TECHNICAL EVALUATION REPORT

DATE:	**March 7, 2007**
DOCKET NO.	**40-8907**
LICENSE:	**SUA-1475**
LICENSEE:	**UNC Mining and Milling** **Division of United Nuclear Corporation** **P.O. Box 3077** **Gallup, New Mexico 87305-3077**
FACILITY:	**UNC - Church Rock, New Mexico**
PROJECT MANAGER AND TECHNICAL REVIEWER:	**Paul Michalak**

SUMMARY AND CONCLUSIONS:

In two separate letters (January 11, 2007 and March 6, 2007), United Nuclear Corporation (UNC) has requested the following amendments to Source Material License SUA-1475:

- Change the submittal deadline for the UNC - Church Rock Corrective Action Program (CAP) Annual Report from December 31 of each year to January 30 of the following year (License Condition 30.C);

- Revise the completion milestone for placement of the final radon barrier designed and constructed to limit radon emissions to an average flux of no more than 20 pCi/m^2/s above background from December 31, 1997 to January 31, 2011 (License Condition 35.B.(2));

- Revise the completion milestone for placement of the erosion protection cover from December 31, 1997, to January 31, 2011 (License Condition 35.A.(3)); and

- Revise the completion milestone for ground water corrective actions from December 31, 1997 to January 31, 2010 (License Condition 35.B.(1)).

Based on its review of the licensee's request, the U.S. Nuclear Regulatory Commission (NRC) staff concludes that UNC's requests are acceptable and, accordingly, recommends amendment to License Conditions 30.C, 35.A.(3), 35.B.(1), and 35.B.(2).

Enclosure 1

DESCRIPTION OF LICENSEE'S AMENDMENT REQUESTS:

In a letter dated January 11, 2007, GE Corporate - Environmental Programs (GE) on behalf of UNC, submitted a license amendment request to the NRC to change the submittal deadline for the UNC - Church Rock CAP Annual Report contained in License Condition 30.C of Source Material License SUA-1475 (GE 2007a). Currently, the submittal deadline is December 31 of each year. UNC is proposing that the deadline be changed to January 30 of the following year (i.e., 30 days later). As justification for the change, UNC has stated that the December 31 deadline is logistically difficult to meet because the CAP Annual Report includes fourth quarter (October) ground water analytical results which are not typically received until approximately November 15 to December 1. UNC has indicated that the later deadline will allow sufficient time to fully develop the CAP Annual Report.

Subsequently, by letter dated March 6, 2007, GE on behalf of UNC, submitted a request to modify three reclamation schedule milestones contained in License Condition 35 of Source Material License SUA-1475 (GE 2007b). These include License Condition 35.A.(3) involving placement of the final radon barrier over the uranium mill tailings, License Condition 35.B.(1) involving placement of erosion protection over the covered mill tailings, and License Condition 35.B.(2) involving completion of the ground water corrective actions. Currently, all three milestones are set at December 31, 1997.

For License Condition 35.B.(2), UNC states that ground water corrective actions at the Church Rock site are jointly regulated by both the NRC and the U.S. Environmental Protection Agency (EPA). Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the EPA has directed UNC to conduct a Site-Wide Supplemental Feasibility Study at the Church Rock site (EPA 2006). UNC anticipates completion of this process and ground water corrective actions by December 31, 2010, and has proposed this date as the revised License Condition 35.B.(2) milestone.

For License Conditions 35.A.(3) and 35.B.(1), GE indicated that radon barrier and erosion protection has been installed over the tailings impoundments except for two evaporation ponds that are constructed on top of the tailings impoundment. These ponds are currently used as part of the ongoing ground water corrective actions for the site. GE estimates that completion of radon barrier and erosion protection over the two evaporation ponds should be within 12 months following completion of the ground water corrective action. Consequently, UNC has proposed December 31, 2011, for the revised License Conditions 35.A.(3) and 35.B.(1) milestones.

TECHNICAL EVALUATION:

With respect to UNC's request to change the submittal deadline for its CAP Annual Report from December 31 to January 30 of the following year, the rationale submitted in support of UNC's request is reasonable. Consequently, to allow UNC sufficient time to fully develop the CAP Annual Report, staff concludes that the proposed license amendment is acceptable.

In reference to the proposed revisions in reclamation/remedial milestones, as indicated in GE (2007b), completion of the final Church Rock site radon barrier and erosion protection cover over the two existing evaporation ponds hinges on completion of the ground water corrective actions. Completion of the ground water corrective actions will depend, in part, on the finding of

the EPA-mandated Site-Wide Supplemental Feasibility Study. UNC has conducted ground water remediation activities at the Church Rock site for over 17 years and is assuming that upon conclusion of the Site-Wide Supplemental Feasibility Study, appropriate remedial waivers will be granted and that ground water corrective actions will be deemed complete. Since ground water corrective actions are ongoing, revising the License Condition 35.B.(2) milestone to a more realistic date does not add risk to public health and safety and the environment. Given UNC's 17-year experience with ground water corrective actions at the site, its assumption concerning termination of ground water corrective actions appears reasonable. Furthermore, one objective of the ongoing Site-Wide Supplemental Feasibility Study is to evaluate alternative remedial actions from technical, environmental, and cost-effectiveness perspectives. If the study finds UNC's assumptions concerning ground water corrective action completion overly optimistic, another revision of the milestone may need to be considered. As a result, UNC's proposed License Condition 35.B.(2) completion milestone estimate of December 31, 2010, is acceptable.

In 1996, UNC had completed the installation of 93 acres of radon barrier at the Church Rock site (NRC 1998). This barrier covered all but 17 acres of the tailings impoundments, which contained two evaporation ponds utilized by ongoing ground water corrective actions. In 1998, the NRC-approved radon flux test results showed an average flux of 5.7 $pCi/m^2/s$ (i.e., below the 10 CFR 40 Criterion 6(2) limit of 20 $pCi/m^2/s$) from the 93 acres of radon barrier. As indicated in GE (2007b), the two evaporation ponds remain in use as part of the ongoing ground water corrective action. The tailings area and evaporation ponds are periodically inspected by the NRC, the most recent inspection having been conducted in July 2005 (NRC 2005). The inspection included a radiological survey of the ponds. No anomalous or abnormal readings were reported. Given that completion of the radon barrier will depend on completion of the ground water corrective actions, UNC's proposed License Condition 35.A.(3) completion milestone estimate of December 31, 2011 (12 months after the estimated completion of ground water corrective actions) is justifiable and is acceptable.

Similar to the radon barrier, although a majority of the erosion cover was installed between 1994 and 1996, an erosion cover was not installed over the two evaporation ponds. Again, as indicated in GE (2007b), these evaporation ponds are still being used as part of the ongoing ground water corrective action. Consequently, installation of the erosion cover over the ponds is not technologically feasible until use of the ponds is terminated. It is noted that during a June 13, 2002, field visit, several areas of maintenance concern involving erosion and sedimentation of the existing cover were identified by NRC staff (NRC 2002). In November 2004, MWH (consultant for UNC) submitted *Erosion and Sedimentation Evaluation at the United Nuclear Corporation, Church Rock Uranium Mill Tailings Site* (MWH 2004) to the NRC in response to these concerns. MWH (2004) is currently under review. Despite the uncertainties involving the status of the existing erosion cover, GE's proposed License Condition 35.B.(1) completion milestone estimate of December 31, 2011 (approximately 4.5 years from now and 12 months after the estimated completion of ground water corrective actions) appears reasonably conservative and, as a result, is acceptable.

RECOMMENDED LICENSE CHANGE:

Staff recommends that License Condition 30.C of Source Material License SUA-1475 be revised to change the submittal deadline for the CAP Annual Report as follows:

30.C. The licensee shall, on a semiannual frequency, submit a ground water monitoring report, as well as submit a corrective action program review, by January 30 of the following calendar year, that describes the progress towards attaining ground water protection standards.

Staff further recommends that License Condition 35, which addresses components of site reclamation, read as follows:

35. The licensee shall complete site reclamation in accordance with the approved reclamation plan and ground water corrective action plan, as authorized by License Condition Nos. 34 and 30, respectively.

A. To ensure timely compliance with target completion dates established in the Memorandum of Understanding with the Environmental Protection Agency (56 FR 55432, October 25, 1991), the licensee shall complete reclamation to control radon emissions as expeditiously as practicable, considering technological feasibility, in accordance with the following schedule:

(1) Windblown tailings retrieval and placement on the pile - complete.

(2) Placement of the interim cover to decrease the potential for tailings dispersal and erosion - complete.

(3) Placement of final radon barrier designed and constructed to limit radon emissions to an average flux of no more than 20 $pCi/m^2/s$ above background - December 31, 2011.

B. Reclamation, to ensure required longevity of the covered tailings and ground water protection, shall be completed as expeditiously as is reasonably achievable, in accordance with the following target dates for completion.

(1) Placement of erosion protection as part of reclamation to comply with Criterion 6 of Appendix A of 10 CFR Part 40 - December 31, 2011.

(2) Projected completion of ground water corrective actions to meet performance objectives specified in the ground water corrective action plan - December 31, 2010.

ENVIRONMENTAL IMPACT EVALUATION:

The actions described above fall within the 10 CFR 51.22(c) categorical exclusion provisions, so that an environmental assessment is not required. Extending the deadline to submit the annual CAP report by 30 days is a change in reporting requirements covered by 10 CFR 51.22(c)(10).

The change in the completion milestones for the radon barrier, erosion protection, and ground water corrective actions from December 31, 1997 is an administrative update to correct outdated provisions in the license, and the NRC is not evaluating a change in site activities. UNC is currently conducting ground water corrective actions that have been approved by the NRC and US EPA, and will continue to do so until regulatory authorities agree to termination of

the corrective action activities. The milestone changes simply revise outdated completion estimates, and are thus administrative changes covered by the 10 CFR 51.22(c)(11) categorical exclusion.

REFERENCES:

EPA (2006) Correspondence from Mark Purcell to Larry Bush (UNC) concerning the Supplemental Feasibility Study at the Church Rock, New Mexico site. June 23. [ADAMS Accession No. ML061920514]

General Electric (2007a) Administrative License Request for changing Submittal Deadline for Cap Review - UNC Church Rock. January 11. [ADAMS Accession No. ML070190675]

General Electric (2007b) License Amendment Request for Condition 35 - Source Material License SUA-1475. March 6. [ADAMS Accession No. ML070710132]

MWH (2004) *Erosion and Sedimentation Evaluation at the United Nuclear Corporation, Church Rock Uranium Mill Tailings Site.* November [ADAMS Accession No. ML043150383]

NRC (1998) Correspondence from Joseph J. Holonich to Juan R. Velasquez (United Nuclear Corp.) concerning Evaluation of Church Rock Radon Flux Tests. April 22. [ADAMS Accession No. ML070680251]

NRC (2005) NRC Inspection Report 040-08907/05-001. July 15. [ADAMS Accession No. ML051960518]

NRC (2002) Correspondence from Dan Gillen to Larry Bush (United Nuclear Corp.) concerning Minutes of the June 13, 2002 Erosion Control Meeting for the UNC Church Rock Site. July 24. [ADAMS Accession No. ML022060050]