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UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
URANIUM RECOVERY FIELD OFFICE
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DENVER, COLORADO 80226

JAN - 3 1991

URFO:DCW
Docket No. 40-8907
SUA-1475, Amendment No. 8
04008907280E

MEMORANDUM FOR: Docket File No. 40-8907
FROM: Dana C. Ward, Project Manager
SUBJECT: AMENDMENT NO. 8 TO SOURCE MATERIAL LICENSE SUA-1475 FOR
DECOMMISSIONING THE CHURCH ROCK MILL

Introduction

By letter dated December 29, 1988, United Nuclear Corporation (UNC) submitted a decommissioning plan for the Church Rock Mill for NRC review and approval. The submittal was in accordance with License Condition No. 26 of Source Material License SUA-1475. The December 29 submittal included information on mill demolition and disposal along with a radiation safety program as part of the decommissioning plan. Additional information regarding decommissioning activities was requested by letter on March 5, 1990, and received on April 10, 1990. Windblown cleanup was addressed in a memorandum to file dated May 23, 1990. The staff review of UNC's proposed decommissioning plan is discussed below.

Decommissioning Activities

The Church Rock mill is owned and operated by the United Nuclear Corporation. The mill is located 17 miles northeast of Gallup, New Mexico and operated from May 1977 to May 1982 at which time it was placed on standby. In June of 1987 UNC submitted a Reclamation Plan to the NRC in which mill decommissioning is scheduled for 1992. All work should be completed by 1997.

United Nuclear has been actively salvaging and selling selected mill components since 1985. Much of the mill has been washed down to remove remaining contamination and reusable equipment removed. The inventory of processing chemicals was sold to other licensees. The pond residues and remaining ore were disposed in the tailings. Equipment released from the operation and sold had to meet strict release criteria. All records of equipment release are available for review.

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Structural Decommissioning

The mill building is nearly gutted of usable equipment. The remaining items are probably unusable or highly contaminated and can not reasonably be decontaminated. There is a possibility that some of the remaining contaminated processing equipment may be sold to another licensee. All equipment not sold will be sectioned and otherwise condensed to minimize void spaces and disposed in Borrow Pit No. 2. Mill materials will be placed in the disposal area in lifts not to exceed 5 feet. Soil will be compacted into each lift to fill any void spaces. Each lift will be covered with a minimum of 1 foot of compacted soil. Structural sections of the mill, such as the maintenance shop, motor controls and ore grinding area may be releasable. Surveys will be conducted on these structures to ascertain if release is appropriate utilizing release limits currently specified in the license.

Other support facilities for the mill will be handled on a case by case situation. The truck scale and scale house will be surveyed and if contaminated cleaned to release criteria. If the scale facilities are not sold and removed by the start of decommissioning they will be moved to a clean storage area. The metal grizzly and hopper will be removed and surveyed. If contamination is extensive the components will be disposed in Borrow Pit No. 2. The vault that housed the hopper will be surveyed, collapsed and filled with soil.

The ore receiving hopper located to the east of the mill building is enclosed in a below grade vault. The walls of the vault protrude above ground and they will be collapsed into the vault during demolition. The remainder of the vault will be filled with clean soil to grade. The conveyor housing structure, which runs from the hopper to the mill, will be surveyed and is expected to pass in its entirety. All contaminated structural components will be disposed in Borrow Pit No. 2. The conveyor which is contained within the housing structure has previously been surveyed, cleared and removed to a clean area.

The six counter current decantation (CCD) thickener tanks are constructed of wood slats with concrete pads. Much of the workings have been radiologically surveyed and cleared. The wood slats will be planed and the shavings disposed in Borrow Pit No. 2. The wood slats will be surveyed and released if applicable. Proper respiratory protection shall be provided for this activity. The concrete slabs will be decontaminated if possible and buried in place. If the slabs are too difficult to decontaminate they will be extracted and disposed in Borrow Pit No. 2. The raffinate, clarifier-flocculator and surge tanks will be handled similarly to the CCD tanks. The sodium chlorate storage building, adjacent to the CCD tanks, will be surveyed, cleared and removed to a clean location.

The solvent extraction facility, which is a series of concrete tanks, walkways, and covers located in a separate area adjacent to the mill, will be completely dismantled and disposed in Borrow Pit No. 2. The Administration, Change and Warehouse buildings will be surveyed, cleaned if necessary and remain in place on site. Preliminary surveys conducted on these three structures indicate that salvage in place will be possible.

Other facilities such as the fuel oil storage tanks, storm drain pond, electrical sub-station and sewage treatment plant are not expected to be significantly contaminated. These facilities will be extensively surveyed with close attention made to soil survey results in those areas that may have received contaminated materials during operation. The oil storage tank will be sold, storm drain pond will be cleared and backfilled with clean soil, the electrical sub-station will be sold and the sewage treatment plant will be used with the remaining facilities if it is uncontaminated.

Concrete foundations, floors and supports will be surveyed for contamination. If decontamination of concrete is needed, acid rinsing, sandblasting or scrubbing will be the methods used. Materials that economically can not be decontaminated will be disposed in Borrow Pit No. 2. Buried utilities such as electrical and water lines will be abandoned in place, after it is determined that they are not contaminated, or buried with tailings. Process lines that were placed underground will be removed in their entirety unless a specific exemption is applied for during decommissioning.

Soil Cleanup

Windblown tailings were addressed by the licensee in their December 21, 1989, submittal. The review of that submittal was completed by memorandum to file on May 23, 1990. The licensee has demonstrated an acceptable methodology for site surveying and will use that method for surveying the mill facility grounds. Soils up to 6 inches deep will be removed along with asphalt surfaces in the mill area. Confirmation surveys will then be conducted to determine if any contamination remains.

Management Organization

The General Manager/Radiation Safety Officer (GM/RSO) is the senior official onsite and responsible for all activities. The GM/RSO reports directly to the President of the Company in Albuquerque, New Mexico, and has the responsibility to ensure that no individuals are exposed to excessive amounts of radiation. The GM/RSO (known as the Facility Coordinator by EPA) supervises one full-time Radiation Safety Technician. All decommissioning activities will be conducted by UNC personnel or contractors to UNC. The RSO will be responsible for exposures of all personnel working onsite.

Training

Radiation protection training will be given to each employee. Training topics will be commensurate with the work assignments conducted by the employees. A written examination will be given with retraining and testing if the trainee does not achieve a passing score.

Radiation Safety

Decommissioning activities could increase the exposure to airborne radioactive materials. Eating and smoking will be prohibited in the restricted area except in designated clean areas. Exposures shall also be controlled by wetting,

proper ventilation and removal of any loose contamination. Appropriate protective equipment required to decrease exposures will be determined and issued by the RSO. Extensive use of radiation work permits (RWPs) will be utilized to control employee's activities and keep exposures at ALARA. The RSO or his designate will conduct and document daily inspection in all work areas.

To track exposures, the licensee will utilize personal air sampling when determined by the RSO. UNC will also use area air sampling and urinalysis to assess the adequacy of radiation protection and air sampling. Bioassay sampling will be conducted biweekly for yellowcake work, monthly for all other operations along with baseline and termination sampling. All personnel working in the restricted area will wear personnel thermoluminescent dosimeters (TLD) badges. Badges will be exchanged quarterly.

Much of the decommissioning work will be done under procedures as a matter of normal activities. There will be many jobs that require the issuance of a RWP. The RSO will issue the RWP in consultation with the General Manager. The RWP will contain a section listing the protection equipment necessary and the procedures to be followed. If respirators are to be used the respiratory program will be in compliance with 10 CFR 20.103(c).

During the decommissioning operation certain areas within or adjacent to the restricted area will be designated as clean areas. These clean areas will be surveyed weekly for total and removable surface contamination. All employees entering a restricted area will frisk or shower prior to exiting. Documentation on these activities will be maintained. Further documentation will be maintained of all radiological activities in accordance with the regulations.

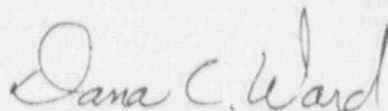
Conclusion

The staff review of UNC's Decommissioning Plan shows that UNC has established a working document that sufficiently addresses major areas of concern in the dismantling and disposal of the existing uranium mill. Structural Decommissioning, Radiation Safety, Training and Management Organization address the major areas of activity at the decommissioning project.

Based on the licensee's submittal dated December 29, 1988, and response dated April 10, 1990, to our request for additional information, the staff recommends that License Condition No. 26 be revised to read as follows:

26. The licensee shall decommission the Church Rock Uranium Mill in accordance with the decommissioning plan submitted by letter dated December 29, 1988, as revised by submittal dated April 10, 1990. Also, within sixty (60) days of completion of decommissioning activities, the licensee shall submit for NRC review a final report discussing in detail the demolition and disposal activities and radiation safety program utilized during decommissioning work. The

submittal shall include summaries of health physics monitoring data, occupational exposure calculations, bioassay results, and worker training activities.



Dana C. Ward
Project Manager

Case Closed: 04008907280E

bcc: Docket File No. 40-8907
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