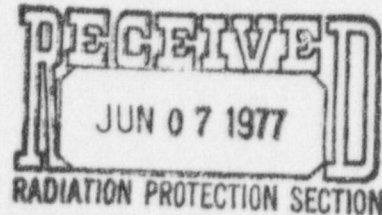


UNITED NUCLEAR
C O R P O R A T I O N

MINING AND MILLING DIVISION
P. O. BOX 3951
ALBUQUERQUE, NEW MEXICO 87110
(505) 345-5661

June 6, 1977



New Mexico Environmental Improvement Agency
Radiation Protection Section
P.O. Box 2348 - Crown Building
Santa Fe, New Mexico 87503

Attention: Messrs. Alphonso A. Topp
Patrick Donahoe

Re: Church Rock Ion Exchange

Gentlemen:

In response to your letter of May 27, 1977, the following additional information is presented on the Church Rock ion exchange plant (IX) and Church Rock mine water settling ponds:

United Nuclear Corporation has constructed and begun test operations of its Church Rock IX plant in accordance with permission granted on May 9, 1977. As described in our earlier correspondence, the IX plant is an independent facility built during 1976-1977 for the extraction of uranium and radium from mine waters. The Church Rock mine water settling ponds which supply water to the IX plant originated with the Church Rock mine in 1968 and are a separate component of the mining operation at Church Rock. The mine and mine water settling ponds were described in our initial application to add the IX facility to our radioactive materials license. Such descriptions were offered as ancillary information only and not with the intent of licensing the ponds or the mine. UNC only wishes to include the IX in its existing Church Rock radioactive materials license.

NMEIA Comment

1. Please confirm that the following measurements will be incorporated into the IX monitoring program with the possibility of a reduced program at the end of one year of measurements:
 - a. Quarterly measurements of Th-230 and Pb-210 at the water discharge point into the arroyo;
 - b. Quarterly external radiation measurements in and around the IX plant;
 - c. Quarterly radon measurements in the IX plant, around the ponds, and at points on the boundary of the restricted area boundary.

UNC Response

1. UNC will institute an IX monitoring program as defined in a telephone conversation between Patrick Donahoe and Noel Savignac on 6-1-77; e.g.,
 - a. Quarterly measurements of Th-230, and Pb-210 at the water discharge point from the IX facility into the arroyo. Measurements would begin with addition of the IX facility to our Church Rock license;
 - b. Quarterly external gamma ray measurements in the IX plant and specifically around the radium removal circuit of the IX plant;
 - c. Quarterly radon daughter measurements in the IX plant for employee protection and quarterly radon measurements at the ponds and the nearest restricted area boundary from the IX plant which lies to the north of IX plant.

NMEIA Comment

2. How often will the pipeline carrying the pregnant liquid be inspected for leaks and breaks?

UNC Response

2. The pipeline carrying the pregnant liquid will be inspected for leaks and breaks at least once a day by UNC maintenance personnel.

NMEIA Comment

3. Are the radiation safety personnel (P. 6 of the Nov. 30, 1977⁶ letter from J. Abbiss to A. Topp) still the same in light of the change in mill radiation safety personnel?

UNC Response

3. The radiation safety personnel are as described in the February 28, 1977 letter from H. J. Abbiss to A. A. Topp, copy enclosed.

NMEIA Comment

4. How is the IX plant ventilated?

UNC Response

4. Natural atmospheric convection currents will be used to ventilate the IX facility. If, however, radon daughter measurements exceed occupational limits, forced air ventilation will be installed.

NMEIA Comment

5. How will the accumulated radium at the bottoms of the precipitation ponds be disposed of at the end of operations?

UNC Response

5. The mine water settling ponds gradually fill in with flocculated suspended solids and barium sulfate as a function of time. To maintain the flocculation and precipitation efficiencies, the ponds are periodically dredged to restore their original depth. This dredged material contains sufficient uranium to be economically attractive for processing in the mill. Recently, in fact, dredge materials from the ponds have been introduced into the Church Rock mill as part of the initial start-up operations of the mill. The radium in the dredge materials represents only a small fraction of the total volume of dredge materials and will ultimately pass through the mill for containment in the tailings pond. Subsequent handling of the dredge materials will remain the same due to the economic incentives for recovering the uranium.

Sincerely,

Noel F. Savignac *ses*

NOEL F. SAVIGNAC
Manager, Environmental Services

NFS/ses
cc: H. J. Abbiss
Encl.