure that the disposal procedure is periodically reviewed and updated, if necessary, and also allows the licensee the flexibility to revise the procedure as conditions warrant.

Conclusion

The staff concludes that the disposal of the byproduct material from the Ferret facility at the Gas Hills Mill is in accordance with NRC regulations and specifically, Criterion 2 of Appendix A to 10 CFR 40. Criterion 2 encourages the disposal of waste from ISL facilities at mill tailings sites to avoid proliferation of numerous small disposal sites.

The staff also concludes that the licensee's proposal for disposal of the waste, as modified by the staff, will not have a significant impact on Tailings Pond No. 1. The staff therefore recommends that Source Material License SUA-667 be amended to authorize the disposal of the byproduct waste from Crow Butte ISL facility by adding License Condition No. 30 to read as follows:

30. The licensee is authorized to dispose of byproduct material waste from the Ferret Exploration Company of Nebraska's Crow Butte in-situ leach facility in accordance with the submittal dated June 21, 1990. Further, the licensee shall develop a written standard operating procedure prior to disposing any ISL waste at its facility. This procedure shall be reviewed annually and revised if necessary.

Dana C. Ward

Dana C. Ward
Project Manager

Case Closed: 04004492720E

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