

(SP-99-009, February 1999, Program, SECY-99-025)  
DATED: FEBRUARY 16, 1999

SIGNED BY: PAUL H. LOHAUS

AGREEMENT STATES WITH AUTHORITY TO REGULATE URANIUM RECOVERY  
OPERATIONS (COLORADO, ILLINOIS, TEXAS, WASHINGTON)

**PROGRAM MANAGEMENT INFORMATION: GUIDANCE TO TERMINATE AGREEMENT  
STATE URANIUM RECOVERY LICENSES UNDER REQUIREMENTS OF 10 CFR 150.15a(a)  
AND SECTION 274c (SP-99-009)**

Enclosed is a Commission paper, SECY-99-025, "Guidance to Terminate Agreement State Uranium Recovery Licenses under Requirements of 10 CFR 150.15a(a) and Section 274c." This paper deals with staff activities to develop implementing guidance the NRC would use to ensure consistency in the process and information that the NRC would need from an Agreement State to make its determination under 10 CFR 150.15a(a) prior to termination of Agreement State uranium recovery licenses. Please see the discussion section of the paper for information on the standards and requirements to be used by the NRC to make the determination, the bases to be used for the determination, and the process to be followed. A detailed step by step procedure has been drafted which is contained in Attachment 3 of the paper. We would appreciate receiving your comments within one month of receipt of this letter.

This information request has been approved by OMB 3150-0029, expiration 04/30/01. The estimated burden per response to comply with this voluntary collection request is 6 hours. Forward any comments regarding the burden estimate to the Information and Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0029), Office of Management and Budget, Washington, DC 20503. If a document does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information.

If you have any questions regarding this correspondence, please contact me or the individual named below:

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Paul H. Lohaus, Director  
Office of State Programs

Enclosure:  
As stated

January 25, 1999

SECY-99-025

FOR: The Commissioners

FROM: William D. Travers /s/  
Executive Director for Operations

SUBJECT: GUIDANCE TO TERMINATE AGREEMENT STATE URANIUM  
RECOVERY LICENSES UNDER REQUIREMENTS OF 10 CFR  
150.15a(a) AND SECTION 274c

PURPOSE:

To inform the Commission of the staff's approach to make determinations that all applicable standards and requirements have been met prior to Agreement State uranium recovery license termination, as required by 10 CFR 150.15a(a) and Section 274c of the Atomic Energy Act of 1954, as amended (AEA).

BACKGROUND:

The Office of State Programs (OSP) has received five requests from the State of Texas regarding NRC concurrence on the State's determinations regarding termination of uranium recovery licenses. Three of these requests address license amendments that remove a portion of a site from a license and the other two cases address termination of the license for an entire site. It is expected that similar requests will be received in the future from Agreement States.

Section 150.15a(a) indicates that the Commission shall have made a determination that all applicable standards and requirements pertaining to material as defined in 10 CFR 150.3(c)(2) (i.e., uranium mill tailings) have been met prior to termination of any Agreement State license for such material. This provision in NRC's regulations stems from section 274c(4) of the AEA

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which reads in part: “[t]he Commission shall also retain authority under any such agreement to make a determination that all applicable standards and requirements have been met prior to termination of a license for byproduct material, as defined in 11e.(2).”

Two kinds of Agreement State uranium recovery licenses are involved: conventional and non-conventional (mainly in-situ uranium extraction licenses) uranium mill licenses. A conventional uranium mill is a facility that generates mill tailings and will be transferred to a custodial agency for long term care in accordance with 10 CFR § 40.28 after the entire license is terminated. A non-conventional uranium mill is a facility that generates limited byproduct materials which are normally transferred to tailings impoundments for disposal and therefore no land transfer is required at license termination. For both types of licenses, the Agreement State is expected to conduct its review for decommissioning, reclamation and/or groundwater restoration in accordance with State regulations which are compatible with the requirements of 10 CFR Part 40. Agreement States are responsible for approval of the remediation plans of uranium recovery facilities in their States and for site inspections to ensure that the actual remedial actions have been completed pursuant to the approved plans.

In the past, the former Uranium Recovery Field Office (URFO) and OSP have made six determinations under section 150.15a(a) for the termination of non-conventional uranium mill licenses in Agreement States. These determinations were based on the State’s conclusion that the licensee had cleaned up the site buildings and soil to meet unrestricted release criteria, that the groundwater had been restored to meet State criteria, and that the wells had been plugged in accordance with State well plugging criteria, if necessary.

No Agreement State has of yet proposed to terminate a conventional uranium mill license authorizing uranium recovery operations which generate uranium tailings. However, in the past three years, the NRC has terminated two such NRC uranium mill licenses; they are the Tennessee Valley Authority (TVA) and the Atlantic Richfield Company (ARCO) licenses. Attachment 1 is a copy of a completion review report which documents the NRC staff’s basis for its conclusion to terminate the ARCO’s license at the Bluewater Mill site. There is an equivalent report to terminate the TVA’s license at the Edgemont, SD site; however, the ARCO report is more representative for illustration because the TVA Edgemont site does not have groundwater remediation issues. Attachment 2, issued in December 1996, is guidance to the NRC staff on the license termination process for NRC conventional uranium mill licenses.

In accordance with the provisions at 10 CFR 150.15a(a) and Section 274c of the AEA for Agreement State licensees, prior to termination of the specific license, the NRC determines whether the licensee has met all applicable standards and requirements. The Agreement State conducts reviews of licensee submittals relative to the remedial actions. These reviews are in accordance with each State’s standards and regulations. With NRC concurrence, the Agreement State terminates the specific licenses for its licensees.

Historically, the NRC has reviewed non-conventional uranium recovery license termination requests from Agreement States on a case-by-case basis without any specific guidance. This paper describes the specific guidance the NRC would use to ensure consistency in the process and information that NRC would need from an Agreement State to make its determination prior to termination of pending and future Agreement State conventional and non-conventional uranium recovery licenses. Note that the NRC staff does not intend to duplicate the State’s review by conducting an independent detailed technical review of the proposed license termination or

determination of any specific documentation for the Agreement State licensees. Rather, NRC would rely on a review of the completeness and documentation of the Agreement State action as well as the normal periodic NRC review of the Agreement State program under the Integrated Materials Performance Evaluation Program (IMPEP).

Staff believes that each Agreement State license amendment that terminates a portion of the site from a license should be considered as a partial license termination and the NRC would make the AEA section 274c(4) determination for each case. Similar license termination processes would be followed for both partial and entire license termination cases. This is consistent with the NRC general practice in the decommissioning area.

#### DISCUSSION:

With the approval of Management Directive 9.15, "Organization and Functions, Office of State Programs" on July 6, 1993, OSP was explicitly assigned responsibility for making determinations under §150.15a(a). Management Directive 9.15 provides, in part, that the Office "[m]akes the determination required in Section 274c of the Act of 1954 that all applicable standards and requirements have been met before an Agreement State terminates a license for byproduct material as defined in Section 11e.(2). This determination will be made in consultation with the Office of Nuclear Material Safety and Safeguards."

The following discussion is divided into three sections: I. Identification of the standards and requirements to be used by NRC to make the determination; II. Bases to be used for the determination; and III. Process to be followed.

#### I. Standards and Requirements

The "standards and requirements" to be used by NRC in making a determination under section 150a(a) would be the applicable regulations and license requirements in the Agreement State. The applicable Agreement State regulations for existing Agreement States having uranium recovery authority were reviewed and approved by NRC when their agreements were amended to include 11e.(2) byproduct material. Similar reviews would be performed for new Agreement States, such as Ohio, which will include the licensing of 11e.(2) byproduct material in their agreement. Agreement States are also expected to adopt any changes to NRC's uranium recovery rules or programs that are identified as required for compatibility or because of their health and safety significance within 3 years of their enactment. NRC usually reviews changes to State rules when they are proposed for adoption and ensures State regulations and other program elements are compatible through review of final adopted State rules. Overall adequacy and compatibility of an Agreement State program is determined through IMPEP reviews.

#### II. Bases for NRC Determination

The determination that all applicable standards and requirements have been met prior to termination of an Agreement State license would have two primary supporting bases:

- A. The first basis would be a completion review report requested from the Agreement State containing the conclusions from the State's review of a licensee's completed remedial actions. This report would document the State staff's bases for its conclusion that all requirements have been met. NRC staff would provide guidance, documented in Attachment 3, to the State and request a completion review report similar to that contained in Attachment 1.

Upon receipt of the completion review report submitted by the State, the NRC staff would review the document for completeness of the State's review process. If the content of the completion review report did not demonstrate that a complete review has been performed, the NRC could request additional information from the Agreement State prior to making its determination. The completion review report should include the following information depending on whether the license being terminated is a conventional or non-conventional uranium mill license.

1. Conventional Uranium Mill License
  - a. A brief description of licensee's activities associated with decommissioning, tailings remediation and/or groundwater cleanup.
  - b. Documentation that the completed surface remedial actions were performed in accordance with license requirements and regulations.
  - c. Documentation that the completed site decommissioning actions were performed in accordance with license requirements and regulations. This documentation should include a discussion of results of radiation survey and confirmatory soil samples which indicates that the subject site meets unrestricted release requirements.
  - d. Documentation that the completed groundwater corrective actions, if necessary, were performed in accordance with license requirements and regulations.
  - e. Discussion of results of State's site closure inspection.
  - f. Documentation that release of this portion of the site will not negatively impact the remainder of the site to be closed at a later date, if it is a partial license termination case.
2. Non-conventional Uranium Mill License (Mainly In-situ Uranium Extraction License)
  - a. A brief description of licensee's activities associated with license termination.

- b. Groundwater information which demonstrates that the groundwater has been adequately restored to meet the State restoration criteria.
- c. Documentation that the production, injection, and monitoring wells have been closed and plugged in accordance with the State criteria.
- d. Decommissioning information which documents that all contaminated materials have been removed from the site.
- e. Discussion of results of radiation survey and confirmatory soil samples which indicates that the subject site meets unrestricted release requirements.
- f. Discussion of results of the State's site closure inspection.
- g. Documentation that release of this portion of the site will not negatively impact the remainder of the site to be closed at a later date, if it is a partial license termination case.

Note: Additional information may be required on a case-by-case basis for the termination of a non-in-situ uranium extraction license under the non-conventional uranium license category.

- B. The second basis would be NRC reviews of the Agreement State's uranium recovery regulatory program, currently conducted under the IMPEP. The results of the IMPEP reviews would provide a basis for confidence on the determinations and conclusions reached by the Agreement State, as set out in the completion report, and also a basis of confidence that the State's reviews, licensing actions, and inspections associated with termination have been conducted appropriately. The periodic reviews of selected technical areas, conducted under IMPEP, which also include training and qualifications of staff and adherence to necessary program procedures, e.g., license termination process for uranium recovery licenses or equivalent procedures, will also serve as a basis that all applicable standards and requirements are met.

The emphasis of NRC reviews of technical quality of inspection and licensing may be placed on different areas during each IMPEP review, for example, evaluating the financial surety portion of the State's uranium recovery program, or reviewing the State's licensing actions related to groundwater remediation or geotechnical aspects of the cover design. In addition, under IMPEP, the depth of review in any program area is increased if problem areas are identified. On occasion, NRC staff would also accompany State staff to the mill facilities during the actual reclamation or construction stage of the licensed activity, in order to evaluate the State's performance.

### III. Process

Based on the above discussion and the existing guidance (Attachment 2) for NRC licensees, the staff has developed a guidance document on the license termination process for conventional and non-conventional uranium mill licenses in Agreement States. The detailed step by step process is listed in Attachment 3. The NRC staff would review the completion review report and rely on the adequacy and compatibility of the Agreement State's program to regulate uranium recovery licensees to confirm that the State's conclusions demonstrate that all appropriate requirements have been met by its licensee. Note that an Agreement State request for amendment to release a portion of a site from license also requires NRC to make a determination based on a site specific completion review report for that portion of the site. Similar license termination processes would be followed for both partial and entire license termination cases.

Given a determination that all applicable standards and requirements have been met, the NRC should notify the State of its determination by formal correspondence. Upon notification from the NRC, the Agreement State should be ready to terminate the specific license, if it is a non-conventional uranium mill license, or amend the license to remove the remediated portion from that license, if the license is being partially terminated.

For the full termination of a conventional uranium mill license, the NRC staff would also review a site Long-Term Surveillance Plan (LTSP) submitted by the custodial agency. Provisions and activities identified in the final LTSP will form the bases of the custodial agency's long-term surveillance at the site. Note that sites that have been partially terminated have involved areas surrounding the actual milling area which were released without the need for a LTSP. The review of the LTSP would be very similar for both NRC and Agreement State licensees since the review and acceptance of the LTSP is conducted in accordance with 10 CFR § 40.28 which is the sole purview of the NRC. Given NRC's determination that all applicable standards and requirements have been met and upon notification from the NRC that a LTSP has been accepted, the Agreement State should be ready to terminate the conventional uranium license.

### CONCLUSION:

Staff will request review and comments on Attachment 3 from Agreement States with authority to regulate uranium recovery operations. After receipt and analysis of comments, Attachment 3 will be modified as warranted and issued as a final guidance document. Currently, the staff plans to apply similar license termination processes for both partial and entire license termination cases and make the determination relying on the review of a site specific completion review report requested from the Agreement State and NRC reviews of the Agreement State program conducted under the IMPEP. The completion review report should contain the conclusions from the State's review of a licensee's performance of remedial actions and document the State staff's bases for its conclusion that all requirements have been met. If the NRC has found that the State's program is adequate to protect public health and safety, found that the State's program for regulating uranium recovery is compatible with NRC's program, and found that the State staff's review of license termination is complete, the finding would be made that all applicable standards and requirements have been met.

RESOURCES:

The resources to review and concur on partial or entire site termination requests from Agreement States will be part of the routine activities of the OSP. Although this may require additional reviews when a site is only partially terminated, at this time, no additional resources are required to implement the actions discussed in this paper.

COORDINATION:

The Office of the General Counsel has no legal objection with the staff's proposed approach.

William D. Travers  
Executive Director  
for Operations

Attachments:

1. Completion Review Report
2. Guidance to the NRC Staff on the License Termination Process for Conventional Uranium Mill Licensees
3. Termination Process for Conventional and Non-conventional Uranium Mill Licenses in Agreement States

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## COMPLETION REVIEW REPORT

DATE: March 1997

DOCKET NO.: 40-8902      LICENSE NO.: SUA-1470

LICENSEE: Atlantic Richfield Company

FACILITY: Bluewater Uranium Mill

PROJECT MANAGER: Kenneth Hooks

TECHNICAL REVIEWERS: Elaine Brummett, Ted Johnson, Dan Rom

### Introduction

The Atlantic Richfield Company's (ARCO's) Bluewater site is one of the conventional uranium mill and tailings sites to be decommissioned and reclaimed by individual U.S. Nuclear Regulatory Commission licensees under Title II of the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA). UMTRCA requires that prior to termination of the license, the NRC shall determine whether the licensee has complied with all applicable standards and requirements. This report documents the NRC staff's bases for its conclusion that decommissioning and reclamation have been acceptably completed at the Bluewater site.

### Background

The Bluewater Uranium Mill site is located about 10 miles northwest of the city of Grants in Cibola County, New Mexico. The mill began operation in 1953, and ARCO discontinued milling operations and began site reclamation in 1982. The NRC assumed licensing responsibility for the site from the state of New Mexico in 1986. ARCO (then Anaconda Minerals Company) submitted its site reclamation plan to the NRC in 1986 (ARCO, 1986), and submitted a revised plan in 1990 (ARCO, 1990). The NRC approved the plan in 1990 (NRC, 1990). Decommissioning of the mill was begun in 1987, and completed in 1990 (ARCO, 1991). Reclamation of the site was completed in 1995 and ARCO submitted its Bluewater Uranium Mill Completion Report (CR) in April 1996 (ARCO, 1996A).

### Evaluation of Completion of Site Reclamation

The following sections provide the results of the evaluation of ARCO's site reclamation by technical specialists in geotechnical engineering, surface water hydrology and erosion protection, radiation cleanup and control, and groundwater hydrology.

### Geotechnical Engineering

The NRC staff reviewed the CR to evaluate whether the geotechnical engineering aspects of site reclamation were completed and documented in accordance with 10 CFR Part 40, Appendix A, Criteria 4 and 6, the approved Reclamation Plan (ARCO, 1990) and ARCO construction specifications. Items reviewed included descriptions of construction operations; as-built drawings; laboratory and field testing data; and quality control inspection reports. In addition to review of the CR, the evaluation was based on staff observations and reviews of records during site visits and on-site inspections (Attachment 2).

During its review, the NRC staff noted the following:

1. Appropriate tests (gradation and Atterberg limits) and inspections were performed by ARCO or its agents to ensure that the proper material type was placed in each phase of construction. Placement and compaction of construction materials were routinely inspected to ensure that moisture and density requirements were met, and soil moisture was uniform throughout the compacted lifts. The loose thickness of the lifts was verified periodically to ensure compliance with the specification requirements for each particular type of material.
2. Laboratory and field testing was conducted in accordance with acceptable test procedures by trained and qualified personnel. Records indicating acceptable calibration of measuring and testing equipment were provided during on-site inspections and in the CR.
3. The CR shows that frequencies of material testing and inspection complied with those specified in the Reclamation Plan (ARCO, 1990) and the NRC Staff Technical Position on Testing and Inspection Plans (NRC, 1989A).
4. Continuous inspections confirmed that the volume of organics included in the construction materials was limited to the range in the Reclamation Plan (ARCO, 1990) and in ARCO's specifications.
5. The radon barrier layer was continually inspected to ensure that the specified lift thicknesses and compaction levels were achieved.
6. The material type, placement, and compaction methods used for the radon barrier layer resulted in the desired permeability and density of the barrier.
7. As-built drawings in the CR adequately document that the completed reclamation activities were consistent with the NRC-approved Reclamation Plan (ARCO, 1990).

The NRC staff concludes that the geotechnical engineering aspects of reclamation were generally performed in accordance with the requirements of 10 CFR Part 40, Appendix A, Criteria 4 and 6, the Reclamation Plan (ARCO, 1990) and ARCO construction specifications.

#### Surface Water Hydrology and Erosion Protection

NRC staff reviewed the surface water hydrology and erosion protection aspects of remedial actions at ARCO to ensure that they were constructed in accordance with the applicable construction specifications. Areas of review included construction operations, laboratory and field testing, and as-built drawings. In addition, the review was based on NRC observations of the remedial actions and review of records and testing during NRC onsite inspections.

The reclamation design included erosion protection in several specific areas, including riprapped top slopes and side slopes. The top and side slopes were designed to prevent long-term erosion and gulying of the cell cover.

The NRC staff reviewed each of these features and determined that the testing, placement, and final configuration complied with specifications in the reclamation plan. The review was partially based on NRC staff observations and review of onsite records, as well as assessment of the verification results presented in the CR. In addition, the NRC staff reviewed records of the placement of riprap on the top and side slopes.

During the review, the NRC staff noted the following:

1. Tests (gradation and durability) and inspections were performed to ensure that erosion protection materials were properly selected. The review of the documentation indicated that placement of materials was routinely inspected to ensure that the rock size and gradation specifications were met. Likewise, the thickness of the rock layers were verified periodically to ensure compliance with the specifications for the particular type of material.
2. Laboratory and field testing was conducted in accordance with specified test procedures.
3. Testing and inspection frequencies for materials used at the site for erosion protection were documented as complying with the frequencies specified in the reclamation plan.
4. On June 10, 1996 (NRC, 1996B) the staff conducted an inspection of the rock placement at the ARCO site. During the inspection, the staff observed that several areas existed where the rock did not appear to be adequately placed. In several areas, particularly on the spillway of the main tailings impoundment, there were several large areas where the rock had not been placed in accordance with gradation and thickness specifications. Several areas appeared to be thin and did not appear to have rock of adequate size to meet the requirements of the construction specifications. The NRC staff requested that ARCO either repair the rock or provide additional justification that the rock had been properly placed.

By letter dated October 8, 1996, ARCO provided "Bluewater Mill Site Main Tailings Spillway Rock Verification." (ARCO, 1996F). This report supplemented the original CR and provided the results of additional sampling and construction of the erosion protection at the site. The staff reviewed this information and concluded that the rock repairs were properly made and that the rock in the spillway area is now in conformance with applicable requirements of the license. ARCO replaced rock in several areas and provided the results of in-place tests performed in several areas.

Based on NRC staff observations and review of onsite records during remedial actions, as well as assessment of the verification results presented in the CR and supplements to the CR, the NRC staff concludes that the required durability and gradation tests were performed during the remedial action. Based on these tests, the riprap is of adequate quality and has been acceptably placed.

Based on the information provided by ARCO, the staff concludes that the erosion protection that has been constructed at the site meets the requirements of the approved Reclamation Plan (ARCO, 1990) identified in License Conditions Nos. 36 and 38, and the following criteria of 10 CFR Part 40, Appendix A:

Criterion 1(c): Erosion, disturbance, and dispersion by natural forces over the long term are minimized.

Criterion 4(d): The rock cover reduces wind and water erosion to negligible levels, including consideration of such factors as the shape, size, composition, and gradation of the rock particles; rock cover thickness and zoning of particle size; and steepness of underlying slopes. Rock fragments are dense, sound, and resistant to abrasion, and free from cracks, seams, and other defects.

Criterion 6: The design will be effective for a period of 1000 years, or at least 200 years.

Criterion 12: Active on-going maintenance is not necessary to preserve isolation of tailings.

The contaminated tailings are protected from flooding and erosion by a properly-constructed rock riprap layer. The riprap has been designed, selected, and placed in accordance with the guidance suggested by the NRC staff. The selected rock meets durability requirements and is capable of providing the necessary erosion protection for a long period of time. Further, the riprap layers were placed in accordance with accepted engineering practice and in accordance with appropriate testing and quality assurance controls. The staff considers that the erosion protection will be effective over the 1000-year design life.

#### Radiation Cleanup and Control

The NRC staff reviewed radiation aspects of remedial actions at the ARCO Bluewater mill site to ensure that contaminated material was cleaned up and controlled in accordance with specifications in the Reclamation Plan, License Conditions 31 and 36, criteria in 10 CFR 40.42, and Part 40 Appendix A Criterion 6. Areas of review included contaminated material excavation, soil cleanup verification procedures and data, final radon flux measurements, and cover radiological data. The review was based partially on the staff's assessment of information presented in the CR, as amended by submittals dated September 23 (ARCO, 1996B), October 18 (ARCO, 1996C), November 5 (ARCO, 1996E), and December 3, 1996 (ARCO, 1996G). The Windblown Contamination

Cleanup Report of October 1992 (ARCO, 1992) was also reviewed. The Mill Decommissioning Report was reviewed previously by NRC staff and found acceptable (NRC, 1991). No buildings remain on the remediated portion of the site.

Decommissioning records review and confirmatory survey activities were conducted by staff during inspections performed June 10 to 12 (NRC, 1996B), October 3, 1996 (NRC, 1996C), and January 7, 1997 (NRC, 1997). These inspections documented that the data reviewed and the radiological survey results were acceptable, except for some Th-230 values which are addressed below.

The criteria and methods for site cleanup and for control of gamma exposure and radon flux from the disposal cell were established in the Reclamation Plan and concurred in by NRC staff (NRC, 1990) as providing assurance that the processing site and disposal cells would meet the requirements of 10 CFR Part 40 Appendix A. Subsequently, several approved revisions were made to the plan, as documented in License Conditions 31 and 36.

The regulations to be met for this portion of the CR review include 10 CFR 40.42(j) which requires, in part, NRC Form 314 or equivalent information, and a radiation survey and report with gamma radiation levels in mSieverts or microrentgen per hour at one meter. Also, Part 40.42(k) states that licenses will be terminated when NRC determines reasonable effort has been made to eliminate residual radioactive contamination, and the radiation survey and other submitted information demonstrate the premises are suitable for release. In addition, Part 40 Appendix A Criterion 6 has radiological requirements for the disposal cell cover and limits for radium (Ra-226) in soil.

Part 40 Appendix A does not contain criteria for thorium (Th-230) soil cleanup, although 40.42(k) indicates any residual contamination must be addressed. Therefore, a cleanup guideline for thorium (Th-230) was proposed in the event significant Th-230 levels had leached to a depth below the excavation depth for Ra-226, beneath the evaporation ponds. The guideline of 14.5 pCi/g Th-230 for surface material was based on meeting the 5 pCi/g Ra-226 criterion for 1000 years. This approach was considered appropriate by NRC staff because the ponds area is next to the disposal cell and is part of the parcel that will be deeded to the long-term custodian for perpetual maintenance.

During the review, with respect to the above criteria and commitments, NRC staff noted the following:

1. Soil Cleanup and Verification: NRC granted an exemption/alternative (license amendments 8 and 23) to the soil Ra-226 cleanup standards for 252 acres (210 acres south of the main pile and adjacent to the east edge of the carbonate pile, plus 42 acres of scattered outcrops in the restricted area) because the rough volcanic rock surface was difficult and costly to clean to the standard. The average Ra-226 value for these areas that will be deeded to the government for perpetual care is 9.9 pCi/g above background.

The evaporation ponds area was remediated and contoured to the final drainage design before all the Th-230 analyses were submitted to the NRC. Of 95 composite samples, the average value is 9.6 pCi/g. However, over approximately 30 acres, 13 Th-230 values exceed the guideline with a maximum value of 79.9 pCi/g (ARCO, 1996B). Staff noted an inconsistency with the ARCO data for 3 of the 12 archived samples analyzed by the NRC contractor laboratory. For one of these, the ARCO value was significantly higher than the value reported by other laboratory, but the source of the discrepancy could not be identified. The staff then requested that the licensee perform a risk assessment to determine the acceptability of the residual contamination assumed to remain.

ARCO provided a risk analysis (ARCO, 1996B) with one scenario involving an on-site maintenance worker one week a year, and the other involving a resident at the property fence (one mile from the thorium deposit). The dose to the worker at the maximum gamma level, based on a soil concentration of Th-230 of 70 pCi/g (resulting in 25 pCi/g Ra-226 in 1000 years), was calculated to be 2 mrem/year and the CEDE for inhalation contributed 0.2 mrem/year. The estimated inhalation dose to the downwind resident from the average soil Th-230 (10 pCi/g) was approximately 0.3 mrem/year.

The staff utilized the RESRAD computer code to calculate the maximum dose within 1000 years to a worker on-site two weeks a year and a resident farmer on site. Only the radon, soil, and ground pathways were used for the worker. All but the radon, fish, and dairy exposure pathways were used for the resident. The Th-230 soil levels (assumed 1.5 feet in depth) were assumed to be 50 pCi/g for the worker and an average of 20 pCi/g for the resident. The resulting maximum doses were 0.9 and 24.5 mrem/year for the worker and resident, respectively. These conservative scenarios indicate that potential exposure to the public would not approach the 100 mrem/yr limit, if the Th-230 material were to remain unexcavated. Because a maintenance worker would not be expected to spend more than a few hours a year in the elevated Th-230 area, and there will not be a farmer within a mile of the area, the public health is protected, even if the average Th-230 value is twice what ARCO reported.

In addition, ARCO submitted (ARCO, 1996G) a cost estimate of \$674,000 for remediation of the residual Th-230. This amount for construction appears reasonable and did not include the cost of additional soil sampling and analysis that would be necessary to demonstrate compliance with the guideline. Therefore, staff concludes that any potential minor health benefit from remediation of the Th-230 deposits is not justified because of the cost.

The CR indicates that standard procedures for soil verification were appropriately applied. The licensee reported values of counts/half minute with a shielded probe 4 inches above the ground. This procedure was approved with the Reclamation Plan as being most appropriate in areas with a large gamma "shine" field. The site, except for the outlying 1600 acres, was divided into 33 X 33 foot (10 x 10 meter) grids and composite soil samples or gamma readings were taken, as designated in the plan, to

verify cleanup levels. Staff determined that the quality assurance program delineated in the plan had been followed, and that the data is adequate to demonstrate compliance with the soil Ra-226 cleanup standards.

2. **Equipment and Building Cleanup:** A potential problem with the determination of surface activity was discovered during the inspection of October 3, 1996 (NRC, 1996C), because an incorrect efficiency factor was used for converting instrument readings (counts) to activity (disintegrations). However, the licensee had enforced a surface release limit 25 percent lower than the guideline value so no material exceeding the guideline limit was released from the site.
3. **Radon Flux:** Previous NRC approval was provided for the Main Tailings Pile (NRC, 1995B) and the Carbonate Tailings Pile (NRC, 1995A) radon flux data, and the data for the other disposal cells were reviewed with the CR. Radon flux measurements were performed as required by Criterion 6 (2) and (4) and the average flux values are well below the 20 pCi/m<sup>2</sup>s limit. The long-term radon flux design was approved with the Reclamation Plan (NRC, 1990).
4. **Cover Radiation Levels:** Staff determined that the number of measurements and resulting data for all of the disposal cells is acceptable for demonstrating that the cell covers have reduced gamma exposure levels from the waste to approximately background. Also, the licensee provided data (Appendix C of the Reclamation Plan) indicating that the material to be utilized for the radon barrier of the cover had Ra-226 values within the range of local soil background values.

Based on the above observations, and on the results of on-site inspections performed by NRC staff during and after construction, the NRC staff concludes that the radiological aspects of construction were performed in accordance with the approved Reclamation Plan and radiological cleanup and control verification data demonstrate compliance with Criterion 6 in 10 CFR Part 40, Appendix A. Information equivalent to NRC Form 314, radiation survey data, and a report were provided by the licensee. The NRC staff determined that the information provides reasonable assurance that the land, beyond the area to be deeded to the federal government, is suitable for release.

## Groundwater Remediation

The initial NRC license for ARCO's Bluewater site, issued by NRC letter dated November 21, 1986 (ARCO, 1996), required ARCO to continue to meet certain State of New Mexico discharge permits. The NRC approved a groundwater sampling program in Amendment 3 to the license, issued by letter dated June 1, 1988 (NRC, 1988), to gather data to establish appropriate background concentration limits. Such limits were established, for natural uranium, molybdenum and selenium, in LC 34 issued by Amendment 6, February 17, 1989 (NRC, 1989B). ARCO's groundwater corrective action program (CAP), essentially pumping and evaporation to return groundwater concentrations to background, was approved by the NRC in Amendment 7, dated August 18, 1989 (NRC, 1989C). This CAP was operated for a short time, but it proved to be ineffective in reducing contaminant concentrations. Consequently, a modified CAP, using a wick system to remove tailings liquor from the tailings impoundment, was approved by Amendment 20 issued February 16, 1993 (NRC, 1993).

The NRC staff agrees with ARCO's conclusions in the CR (ARCO, 1996A) that the groundwater corrective action program (CAP), approved by the NRC (NRC, 1993) and implemented by ARCO, reduced groundwater contaminants from the tailings impoundments to levels protective of human health and the environment, which were approved by the NRC as alternate concentration limits (ACL's) for natural uranium, molybdenum and selenium (ARCO, 1996A). ARCO conducted measurements in 1997 that demonstrated groundwater contaminant levels at the point of compliance wells met applicable standards, including those in 10 CFR Part 40, Appendix A, Criterion 5c and the ACL's. In addition, ARCO demonstrated that the final radon barrier on the impoundments met permeability requirements which will limit infiltration such that future exceedance of the standards is not expected. Staff review found the measurement techniques and results acceptable. Therefore, the groundwater is in compliance with Criteria 5 and 13 of 10 CFR Part 40, Appendix A, and License Condition 34.

## Summary and Conclusions

The NRC staff reviewed geotechnical engineering, surface water hydrology and erosion protection, radiation cleanup and control, and groundwater hydrology aspects of the reclamation of ARCO's Bluewater Mill site. Based on its evaluation of the CR and observations made during periodic on-site inspections, the NRC staff concludes that reclamation of the site was performed in accordance with accepted design and applicable standards. Therefore, the NRC staff concludes that reclamation of the 11e(2) byproduct material is acceptable, and license SUA-1470 for ARCO can be terminated contingent upon payment by ARCO of acceptable long-term care funding and acceptance by the NRC of the final Long-Term Surveillance Plan submitted by DOE.

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- NRC. 1996B Inspection Report 40-88902/96201. August 1, 1996
- NRC. 1996C Inspection Report 40-8902/96-01. December 9, 1996
- NRC. 1997 Inspection Report 40-8902/97-01. January 27, 1997

### Partial List of Inspections/Site Visits

<u>DATE</u>	<u>STAFF</u>	<u>PURPOSE</u>
7/7-11/86	N. Shopenn R. Heyer L. Wilborn R. Brich C. Jierree P. Garcia	Site assessment and radiation safety inspection
11/17-18/87	H. Rose R. Heyer	Radiation safety inspection
9/27/89	P. Garcia	Radiation safety inspection
2/5/90	P. Garcia G. Konwinski	Radiation safety inspection
4/9/91	R. Gonzales	Radiation safety inspection
3/22/91	D. Ward	Radiation safety inspection
4/23/91	D. Ward P. Garcia	Radiation safety inspection
5/20/93	P. Garcia	Decommissioning operations and radiation safety program
9/1/93	G. Konwinski	Decommissioning activities
3/29/94	R. Gonzales T. L. Johnson L. C. Carson	Decommissioning and reclamation activities
5/11/94	R. Evans L. C. Carson P. Garcia R. Gonzales K. Hooks	Site visit
8/30/94	D. Rom T. Harris	On-site construction review
3/8/95	L. C. Carson	Radiation safety inspection
3/27/95	T. L. Johnson	Inspection of erosion protection activities

DATE

STAFF

PURPOSE

6/10-12/96

K. Hooks  
T. L. Johnson  
M. L. McLean  
D. Rom  
E. Abelquist  
S. Abt  
J.C. Chen

Construction completion inspection

10/3/96

R. Evans  
R. Morton  
T. Vitkus

Soil cleanup inspection

1/7/97

R. Evans

Inspection of site reclamation

**GUIDANCE TO THE NRC STAFF**

**ON**

**THE LICENSE TERMINATION PROCESS FOR  
CONVENTIONAL URANIUM MILL LICENSEES**

**U.S. Nuclear Regulatory Commission**

**ATTACHMENT 2**

**Office of Nuclear Material Safety and Safeguards  
Division of Waste Management  
Uranium Recovery Branch**

**December 1996 / Rev. 0**

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## **1.0 BACKGROUND**

The Atomic Energy Act of 1954, as amended, (the Act) provides the statutory requirements for the transfer of the title and custody to byproduct material and any land used for the disposal of such byproduct material from a uranium mill licensee to either Federal or State control, prior to termination of the licensee's specific license. These requirements are codified in 10 CFR Part 40, at paragraph § 40.28, "General license for custody and long-term care of uranium or thorium byproduct materials disposal sites." 10 CFR 40.28, along with pertinent requirements laid out in Appendix A to 10 CFR Part 40 (Appendix A), provide for the completion of certain licensing actions prior to the transfer of the land and byproduct material to the United States or the appropriate State for long-term care.

The purpose of this document is to provide to the U.S. Nuclear Regulatory Commission staff specific direction to be applied in the course of the license termination process for Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA) Title II sites. The license termination process, including the roles of the respective involved organizations, is discussed in general, and then, various relevant issues are addressed in greater detail. This is the initial version of this guidance document, and as specific uranium mill licenses are terminated and title to the land and byproduct material is transferred to the appropriate governmental agency, future revisions are likely to be necessary. These revisions will address not only issues yet to be identified, but also will provide any additional necessary clarification of issues discussed herein.

## **2.0 ROLES OF INVOLVED ORGANIZATIONS**

### **2.1 U.S. Nuclear Regulatory Commission**

In accordance with Section 83c of the Act for NRC licensees, and Section 274c for Agreement State licensees, prior to termination of the specific license, the NRC determines whether the licensee has met all applicable standards and requirements under that license. For NRC licensees, this will involve NRC staff review of licensee submittals relative to the completion of decommissioning, reclamation, and, if necessary, groundwater cleanup. For Agreement State licensees, the State will conduct these reviews in accordance with its standards and regulations. Under 10 CFR 40.28, the NRC must concur with the State on the termination of its specific licenses. NRC's determination with respect to Section 274c of the Act will be conducted by the Office of State Programs (OSP) in consultation with the Office of Nuclear Material Safety and Safeguards. It is anticipated that this determination will rely on OSP's reviews of the Agreement State's program and on the State's documentation of its conclusions concerning the licensee's performance of remedial actions.

In addition, the NRC staff reviews the site Long-Term Surveillance Plan (LTSP) submitted by the custodial agency, for both NRC and Agreement State sites. Upon NRC acceptance of the LTSP, the NRC terminates the specific license (or concurs in the Agreement State's termination) and places the long-term care and surveillance of the site by the custodial agency under the general license provided at 10 CFR 40.28.

A final NRC responsibility is the determination of the final amount of long-term site surveillance funding. Criterion 10 of Appendix A specifies a minimum charge of \$250,000 (1978 dollars), revised to reflect inflation, which may be escalated on a site-specific basis due to surveillance and long-term monitoring controls beyond those specified in Criterion 12 of Appendix A. Detailed discussion of the bases used in developing the minimum charge and any escalated costs is provided in Section 3.4.

### **2.2 Uranium Mill Licensees**

Prior to license termination, licensees are required by license conditions to complete site decontamination and decommissioning, and surface and groundwater remedial actions consistent with NRC-approved (in the case of an NRC licensee) or Agreement State-approved (for an Agreement State licensee) decommissioning, reclamation, and groundwater corrective action plans.

Licensees will need to document the completion of these remedial actions in accordance with procedures developed by the NRC or the Agreement State. As discussed in Section 3.1, for NRC licensees, this information will include a report documenting completion of tailings disposal cell construction and accompanying quality

assurance/quality control (QA/QC) records, as well as radiation surveys and other information required under 10 CFR 40.42. Agreement State licensees will document their remedial action performance in accordance with the respective State requirements.

Because the LTSP must reflect the remediated condition of the site, the licensee will interact with the custodial agency in the preparation of the LTSP. Most likely, this will involve supplying the custodial agency with appropriate documentation (e.g., as-built drawings) of the remedial actions taken and reaching agreements (formal or informal) with the custodial agency regarding the necessary surveillance control features of the site (e.g., boundary markers, fencing). It is the custodial agency's responsibility to submit the LTSP to the NRC for approval. However, the licensee may elect to help prepare the LTSP, to whatever degree is agreed to between the licensee and the custodial agency.

Finally, the licensee provides the funding to cover long-term surveillance of the site, in accordance with Criterion 10 of Appendix A. The final amount of this charge will be determined by the NRC, based on the final conditions of the site.

Following termination of the existing license and transfer of the site and byproduct materials to the custodial agency, a licensee's remaining liability extends solely to any fraudulent or negligent acts committed prior to the transfer to the custodial agency, as provided in Section 83b(6) of the Act.

### **2.3 Custodial Agency**

Section 83 of the Act provides, that prior to termination of the specific license, title to the site and byproduct materials shall be transferred to either (1) the U.S. Department of Energy (DOE), (2) a Federal agency designated by the President, or (3) the State in which the site is located, at the option of the State. It is expected that DOE will be the custodial agency for most, if not all, of the sites.

It is the responsibility of the custodial agency to submit the LTSP to the NRC for review and acceptance. Provisions and activities identified in the final LTSP will form the bases of the custodial agency's long-term surveillance at the site. NRC's acceptance of the LTSP will render that site licensed under the general license in 10 CFR 40.28. Custodial agencies are required, under 10 CFR 40.28(c)(1) and (c)(2), to implement the provisions of the LTSP. These activities could include those not to be reflected in the long-term care charge, but voluntarily committed to by the custodial agency.

### **2.4 States**

As discussed in Section 2.3, the State has the option of becoming the custodial agency for a site located within its boundaries. This "right of first refusal" may be exercised either on a site-by-site basis or so as to cover all sites within the State's limits. This option should be exercised early enough in the license termination process so that termination of the specific license and transfer of the site to the appropriate custodial agency is not delayed unnecessarily. Written confirmation of a State's decision should be documented in a letter to DOE, from the Governor of the State, or another State official to whom the authority for this decision has been appropriately delegated. A copy of this letter should be transmitted to the NRC.

A State's authority over the regulation of the non-radiological constituents of groundwater is not impacted by its status, or lack thereof, as a custodial agency for any site within its boundaries. A State's authority, however, does not extend to the radiological constituents of groundwater (NRC, 1980b).

Finally, in addition to its potential role as a custodial agency, an Agreement State conducts the reviews of reclamation and decommissioning plans and groundwater corrective action programs for its licensees. Criteria used in these reviews are those applicable from Agreement State regulations which are compatible with the relevant requirements of Appendix A. Additionally, with NRC concurrence, an Agreement State terminates the specific licenses for its licensees, based on a review of a licensee's performance of remedial actions in accordance with approved plans.

### **3.0 THE LICENSE TERMINATION PROCESS**

A licensee considering termination of its Source Material License should have in place an acceptable (by the NRC or Agreement State, whichever is appropriate) site decommissioning and reclamation plan, and if necessary, an acceptable groundwater corrective action program. This section describes the termination process that follows an NRC licensee's completion of decommissioning, reclamation, and groundwater corrective action in accordance with the approved plans. Specific procedures for the NRC's concurrence in the termination of Agreement State licenses are under development by OSP.

#### **3.1 Licensee Documentation of Completed Remedial and Decommissioning Actions**

##### **3.1.1 Documentation of Completed Surface Remedial Actions**

Although uranium mill licensees are required to complete reclamation in accordance with an NRC- or Agreement State-approved plan, presently, there is no statutory or regulatory requirement for a licensee to submit formal documentation that the tailings

disposal cell was reclaimed in accordance with the approved plan. However, for the NRC staff to determine that all applicable standards and requirements have been met (under Section 83c of the Act), some form of documentation is necessary.

To ensure a timely and efficient NRC review, when reclamation of the tailings disposal cell is completed, the licensee should submit to the NRC, for review, a report detailing the conduct and completion of the reclamation construction activities. This Construction Completion Report (CCR) would consist primarily of QA/QC records and as-built drawings. A licensee may refer to the reports prepared by DOE to document completion of remedial actions at UMTRCA Title I Project sites as guidance in developing its CCR. However, some of the information provided in DOE's reports (e.g., original design calculations) is provided to ease the NRC staff's review rather than to meet documentation requirements.

If a CCR or similar report is not submitted, it will be necessary for the NRC staff to conduct a detailed technical review in order to meet its responsibilities under Section 83c of the Act. This review could involve several site visits and significant confirmation testing and would likely involve staff in the following technical disciplines: geotechnical engineering, surface water and erosion protection, and soil radiation cleanup. Accurate QA/QC records and photographs kept by a licensee during cell construction will be important input into the NRC staff's determination that reclamation has been conducted and completed in accordance with the approved plan.

If the NRC determines, as part of its review of the CCR or during a site inspection, that a licensee has neglected to compile QA/QC records or has inadequate records, the NRC may require it to conduct appropriate sampling of those portions of the completed cell that are in question (e.g., of the radon barrier). If a licensee is unwilling or unable to comply, the NRC staff or NRC contractors will conduct the sampling, and the costs involved will be included in the licensing and inspection fees assessed under 10 CFR 170.31. In addition, if a requirement to maintain QA/QC records is part of an approved reclamation plan, a licensee's lack of such records may be interpreted as a violation of the relevant license condition. Appropriate NRC action would be taken in such instances.

### **3.1.2 Documentation of Completed Site Decommissioning**

Licensees are also required under 10 CFR 40.42(i) to document the results of site decommissioning, which is accomplished by conducting a radiation survey of the premises where the licensed activities were carried out. The results of this survey, the contents of which are specified at 10 CFR 40.42(i)(2), are submitted to the NRC for review. A licensee has the option of demonstrating that the premises are suitable for release in a manner other than that specified at § 40.42. Additional documentation

pertinent to site decommissioning and soil cleanup may be required by specific license condition.

### **3.1.3 Documentation of Completed Groundwater Corrective Actions**

Criteria 5A-5D, along with Criterion 13, of Appendix A incorporate the basic groundwater protection standards imposed by the U.S. Environmental Protection Agency (EPA) in 40 CFR Part 192, Subparts D and E (48 FR 45926; October 7, 1983). These standards apply during operations and prior to the end of closure. At a licensed site, if these groundwater protection standards are exceeded, the licensee is required to put into operation a groundwater corrective action program (CAP) (Criterion 5D of Appendix A). The objective of the CAP is to return the hazardous constituent concentration levels to the concentration limits set as standards.

For licensees with continuing groundwater cleanup, NRC approval is required for the termination of corrective action. A licensee should submit appropriate groundwater monitoring data and other information that provide reasonable assurance that the groundwater has been cleaned to meet the appropriate standards. This may include an application for alternate concentration limits (ACLs) if the licensee concludes some ACLs for certain constituents are necessary. ACLs will be reviewed by the staff in accordance with the most current version of the NRC Staff Technical Position "Alternate Concentration Limits for Title II Uranium Mills: Standard Format and Content Guide, and Standard Review Plan for Alternate Concentration Limit Applications" (NRC, 1996).

### **3.2 NRC Review of Completed Closure Actions**

Upon receipt of the CCR, decommissioning report, groundwater completion report or ACL application, the NRC staff will review the document first for completeness and level of detail. Given a favorable finding, the NRC staff will then review the content of the report for documentation of acceptable completion of the applicable aspect of closure. When, based on this review, the NRC staff determines that the action has been conducted in accordance with the license requirements and regulations, the NRC will notify the licensee by formal correspondence, and, if the licensee so requests, amend the specific license, by deleting applicable license requirements for reclamation, decommissioning, or groundwater cleanup, and identifying requirements for any disposal cell observational period and/or environmental monitoring. As part of its review, NRC staff will conduct site inspections, examining first-hand the closure actions taken, including the QA/QC records.

Additionally, NRC staff will conduct a final construction-completion inspection, which is expected to consist of a site walk-over and an examination of construction records. No independent verification of completed actions (e.g., confirmatory coring of the radon barrier) is expected, except on a case-by-case basis, as discussed previously.

With respect to construction of the tailings cell, the NRC staff's review of the CCR, coupled with site inspections, will ensure that the disposal cell was constructed in accordance with the approved design and done so "correctly" (e.g., QA/QC records show the appropriate number of material lifts were placed).

The NRC staff will rely on site inspections as the primary means of determining acceptable implementation of the licensee's approved decommissioning plan, especially in regards to soil cleanup. These inspections will consist of: (1) reviews of procedures, (2) evaluations of procedure implementation, (3) evaluations of records and quality assurance, and (4) limited gamma surveys and soil sampling. In this way, the staff will gain a needed level of confidence in the licensee's performance to support its evaluation of the final decommissioning survey report. Confirmatory sampling, either by the NRC or its contractors, will be conducted at sites for which additional confirmation beyond inspections is necessary. Specific criteria will be employed to identify those sites requiring confirmatory sampling.

### **3.3 Observational Periods**

#### **3.3.1 Following Completion of Surface Remedial Actions**

Although no statutory or regulatory requirement exists for an observational period following the completion of surface remedial actions, this period is necessary for the NRC to assess the potential long-term stability of the tailings disposal cell. The length of this observational period will be determined on a site-specific basis, with a minimum period of one year, commencing at the completion of the erosion cover. Licensees should report significant cell degradation (e.g., the development of settlement or erosional features) occurring during this period.

Sites employing a "full self-sustaining vegetative cover" (Criterion 4 of Appendix A) will be required to have an observational period of at least two years, and possibly as long as five years, consistent with the bases for Appendix A (NRC, 1980).

A *de facto* observational period may exist at most sites where cleanup of groundwater contamination continues following the completion of surface reclamation (i.e., construction of the tailings disposal cell).

#### **3.3.2 Groundwater Remediation**

As specified in Criterion 5D of Appendix A, all identified hazardous constituents for which compliance sampling is being conducted at a licensed site must be returned to the concentration limits set as standards (i.e., the specified compliance limits) prior to termination of the specific license. At license termination, the NRC will require licensees to sample for all constituents previously identified in the tailings liquor to

ensure that no further remediation is necessary. The NRC will not terminate a specific license while a groundwater CAP is in operation.

A groundwater CAP which employs evaporation ponds may also delay the completion of surface reclamation, if pond sludges are to be disposed of in the completed tailings disposal cell.

### **3.4 Long-Term Site Surveillance Funding**

Prior to termination of the specific license, the NRC will set the final amount of the long-term site surveillance charge to be paid by the licensee in accordance with Criterion 10 of Appendix A. The NRC's process for determining this amount will include consultations with the licensee and the custodial agency. Payment of this charge to the U.S. general treasury or to the appropriate State agency is required prior to termination of the specific license.

#### **3.4.1 Bases for Determination of Surveillance Charge**

The basic criterion for tailings disposal is to not depend on perpetual human care and maintenance to preserve the isolation of the tailings. The NRC, in Criterion 1 of Appendix A, concludes that:

**"The general goal or broad objective in siting and design decisions is permanent isolation of tailings and associated contaminants by minimizing disturbance and dispersion by natural forces, and to do so without ongoing maintenance."**

However, as further indicated in Criterion 1, for practical purposes, specific design and siting considerations must involve finite time limits. For this reason, Criterion 6 contains longevity standards for design of the disposal cell.

In order that the isolation of the tailings and associated contaminants be preserved to the extent possible, the Act provided that title to the byproduct material and associated land be transferred to the care of the United States or the State, as discussed previously. The NRC has interpreted such long-term custody by a governmental agency, whether Federal or State, as "a prudent, added measure of control" (NRC, 1980a), so that land uses that might contribute to the degradation of the cover or lead to direct human exposures can be prevented.

In the final Generic Environmental Impact Statement (GEIS) on Uranium Milling (NRC, 1980a), the NRC staff developed the bases for the long-term surveillance charge, given the intent that no ongoing active maintenance of site conditions should be necessary to

preserve waste isolation. In the GEIS, the assumptions underlying the so-called "passive monitoring" approach to surveillance of the site are as follows:

1. An annual visual inspection of the site, either as a site visit or in a flyover, lasting one to two days;
2. No maintenance of equipment or facilities, no fence replacement, and no sampling or airborne environmental monitoring would be expected.
3. Little to no groundwater monitoring would be required, and if necessary, monitoring would consist of sampling for indicator constituents (e.g., Ra-226) using portable equipment (no heavy sampling or monitoring equipment necessary);
4. The slow movement of groundwater beneath the sites would allow for relatively infrequent sampling (e.g., once every 2-5 years);
5. Essentially, the only costs for continued surveillance/maintenance would consist of time spent in preparing for the inspection, travel to the site, conduct of the inspection, and annual report writing; and
6. Minimal NRC oversight would be required.

Passive monitoring, thus, would not involve such activities as: irrigation, hauling of fill, regrading, or seeding.

Finally, as discussed previously, licensees will contribute the funds necessary to cover the costs of long-term surveillance of their sites. The charge assessed is a one-time fee, and of an amount such that interest on the funds, assuming a 1 percent annual real interest rate, will yield a corresponding amount sufficient to cover the annual costs of site surveillance. The GEIS provides more detailed discussion regarding the determination of this interest rate.

### 3.4.2 Determination of Surveillance Charge Amount

Based on the assumptions discussed in Section 3.4.1, the NRC developed the minimum long-term surveillance charge of \$250,000 (1978 dollars) reflected in Criterion 10 of Appendix A. It is this charge, adjusted to account for inflation, that the licensee is required to pay into the general treasury of the United States, or alternately, to the appropriate State agency (if the State is to become the long-term site custodian). The methodology the NRC staff will use to determine the adjusted surveillance charge that accounts for inflationary increases since 1978 involves: (1) using the Consumer Price Index (CPI) available at the time the licensee requests termination and (2) applying the

rate of increase for the last month for which it has been calculated to any following month leading to license termination. For example, in June 1996, the NRC determined the final surveillance charge for the TVA/Edgemont site. In doing so, the NRC staff used the April 1996 CPI and applied the rate of increase between March and April to the months of May and June.

Criterion 10 does allow for the escalation of this minimum charge, if, on the basis of a site-specific evaluation, the expected site surveillance or control requirements are determined to be significantly greater than those specified in Criterion 12 of Appendix A (i.e., annual inspections to confirm site integrity and determine the need, if any, for maintenance and/or monitoring).

Escalation could result from a licensee's proposal of alternatives to the requirements in Appendix A, as allowed under Section 84c of the Act. For example, a licensee could demonstrate by analysis that the only mechanism for achieving a minimum disposal cell design life of 200 years at its site is through the use of ongoing maintenance. The NRC may approve such a design if it finds that the design will achieve a level of stabilization and containment for the site concerned, and a level of protection of public health and safety and of the environment which is equivalent to, to the extent practicable, or more stringent than, the level which would be achieved by the NRC's requirements. However, the licensee would likely be required to place additional funds in the long-term surveillance charge to cover the costs of the ongoing maintenance.

Another situation which may lead to the escalation of the minimum charge is the recognition that some degree of active care (e.g., fence upkeep, vegetation control, maintenance of erosional control measures) is necessary to preserve the as-designed conditions of the site. This need should become apparent in the course of site observations during the reclamation and observational periods.

In any case, any escalation in the minimum charge will be discussed with the licensee and long-term custodian, prior to license termination. Any final variance in the funding requirements will be determined solely by the NRC.

A situation may arise in which the custodial agency desires to have commitments in the LTSP that are beyond those required in Appendix A and which are not determined necessary by the NRC. In such a case, the amount of the long-term surveillance charge would not be affected (NRC, 1990; Detailed Comment Analysis, Comment 1.2). The custodial agency will need to identify a mechanism for funding these additional self-imposed requirements.

### 3.4.3 Payment of Long-Term Surveillance Charge

Licensees may pay the final site surveillance charge directly to the NRC or the custodial agency. If paid to the NRC, the funds will be deposited, in accordance with the Miscellaneous Receipts Act, in the U.S. general treasury. A custodial agency receiving payment from the licensee, will need to document receipt and subsequent deposition of the payment. Copies of such documentation should be provided to the NRC.

Finally, 10 CFR 150.32(a) provides that, when an Agreement State license is terminated and the disposal site is to be transferred to the Federal government for long-term care, all funds collected by the Agreement State for the purposes of long-term surveillance will be transferred to the United States.

### **3.5 Preparation of the Long-Term Surveillance Plan**

While surface remediation and groundwater cleanup activities are ongoing, it is in the best interest of the licensee to begin interaction with the custodial agency with regard to that agency's preparation of the site LTSP. The custodial agency's responsibilities under the general license are defined in the LTSP, the required contents of which are provided at 10 CFR 40.28 and in Criterion 12 of Appendix A. These contents include:

- a legal description of the site to be transferred and licensed;
- a detailed description of the site, as a baseline from which future inspectors can determine the nature and seriousness of any changes (licensees may reference previously submitted information, to the extent applicable, in providing this description (10 CFR 40.31(a)));
- a detailed description of the long-term surveillance program, including: (a) the frequency of inspections and reporting to the NRC; (b) the frequency and extent of groundwater monitoring, if required; (c) appropriate groundwater concentration limits; and (d) inspection procedures and personnel qualifications;
- the criteria for follow-up inspections in response to observations from routine inspections or extreme natural events; and
- the criteria for instituting maintenance or emergency measures.

In addition to these regulatory requirements, the NRC will also require that the LTSP contain documentation of title transfer of the site from the licensee to the custodial agency. This requirement does not apply to sites located on Indian lands, since transfer does not occur for such sites (Criterion 11F of Appendix A).

Because the LTSP must reflect the remediated condition of the site, it is expected that the existing licensee will interact with the custodial agency in the preparation of the

**LTSP.** As discussed in Section 2.2, this will likely involve supplying the custodial agency with appropriate documentation (e.g., as-built drawings) of the remedial actions taken and reaching agreements (formal or informal) with the custodial agency regarding the necessary surveillance control features of the site (e.g., boundary markers, fencing). Although it is possible that the LTSP may be prepared by the licensee, it is more likely that the document will be developed by the custodial agency, since the LTSP will reflect post-transfer responsibilities committed to by the custodial agency. The LTSP must be submitted to the NRC for approval by the custodial agency.

As the likely custodial agency for most, if not all, of the sites, DOE has proposed an approach intended to streamline NRC staff reviews of site LTSPs. This approach would involve NRC approval of a "generic LTSP shell" prepared and submitted by DOE. For sites under the long-term care of DOE, significant portions of the LTSP will not change from site to site (e.g., criteria for followup inspections and for instituting maintenance or emergency measures). NRC's approval of the "shell" would cover this generic information, and allow the NRC staff to focus its review on the site-specific information in the LTSP. This information may reflect site-specific activities which are not to be reflected in the long-term care charge, but are voluntarily committed to by the custodial agency. The "shell" is currently under development by the NRC and DOE.

### **3.6 Site Ready for License Termination**

When a licensee has completed site reclamation, decommissioning, and, if necessary, groundwater corrective action, and is ready to terminate its specific Source Material License, it will need to formally notify the NRC of its intentions. Such notification should be accompanied by a completed NRC Form 314, "Certificate of Disposition of Materials."

Additionally, an environmental report (ER) is required under 10 CFR 51.60(b)(3) for termination of a license for the possession and use of source material for uranium milling. However, because the environmental impacts associated with reclamation and decommissioning of a uranium mill site will already have been assessed by the NRC staff prior to license termination, licensees seeking license termination can submit a supplemental ER summarizing site decommissioning and reclamation objectives, activities, and results.

Agreement State licensees should apply to their Agreement State for license termination, providing the appropriate State-required documentation, as needed.

### **3.7 Termination of the Specific License/Issuance of the General License**

Actual termination of a licensee's specific license and the subsequent placement of the site under the general license provisions of 10 CFR 40.28 will involve a number of

separate actions to be completed by the NRC. Significant internal coordination (and external, if Agreement State licensees are involved) will be required so that these actions will be completed in an efficient and timely manner, thereby ensuring that the byproduct material and any land used for the disposal of such byproduct material remain under NRC license throughout the process.

### **3.7.1 NRC Determination under Section 83c/274c of the Act**

Under Section 83c of the Act for NRC licensees, or Section 274c for Agreement State licensees, the NRC determines whether all applicable standards and requirements have been met by the licensee in the completion of site reclamation, decommissioning, and groundwater corrective action. Necessarily, this determination will rely primarily upon NRC or Agreement State reviews and acceptance of the documentation provided by the licensee. In addition, NRC or Agreement State site closure inspection activities, potentially including limited confirmatory radiological surveys, will provide supplemental information to the NRC's determination.

For Agreement State licensees, NRC's periodic reviews of the Agreement State's regulatory program will provide confidence that the State's reviews and licensing actions associated with termination have been conducted appropriately, from a technical, administrative, and procedural perspective. The NRC staff will not conduct independent detailed technical reviews of a Agreement State licensee's documentation of completed site decommissioning and reclamation.

### **3.7.2 NRC Review and Acceptance of the LTSP**

An LTSP is required prior to termination of the specific license and placement of the site and byproduct material under the 10 CFR 40.28 general license. Review and acceptance of the LTSP is the sole purview of the NRC. Formal concurrence on the LTSP by other entities, including the State in which the site is located, is not provided for, since these entities have no regulatory authority under the Act, during the long-term care period. However, the NRC will accept public comments on any licensing action taken by the Commission. Lack of NRC acceptance of a site LTSP can delay termination of the specific license.

The NRC staff's acceptance of an LTSP will be documented in written notification to the custodial agency, and, separately, by noticing the action in the Federal Register. In addition, for Agreement State licensees, the NRC will also notify the relevant Agreement State of the action.

### **3.7.2.1 Issuance of a specific order under 10 CFR 40.28**

If an acceptable LTSP has not been received by the NRC for a reclaimed site ready for transfer to the custodial agency, two options are available to the NRC. First, if appropriate, the Commission may choose to not terminate the existing license for a short period of time, while awaiting an acceptable LTSP. Alternately, under 10 CFR 40.28, the NRC may issue a specific order to the custodial agency to take custody of the site and to commence long-term surveillance, while the agency prepares the LTSP for final NRC approval.

A substantial supporting basis would be required to support NRC issuance of an order. An understanding of the circumstances leading to the custodial agency's inability to take the site would also be necessary. Factors that would be considered include whether:

- (1) adequate notice (at least 16 months) has been provided by the existing licensee to allow the custodial agency to affect title transfer to the land and byproduct material;
- (2) sufficient time (at least two years) has been allowed for the custodial agency to prepare, and the NRC to review, the LTSP;
- (3) the NRC has reviewed the CCR, decommissioning report, and groundwater cleanup report, and conducted the final license-termination inspection and found that the closure actions were completed in an acceptable manner;
- (4) site degradation has occurred, and if so, whether appropriate repairs have been completed;
- (5) the required long-term surveillance funding payments have been made to the U.S. general treasury or to the designated State agency; and
- (6) the custodial agency has an acceptable basis for delaying for inclusion of the site under the general license.

In cases where DOE or another Presidentially-designated Federal agency is to be the long-term custodian, and is unable to take custody of the site due to lack of funding, the NRC may still order the agency to do so. The intended custodial agency will have at most one year (i.e., the time by which an annual site inspection is to have been completed) in which to obtain the funds through the necessary appropriations process.

### **3.7.3 Transfer of Site Control to the Custodial Agency**

Given a determination that all applicable standards and requirements have been met and acceptance of the site LTSP, the NRC will need to complete the remaining relevant licensing actions: (1) terminating the specific license by letter of termination addressed to the specific licensee, or concurring in the Agreement State's termination of the specific license; (2) placing the site under the general license in 10 CFR 40.28; (3) noticing in the Federal Register the completion of these licensing actions; and (4) informing appropriate Federal and State officials directly of the termination of the specific license and the placement of the site under the general license.

For Agreement State licenses, these actions will need to be closely coordinated with the relevant Agreement State. Following the NRC's concurrence in the proposed action, the Agreement State should be ready to terminate the specific license and to transfer the long-term care funds to the U.S. general treasury upon notification from the NRC that the LTSP has been accepted. The long-term custodian, for its part, should be prepared to accept title to the land and byproduct material. Completion of these final actions should occur within a relatively short period of time (e.g., within a week).

## **4.0 ADDITIONAL ISSUES**

### **4.1 UMTRCA Title II Sites on Indian Lands**

For UMTRCA Title II disposal sites on Indian lands, UMTRCA provides that long-term surveillance will be accomplished by the Federal government and that the licensee (i.e., the custodial agency) will be required to enter into arrangements with the NRC to ensure this surveillance. UMTRCA does not state explicitly which Federal agency is responsible for the disposal site. In addition, because these sites are located on Indian lands, no title transfer will occur.

The NRC will work out long-term care arrangement for these disposal sites on a case-by-case basis. Likely, this will involve a site access agreement between the Indian Tribe, the custodial agency, and the NRC, to allow the custodial agency to conduct the required site surveillance. Currently, the only site on Indian lands is Western Nuclear, Inc.'s Sherwood uranium mill, located on the Spokane Indian Tribe reservation in eastern Washington State.

### **4.2 Concurrent Jurisdiction**

It is the intent of the NRC staff to make a good faith effort in working with the States on issues related to a licensee's completion of remedial actions and preparation for license termination. However, concurrent jurisdictional issues between the NRC and the States

may arise over the regulation of the non-radiological constituents of groundwater (previously, the NRC has concluded that it has sole jurisdiction over the radiological groundwater constituents (NRC, 1980b)). Such issues would involve disagreements over the groundwater concentration limits to which licensees must restore, especially when a State's concentration limits for certain constituents are lower than the NRC's. While the NRC staff will, to the extent possible, accommodate a State's perspective, it retains the right to terminate a specific license should a licensee have completed closure activities in accordance with NRC-approved closure plans.

Where the issues involved are not those of direct NRC concern, the NRC staff will address such issues with the States or other Federal agencies on a case-by-case basis.

Currently, four sites (two NRC licensees: the United Nuclear Corporation/ Church Rock site, and the Homestake Mining Company/Grants site; and two Agreement State licensees: the Cotter Corp/Canon City and the UMETCO/Uravan sites, both in Colorado) are on the Superfund National Priorities List. For these sites, the NRC considers that it will need to determine if it is appropriate to terminate any of these licenses on a case-by-case basis.

## 5.0 REFERENCES

U.S. Nuclear Regulatory Commission [NRC], 1980a, "Final Generic Environmental Impact Statement on Uranium Milling," NUREG-0706, 3 vols, September 1980.

NRC, 1980b, "OELD Legal Opinion on Two Questions Relating to Operation of the Uranium Mill Tailings Radiation Control Act of 1978," Shapar, H.K., memorandum to Commissioner Ahearn, April 28, 1980.

NRC, 1990, "Rulemaking Issue (Affirmation): Amendments to 10 CFR Part 40 for General Licenses for the Custody and Long-Term Care of Uranium and Thorium Mill Tailings Disposal Sites," SECY-90-282, August 10, 1990.

NRC, 1996, "Staff Technical Position: Alternate Concentration Limits for Title II Uranium Mills: Standard Format and Content Guide, and Standard Review Plan for Alternate Concentration Limit Applications," February 1996.

# Termination Process for Conventional and Non-Conventional Uranium Mill Licenses in Agreement States

Termination of uranium licenses in Agreement States has been divided into two major parts as follows: (a) termination of conventional uranium mill licenses; and (b) termination of non-conventional uranium mill licenses (mainly in-situ uranium extraction licenses).

## (a) Termination of Conventional Uranium Mill Licenses

Step 1 through step 7 are applied to entire license termination cases; steps 1, 2, 5 and 6 are applied to partial license termination cases.

### **Step 1: Licensee Documentation of Completed Remedial and Decommissioning Actions**

Licensees are required under 10 CFR 40.42(j) or equivalent Agreement State regulations to document the results of site decommissioning, which is accomplished by conducting a radiation survey of the premises where the licensed activities were carried out. The results of this survey, the contents of which are specified at the Agreement State regulation equivalent to

10 CFR 40.42(j)(2), are submitted to the State for review.

Criteria 5A-5D, along with Criterion 13, of Appendix A under 10 CFR 40 or equivalent Agreement State regulations incorporate the basic groundwater protection standards imposed by U.S. Environmental Protection Agency (EPA) in 40 CFR Part 192, Subparts D and E. These standards apply during operations and prior to the end of closure. If the groundwater protection standards are exceeded, the licensee is required to put into operation a groundwater corrective action program (CAP). The objective of the CAP is to return the hazardous constituent concentration levels to the concentration limits set as standards. For licensees with continuing groundwater cleanup, State approval is required for the termination of corrective action. Appropriate groundwater monitoring data and other information that provide reasonable assurance that the groundwater has been cleaned to meet the appropriate standards are submitted to the State for review.

### **Step 2: Review of Completed Closure Actions by the Agreement State**

Upon receipt of the decommissioning report, and if necessary, groundwater completion report, the State staff should review the content of the reports for documentation of acceptable completion of the applicable aspect of closure. The State staff should also review the licensee's completed reclamation of the tailings disposal cell. As part of its review, the State staff should conduct site inspections, examining first-hand the closure actions taken. Additionally, the State staff should conduct a final construction-completion inspection, which is expected to consist of a site walk-over.

Typically, there is an observational period following the completion of surface remedial actions for the State to assess the potential long-term stability of the tailings disposal cell. Licensees should report significant cell degradation occurring during this period. All identified hazardous constituents for which groundwater compliance sampling is being conducted at a licensed site must be returned to the concentration limits set as standards prior to termination of the specific license. At license termination, the State should require licensees to sample for all constituents previously identified in the tailings liquor to ensure that no further remediation is necessary. The State should not terminate a specific license while a groundwater CAP is in operation.

### **Step 3: Long-Term Site Surveillance Funding**

Prior to termination of the specific license, the NRC should establish the final amount of the long-term site surveillance fund to be paid by the licensee in accordance with Criterion 10 of Appendix A under 10 CFR 40. The

NRC's process for determining this amount should include consultations with the State and the custodial agency. Payment of this amount to the appropriate State agency is required prior to termination of the specific license.

#### **Step 4: Preparation of the Long-Term Surveillance Plan (LTSP)**

While surface remediation and groundwater cleanup activities are ongoing, it is in the best interest of the licensee to begin interaction with the custodial agency with regard to that agency's preparation of the site LTSP. The custodial agency's responsibilities under the general license are defined in the LTSP. The required contents of which are provided at 10 CFR 40.28 and in Criterion 12 of Appendix A.

In addition to the regulatory requirements, the NRC should also require that the LTSP contain documentation of title transfer of the site from the licensee to the custodial agency. Because the LTSP must reflect the remediated condition of the site, it is expected that the existing licensee will interact with the custodial agency in the preparation of the LTSP.

#### **Step 5: Site Ready for License Termination**

When a licensee has completed site reclamation, decommissioning, and/or groundwater corrective action, and is ready to terminate its specific source material license, the licensee should formally notify the State of its intentions.

#### **Step 6: Termination of the Specific License**

Under Section 150.15a(a), the NRC determines whether all applicable standards and requirements have been met by the licensee in the completion of site reclamation, decommissioning, and/or groundwater corrective action. After completing the review of the licensee's performance of remedial actions, the State will be requested to submit a completion review report documenting the State staff's bases for its conclusion that all requirements have been met to the NRC for review.

Upon receipt of the completion review report submitted by the State, the NRC staff would review the document for completeness of the State's review process. If the content of the completion review report did not demonstrate that a complete review has been performed, the NRC could request additional information from the State prior to making its determination. The completion review report, similar to that contained in Attachment 1, should include the following information:

1. A brief description of licensee's activities associated with decommissioning, tailings remediation and/or groundwater cleanup.
2. Documentation that the completed surface remedial actions were performed in accordance with license requirements and regulations.
3. Documentation that the completed site decommissioning actions were performed in accordance with license requirements and regulations. This documentation should include a discussion of results of radiation survey and confirmatory soil samples which indicates that the subject site meets unrestricted release requirements.
4. Documentation that the completed groundwater corrective actions, if necessary, were performed in accordance with license requirements and regulations.
5. Discussion of results of State's site closure inspection.

6. Documentation that release of this portion of the site will not negatively impact the remainder of the site to be closed at a later date, if it is a partial license termination case.

NRC's determination shall rely upon the State's reviews and acceptance of the documentation provided by the licensee. In addition, results of the State site closure inspection activities, potentially including limited confirmatory radiological surveys, will provide supplemental information to the NRC's determination. NRC's periodic IMPEP reviews of the Agreement State's regulatory program provide confidence that the State's reviews, licensing actions, and inspections associated with termination have been conducted appropriately, from a health and safety (adequacy) and compatibility perspective. Given a determination that all applicable standards and requirements have been met, the NRC should notify the State of its determination by formal correspondence. If it is a partial license termination case which an LTSP is not required, the State should be ready to amend the license to remove the remediated portion from it.

### **Step 7: Termination of the Specific License/Issuance of the General License**

In termination of an entire license, an LTSP is required prior to termination of the specific license and placement of the site and byproduct material under the 10 CFR 40.28 general license. Review and acceptance of the LTSP is the sole purview of the NRC. Lack of NRC acceptance of a site LTSP can delay termination of the specific license.

The NRC staff's acceptance of an LTSP should be documented in written notification to the relevant Agreement State, custodial agency, and, separately, by noticing the action in the Federal Register. Given NRC's determination that all applicable standards and requirements have been met and upon notification from the NRC that LTSP has been accepted, the Agreement State should be ready to terminate the specific license and to transfer the long-term care funds to the U.S. general treasury. The long-term custodian, for its part, should be prepared to accept title to the land and byproduct material.

### **(b) Termination of Non-conventional Uranium Mill Licenses (Mainly In-Situ Uranium Extraction Licenses)**

The following steps are applied to both partial and entire license termination cases.

#### **Step 1: licensee documentation of Completed Decommissioning and/or groundwater restoration Actions**

When the surface reclamation and/or groundwater restoration is complete, the licensee should submit (i) groundwater information which demonstrates that groundwater has been restored in accordance with the State criteria and (ii) documentation indicating that the production, injection, and monitoring wells have been closed and plugged in accordance with the State criteria, to the State for review.

Licensees are also required under 10 CFR 40.42(j) or equivalent Agreement State regulations to document the results of site decommissioning, which is accomplished by conducting a radiation survey of the premises where the licensed activities were carried out. The results of this survey, the contents of which are specified at the Agreement State regulation equivalent to 10 CFR 40.42(j)(2), are submitted to the State for review.

When a licensee is ready to terminate its specific source material license, the licensee should formally notify the State of its intents.

#### **Step 2: Review of Completed Closure Actions by the Agreement State**

Upon receipt of the decommissioning report, and if necessary, groundwater restoration report, the State staff should review the content of the report for documentation of acceptable completion of the applicable aspect of closure. As

part of its review, the State staff should conduct site inspections, examining first-hand the closure actions taken. Additionally, the State staff should conduct a final site inspection, which is expected to consist of a site walk-over.

### **Step 3: Termination of the Specific License**

Under Section 150.15a(a), the NRC determines whether all applicable standards and requirements have been met by the licensee in the completion of decommissioning and/or groundwater restoration actions. After completing the review of the licensee's performance of remedial actions, the State will be requested to submit a completion review report documenting the State staff's bases for its conclusion that all requirements have been met to the NRC for review.

Upon receipt of the completion review report submitted by the State, the NRC staff would review the document for completeness of the State's review process. If the content of the completion review report did not demonstrate that a complete review has been performed, the NRC could request additional information from the State prior to making its determination. The completion review report, similar to that contained in Attachment 1, should include the following information:

1. A brief description of licensee's activities associated with license termination.
2. Groundwater information which demonstrates that the groundwater has been adequately restored to meet the State restoration criteria.
3. Documentation that the production, injection, and monitoring wells have been closed and plugged in accordance with the State criteria.
4. Decommissioning information which documents that all contaminated materials have been removed from the site.
5. Discussion of results of radiation survey and confirmatory soil samples which indicates that the subject site meets unrestricted release requirements.
6. Discussion of results of the State's site closure inspection.
7. Documentation that release of this portion of the site will not negatively impact the remainder of the site to be closed at a later date, if it is a partial license termination case.

Note: Additional information may be required on a case-by-case basis for the termination of a non-in-situ uranium extraction license under the non-conventional uranium license category.

NRC's determination will rely primarily upon the State's reviews and acceptance of the documentation provided by the licensee. In addition, results of the State site closure inspection activities, potentially including limited confirmatory radiological surveys, provide supplemental information to the NRC's determination. NRC's periodic IMPEP reviews of the Agreement State's regulatory program provide confidence that the State's reviews and licensing actions associated with termination have been conducted appropriately, from a health and safety (adequacy) and compatibility perspective.

Given a determination that all applicable standards and requirements have been met, the NRC should notify the State of its determination by formal correspondence. Upon notification from the NRC, the Agreement State should be ready

to terminate the specific license or amend the license to remove the remediated portion from it, if the license is being partially terminated.

Note: Additional steps may be required on a case-by-case basis for the termination of a non-in-situ uranium extraction license under the non-conventional uranium mill license category.