

FINAL  
COMPLETION REVIEW REPORT

FOR THE  
REMEDIAL ACTION  
AT THE  
SALT LAKE CITY, UTAH  
CLIVE DISPOSAL SITE  
URANIUM MILL TAILINGS  
REMEDIAL ACTION PROJECT SITE

August 1997

DIVISION OF WASTE MANAGEMENT  
U.S. NUCLEAR REGULATORY COMMISSION

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# SALT LAKE CITY, UTAH, CLIVE DISPOSAL SITE FINAL COMPLETION REVIEW REPORT

## INTRODUCTION

The Salt Lake City site is one of the 24 abandoned uranium mill tailings sites to be remediated by the U.S. Department of Energy (DOE) under the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA). UMTRCA requires, pursuant to Section 104(f)(1), that the U.S. Nuclear Regulatory Commission concur with the DOE's determination that the remedial action has been properly completed. This final Completion Review Report (CRR) documents the NRC staff's basis for its concurrence decision with respect to DOE's Certification Summary for the successful completion of construction of the Salt Lake City disposal site, located in Clive, Utah.

## 1.0 BACKGROUND

### 1.1 UMTRCA

Title I of UMTRCA provides for remedial action at abandoned uranium mill tailings sites and associated vicinity properties. The purpose of this legislation is to protect the public health and safety and the environment from radiological and non-radiological hazards associated with the process related materials at these sites.

UMTRCA directs DOE to select and perform remedial actions at 24 abandoned uranium mill tailings sites to ensure compliance with the general environmental standards promulgated by the Environmental Protection Agency (EPA) under Section 275(a) of the Atomic Energy Act of 1954, as amended by UMTRCA. UMTRCA also requires DOE to obtain NRC's concurrence with DOE's selection and performance of the remedial actions. Following completion of the remedial actions, UMTRCA authorizes NRC to license the long-term custody, maintenance, and monitoring of the disposal sites to ensure continued protection of the public health and safety and the environment. Appendix B includes a more detailed discussion of this legislation.

### 1.2 CONCURRENCE PROCESS FOR THE SELECTION OF DOE'S REMEDIAL ACTIONS

To document its selection of the remedial action to be implemented at a particular site, DOE develops and issues a Remedial Action Plan (RAP) under its Uranium Mill Tailings Remedial Action (UMTRA) Project. The RAP describes the series of activities and presents the design proposed by DOE to provide for the long term protection of the public and the environment. Usually this involves cleanup of the processing site, adjacent windblown areas, and vicinity properties in addition to stabilization of the residual radioactive materials. In addition, DOE issues a Remedial Action Inspection Plan (RAIP), which establishes the quality control program of testing and inspection that will be employed for the remedial action. In accordance with UMTRCA Section 108(a)(1), the NRC staff reviews and concurs with the RAP and the RAIP, and any subsequent modifications. By its concurrence in the remedial action selection, the NRC staff concludes that the planned remedial actions will comply with EPA's applicable standards in 40 CFR 192, Subparts A, B, and C. The basis for the concurrence in DOE's selection of remedial action is documented in a Technical Evaluation Report (TER).



### 1.3 CONCURRENCE PROCESS FOR THE PERFORMANCE OF DOE'S REMEDIAL ACTIONS

The remedial action work is performed by DOE contractors under Federal procurement regulations. During construction, DOE inspects and documents activities in accordance with the UMTRA Project Quality Assurance Plan, the RAIP, and the RAP. In addition, the NRC staff conducts independent inspections during construction, as determined necessary.

Upon completion of the remedial action, DOE compiles construction records and prepares a Completion Report (CR) to document that remedial actions were performed in accordance with the RAP or RAP modifications, and the RAIP. Based on this information, DOE certifies that all provisions of the RAP have been satisfied and, therefore, that the remedial actions comply with the applicable EPA standards in 40 CFR 192.

Based on its review of DOE's documentation, and on its site visits and observations, NRC makes a concurrence decision with regard to DOE's remedial action completion determination for each site, and then documents the basis for this concurrence decision in the CRR. By its concurrence in the remedial action performance, the NRC staff concludes that the remedial action has been completed in accordance with the NRC approved design. NRC's concurrence with DOE's completion determination fulfills the Commission's responsibility under UMTRCA Section 104(f)(1).

### 1.4 SALT LAKE CITY SITE

The Salt Lake City uranium mill tailings site, also known as the Vitro site, is located about four miles southwest of the Salt Lake City downtown area. The Vitro plant processed uranium ores from 1951 to 1964. In 1965, the mill was converted to the production of vanadium. Vanadium production ceased in 1968 and the plant was dismantled in 1970. About 2.8 million cubic yards of tailings were produced at the Vitro facility. Prior to remediation, the tailings pile was largely uncovered. The site is now owned by Central Valley Water Reclamation Facility Board.

### 1.5 CLIVE DISPOSAL SITE

The objective was to consolidate and stabilize the Vitro tailings in a naturally contoured embankment that would meet the EPA standards. Tailings and debris from the Salt Lake City site were transported by rail for disposal at the Clive site, which is located about 65 miles west of Salt Lake City, in Tooele County, Utah (Figure 1.1).

The remedial action performed by DOE consisted of the following major activities.

1. The Clive site was prepared for receipt and disposal of materials by stripping vegetation and constructing a wastewater retention basin and storm runoff diversion ditches. A railroad spur and facilities to handle the material were constructed. The below grade section of the disposal cell was excavated.
2. Approximately 2,798,000 cubic yards of tailings and contaminated materials were transported by rail to the Clive site and placed in the disposal cell (Figure 1.2) with

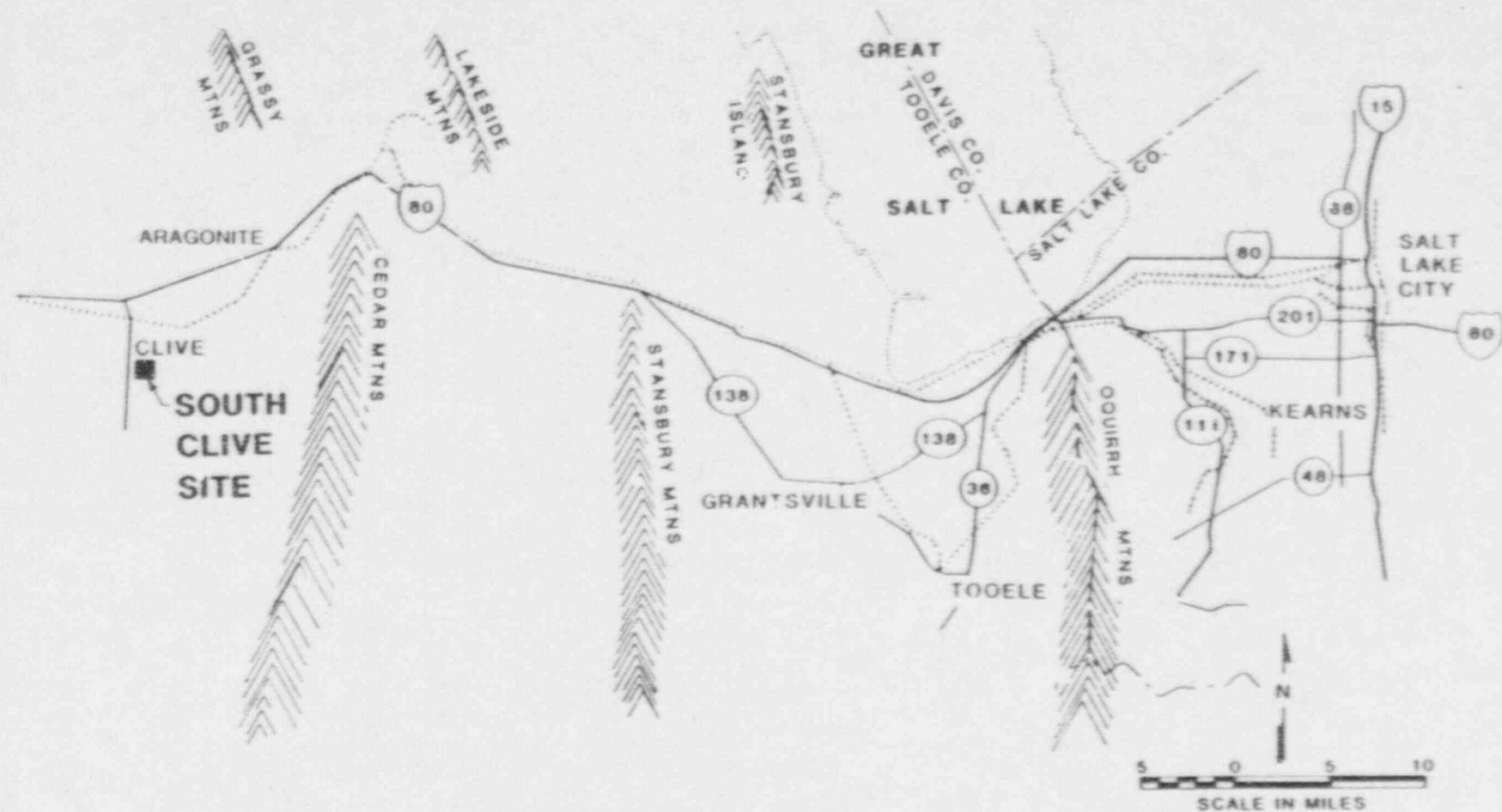


FIGURE 1.1  
SOUTH CLIVE VICINITY MAP

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FIGURE 1.2  
Cell As-Built Topographic Contours

demolition and organic debris distributed in the lower lifts. The disposal cell covers 66 acres, measuring approximately 2560 feet by 1150 feet. The top of the cell is 25 to 31 feet above the existing grade. The disposal cell was built with 20 percent grades on side slopes and a top slope of 2 percent from the center ridge toward the side slopes.

3. The relocated contaminated materials were compacted to 90 percent dry density and covered with a 7 foot radon barrier to attenuate radon emissions. The contoured embankment is topped with a 2 foot layer of rock riprap for erosion protection. The embankment is surrounded by two ditches and an inspection road. The ditches are connected to a natural waterway by a swale.

The NRC was not involved with the actual remedial action activities which were performed by the DOE contractors. However, DOE obtained NRC concurrence with the site construction design and a few significant modifications known as Project Interface Documents (PIDs). NRC also performed on-site construction reviews to monitor the progress of the construction activity (see Appendix A).

## 1.6 FINAL COMPLETION REVIEW REPORT ORGANIZATION

The purpose of this CRR is to document the NRC staff review of DOE's Salt Lake City, Clive Disposal Site CR (DOE, 1997). Section 2 of this report presents the analysis of remedial action construction. This section is organized by technical discipline and addresses engineering and radiation protection aspects of the remedial action. Appendix A provides a listing of NRC staff visits to the Salt Lake City, Clive disposal site. Appendix B provides a detailed description of the requirements of UMTRCA and the resulting phased process of the UMTRA project.

## **2.0 ANALYSIS OF DOE REMEDIAL ACTION PERFORMANCE**

### 2.1 PREVIOUS ACTIONS

NRC staff, based on its review of the RAP (DOE, 1984), and the RAIP (DOE, 1985) concurred that the remedial action, as designed, would meet the applicable EPA standards. This concurrence was based on technical findings that there is reasonable assurance that the selection of the remedial action would meet the standards for long-term stability, radon attenuation, water resources protection, and cleanup of contaminated land and buildings.

Staff reviews included assessments in the areas of erosion protection, water quality, geology, geotechnical stability, and radon attenuation. The NRC concurred on the final RAP and the RAIP on November 7, 1985. The basis for the NRC staff's concurrence in DOE's selection of remedial action at the Salt Lake City site is documented in a Technical Evaluation Memoranda (TEM) issued in March 1985 (NRC, 1985).

### 2.2 REVIEW OF REMEDIAL ACTION PERFORMANCE

NRC staff's primary objective in reviewing DOE's certification of remedial action completion is to determine whether the remedial actions have been performed in a manner consistent with specifications provided in the RAP, RAP modifications, and the RAIP, and if not, that deviations



to these specifications still result in compliance with the EPA standards. In support of this action, the NRC staff participated in site reviews (See Appendix A), field observations, assessments of on-site data and records, and review of DOE Site Audit Reports. During remedial action construction activities, there were conditions encountered which required modifications of the original remedial action plan. These conditions and the associated design changes were submitted by DOE and were concurred in by the NRC staff. These are listed in Volume I of the CR and are reflected in the as-built conditions presented in the CR.

The following sections present the results of the review of remedial action performance by individual technical discipline. Note that for the Salt Lake City remedial action completion review, the pertinent technical disciplines are: 1) geotechnical engineering, 2) surface water hydrology and erosion protection, 3) radiation protection, and 4) groundwater resources protection.

### 2.2.1 Geotechnical Engineering

The NRC staff reviewed the CR to determine whether the geotechnical engineering aspects of the remedial action had been completed in accordance with: 1) the applicable technical specifications in the RAP, 2) the RAIP, and 3) applicable Class I PIDs. NRC did not review all of the testing and inspection records due to the voluminous amount of documentation. However, the staff did review representative records during on-site visits during construction. In addition, the staff's review was based on statements made by DOE in the CR that all requirements had been complied with, descriptions of construction operations, as-built drawings, summaries of laboratory and field testing data, and DOE Quality Assurance Audits.

Based on its review of the geotechnical engineering aspects of the remedial action completion documentation, the NRC staff noted the following:

1. DOE concluded that appropriate tests (gradation and classification) and inspections were performed to assure that the proper type of material was placed for each feature of construction. The loose thickness of the lifts was continuously monitored to ensure compliance with the specifications for that material. Placement and compaction operations were routinely inspected and tested to assure that the moisture and density requirements were met and that the soil moisture was uniform throughout the compacted lifts.
2. DOE concluded that laboratory and field testing was adequately documented indicating that they were conducted in accordance with acceptable test procedures by trained and qualified personnel.
3. The CR shows that frequencies of materials testing and inspection comply with the frequencies specified in the RAIP.
4. Although there was some question regarding the distribution and quality of the density tests for the radon barrier, DOE was able to satisfy questions regarding the potential for excessive differential settlement. For this reason, NRC was able to concur that adequate compaction had been achieved.
5. As-built drawings adequately document that the completed remedial action was consistent

with the design concurred in by the NRC.

6. DOE concluded that final slope, elevation, and placement of the disposal cell cover were adequately inspected to ensure that the final conditions were consistent with those stated in the RAP and final design.

Following initial construction of the project, the staff performed several inspections. These inspections indicated that numerous radon barrier in-place density tests failed to meet compaction criteria on the basis of moisture content. Further, density test locations were not recorded. The staff also was unable to confirm that the design thickness of the radon barrier had been fully documented. These deficiencies were in apparent contrast to the DOE documentation. For this reason NRC required DOE to provide further verification that the as-built radon barrier conformed to the design specifications.

On revisiting the deficiencies noted above, DOE determined that the failure to fully document density test results and locations would not be expected to result in excessive settlement of the embankment, since most of the expected settlement had already occurred. Also, DOE was able to prove indirectly, through a series of test borings in 1988 and final material payment records, that a sufficiently thick radon barrier had been placed. The test borings were performed by other parties; however, they confirmed the as-built thickness of the radon barrier at discrete locations. The material payment records provided additional indirect confirmation of radon barrier material quantities which supported the DOE statements that the barrier was constructed to meet the design thickness requirements. Based on the additional justification provided by DOE, it was not necessary to perform further post-placement testing to address geotechnical engineering concerns.

Based on the above conclusions, and on the results of on-site inspections performed by the NRC staff during construction, and follow-up information provided by DOE, the NRC staff concludes that the geotechnical engineering aspects of the construction were performed in accordance with the design and specifications identified in the RAP and the RAIP.

#### 2.2.2 Surface Water Hydrology and Erosion Protection

NRC staff reviewed the surface water hydrology and erosion protection aspects of remedial actions at the Clive site to ensure that they were constructed in accordance with the applicable construction specifications as stipulated in the RAP, RAP modifications, RAIP, and the final design. Areas of review included construction operations, laboratory and field testing, and quality assurance audits. In addition, the review was also based on NRC observations of the remedial actions and review of records and testing during NRC onsite inspections.

The remedial action design included erosion protection in several specific areas, including: 1) riprapped top and side slopes and 2) diversion channels. The top and side slopes and diversion channels of the cell were designed to prevent long-term erosion and gulying of the cell cover.

The NRC staff reviewed each of these features and determined that testing, placement, and configuration complied with specifications in the RAP, RAP modifications, and the RAIP. The review was partially based on NRC staff observations and review of onsite records during the

remedial actions, as well as assessment of the verification results presented in the DOE CR. In addition, the NRC staff reviewed records of the placement of riprap on the top and side slopes of the cell.

During the review, the NRC staff noted the following:

1. Tests (gradation and durability) and inspections were performed by DOE or its agents to ensure that erosion protection materials were properly selected. The review of the documentation indicated that placement of materials was routinely inspected by DOE or its agents to ensure that the rock size and gradation specifications were met. Likewise, the thickness of the rock layers were verified periodically by DOE or its agents to ensure compliance with the specifications for the particular type of material.
2. Laboratory and field testing was conducted by DOE or its agents in accordance with specified test procedures.
3. Testing and inspection frequencies for materials used at the site for erosion protection were documented by DOE as complying with the frequencies specified in the RAIP.

Following initial construction of the project, the staff performed several inspections. These inspections indicated that the riprap had not been placed to an acceptable gradation, size, or thickness in several areas of the cell. In accordance with staff recommendations, in 1995 DOE performed a field verification study to determine those areas of the cell where the riprap specifications had not been met.

DOE's investigations indicated that there were many areas where the rock had not been properly placed. In several of these areas DOE determined that, even though the specifications had not been met, a sufficient quantity of rock had been placed to resist erosive forces associated with the design flood and precipitation events. DOE developed a plan to repair those areas that were obviously deficient and to perform calculations to determine those areas that were acceptable, but did not meet construction specifications.

DOE submitted an engineering assessment documenting those areas which would or would not require additional work. This report is provided in Appendix K of the Final CR. The staff reviewed this submittal and indicated to DOE that the approach was acceptable subject to a final inspection following completion of the work. DOE completed the remedial work in 1997; site visits in 1997 indicated that the work was acceptable. Staff review of the CR and documentation of as-built conditions indicates that appropriate measures have been taken to assure that the cell either (1) meets construction specifications or (2) meets design requirements associated with flooding and erosion.

Based on NRC staff observations, review of onsite records during remedial actions, staff review of DOE repairs to the cell, and assessment of the verification results presented in the CR, the NRC staff concludes that the erosion protection is acceptable. The staff concludes that the riprap was acceptably tested and placed and that the remedial action has been adequately completed at the Clive site, with respect to erosion protection.



### 2.2.3 Radiation Cleanup and Control

Radiological cleanup aspects of remedial actions at the Salt Lake City, Utah, Vitro processing site are discussed in the Vitro Processing Site CR. The review of the Clive Disposal Site CR consisted of evaluation of the radon control aspects of the disposal cell cover.

The final radon flux calculation, "Radon Barrier Thickness Review for Clive Site" (CR, Appendix B, Volume 2B, RAE/UTA-1086-0003, 1997) was also provided to NRC staff on October 15, 1986, to support a modification (lower placement moisture of tailings and radon barrier) to the cover specifications. The calculation is partially based on data obtained during construction of the disposal cell cover and demonstrates that the 7-foot radon barrier would provide adequate radon attenuation. CR Appendix K contains Calculation 93-402-03-00, "Radon Barrier Thickness". This new calculation also confirms that the cover adequately attenuates radon flux by comparing data on the radon barrier and tailings obtained in 1988 and 1995 with the RAP radon flux model parameter values. There is good agreement between the new data and the design parameter values. In fact, one DOE radon flux calculation demonstrates that utilizing the barrier placement density and porosity values with the 1986 average measured diffusion coefficient, a radon barrier thickness of 2 feet would limit the radon flux to the 20 pCi/m<sup>2</sup>s long-term flux standard. Therefore, NRC staff concludes that the design radon barrier thickness of 7 feet provides adequate assurance that the long-term radon flux limit will be met.

According to Section III of CR Volume I, the only radiological verification measurements conducted at the South Clive Disposal Site were radon flux measurements. Although the site was grandfathered in the National Emission Standards for Hazardous Air Pollutants regulations governing radon emissions, 60 measurements (instead of 100) were conducted. The maximum flux measurement on the surface of the radon barrier was 1.1 and the average was 0.3 pCi/m<sup>2</sup>s (see CR, Appendix J), well within the regulatory limit of 20 pCi/m<sup>2</sup>s.

Based on the above information, the NRC staff concludes that the commitments and requirements stated in the RAP for radon attenuation at the Clive Disposal Site were fulfilled and the data in the CR provides assurance that the disposal cell cover meets the radon control standards.

### 2.2.4 Groundwater Protection

The RAP concluded, and NRC concurred that due to the poor quality of the groundwater at the site, groundwater would be adequately protected by the low permeability of the cover. Furthermore, monitoring of groundwater was not required during construction. Groundwater monitoring requirements, if necessary, will be established at the time of licensing of the site.

## 3.0 SUMMARY

NRC staff reviewed geotechnical engineering, surface water hydrology and erosion protection, and radiation protection aspects of the remedial action performed at the Clive disposal site for the Salt Lake City uranium mill tailings. The purpose of this review was to determine whether DOE had performed remedial actions at the site in accordance with specifications in the RAP, RAP modifications, and other supporting project documents, and thus with the EPA standards in 40 CFR Part 192, Subparts A-C. Based on its review of the final CR and on observations



made during periodic on-site construction visits, the NRC staff concludes that DOE performed remedial action at the Clive disposal site in accordance with the EPA standards. Therefore, NRC concurs with DOE's certification of completion of the Salt Lake City remedial action at the Clive disposal site.

#### 4.0 REFERENCES

- U.S. Department of Energy (DOE), Washington, D.C., *Remedial Action Plan and site Conceptual Design for Stabilization of the Inactive Uranium Mill Tailings Site at Salt Lake City, Utah*, UMTRA-DOE/AL-0141.0000, 1984.
- U.S. Department of Energy (DOE), Washington, D.C. *Final Completion Report, Salt Lake City, Utah*, Volumes 1-4, May 1997.
- U.S. Nuclear Regulatory Commission, Washington, D.C., *Final Technical Evaluation Memoranda for the Remedial Action of the South Salt Lake City, Utah (Vitro) Uranium Mill Tailings Site*, March 1985.
- U.S. Department of Energy (DOE), Washington, D.C. *Remedial Action Inspection Plan* 1985

## APPENDIX A

### NRC CONSTRUCTION SITE VISITS TO THE SALT LAKE CITY UMTRA PROJECT CLIVE DISPOSAL SITE

DATE	STAFF, DISCIPLINE	PURPOSE
April 18, 1985	D. Gillen, Geotechnical Engineering	On-Site Construction Review
July 25, 1985	D. Gillen, Geotechnical Engineering	On-Site Construction Review
May 5-6, 1986	D. Gillen, Geotechnical Engineering T. Olsen, Groundwater Hydrology E. Hawkins, Management	On-Site Construction Review
June 9, 1988	D. Gillen, Geotechnical Engineering T. Olsen, Groundwater Hydrology E. Hawkins, Management M. Fliegel, Management T. Johnson, Erosion Protection B. Jagganath, Geotechnical Engineering	On-Site Construction Review
September 19, 1991	T. Johnson, Erosion Protection E. Brummet, Radon Attenuation D. Rom, Geotechnical Engineering	On-Site Construction Review
January 29, 1997	T. Johnson, Erosion Protection	On-Site Construction Review

## APPENDIX B

### UMTRCA, THE EPA STANDARDS, AND THE PHASED UMTRA PROJECT

Title I of the Uranium Mill Tailings Radiation Control Act (UMTRCA) defines the statutory authority and roles of the DOE, the NRC, and the EPA with regard to the remedial action program for inactive uranium mill tailings sites.

#### The Standards

UMTRCA charged the EPA with the responsibility for promulgating remedial action standards for inactive uranium mill sites. The purpose of these standards is to protect the public health and safety and the environment from radiological and non-radiological hazards associated with radioactive materials at the sites. UMTRCA required that EPA promulgate these standards by no later than October 1, 1982. After October 1, 1982, if the EPA had not promulgated standards in final form, DOE was to comply with the standards proposed by EPA under Title I of UMTRCA until such time as the EPA had promulgated its standards in final form.

The final EPA standards were promulgated with an effective date of March 7, 1983 (48 FR 602; January 5, 1983); see 40 CFR Part 192 - Standards for Remedial Actions at Inactive Uranium Processing Sites, Subparts A, B, and C. These regulations may be summarized as follows:

1. The disposal site shall be designed to control the tailings and other residual radioactive materials for up to 1000 years, to the extent reasonably achievable, and, in any case, for at least 200 years [40 CFR 192.02(a)].
2. The disposal site design shall provide reasonable assurance that radon-222 from residual radioactive material to the atmosphere will not exceed an average release rate of 20 picocuries per square meter per second, or will not increase the annual average concentration of radon-222 in air, at or above any location outside the disposal site, by more than one-half picocurie per liter [40 CFR 192.02(b)].
3. The remedial action shall be conducted so as to provide reasonable assurance that, as a result of residual radioactive materials from any designated processing site, the concentrations of radium-226 in land averaged over any area of 100 square meters shall not exceed the background level by more than 5 picocuries/gram averaged over the first 15 centimeters of soil below the surface and 15 picocuries/gram averaged over 15 centimeter thick layers of soil more than 15 centimeters below the surface [40 CFR 192.12(a)].
4. The objective of remedial action involving buildings shall be, and reasonable effort shall be made to achieve, an annual average (or equivalent) radon decay product concentration (including background) not to exceed 0.02 WL, and the level of gamma radiation shall not exceed the background level by more than 20 micro roentgens per hour [40 CFR 192.12(b)].
5. The portion of the EPA standards dealing with groundwater requirements, 40 CFR 192.20(a)(2)-(3) were remanded by the Tenth Circuit Court of Appeals on September 3, 1985. Based on this court decision, EPA was directed to promulgate new

groundwater standards. EPA proposed these standards in the form of revisions to Subparts A-C of 40 CFR Part 192 in September 1987, and the final groundwater standards were promulgated January 11, 1995.

Before the groundwater standards were final, as mandated by Section 108(a)(3) of UMTRCA, the remedial action at the inactive uranium processing sites were to comply with EPA's proposed standards until such time as the final standards are promulgated. DOE performed remedial action at the inactive processing sites in accordance with NRC's concurrence with the remedial action approach based on the proposed EPA groundwater standards (52 FR 36000; September 24, 1987). Delaying implementation of the remedial action program would be inconsistent with Congress' intent of timely completion of the program. Modifications of disposal sites after completion of the remedial action to comply with EPA's final groundwater protection standards may be unnecessarily complicated and expensive and may not yield commensurate benefits in terms of human and environmental protection. Therefore, the Commission believes that sites where remedial action has been essentially completed prior to EPA's promulgation of final groundwater standards, will not be impacted by the final groundwater standards. Although additional effort may be appropriate to assess and clean up contaminated groundwater at these sites, the existing designs of the disposal sites should be considered sufficient to provide long-term protection against future groundwater contamination. NRC does not view UMTRCA as requiring the reopening of those sites that have been substantially completed when NRC concurred with the selection of remedial action in accordance with applicable EPA standards, proposed or otherwise in place at the time such NRC concurrence was given.

#### DOE Selection (Design) Phase

For each site, UMTRCA requires that DOE select a plan of remedial action that will satisfy the EPA standards and other applicable laws and regulations, and with which the NRC will concur. For each site, this phase includes preparation by DOE of an Environmental Assessment or an Environmental Impact Statement, and a Remedial Action Plan (RAP). The RAP is structured to provide a comprehensive understanding of the remedial actions proposed at that site and contains specific design and construction requirements. To complete the first phase, NRC and the appropriate State or Indian tribe will review the RAP and then concur that the RAP will meet the EPA standards.

#### The Performance (Construction) Phase

In this phase the actual remedial action (which includes decontamination, decommissioning, and reclamation) at the site is done in accordance with the RAP. The NRC and the State/Indian tribe, as applicable, must concur in any changes to the concurred-in plan that arise during construction. At the completion of remedial action activities at the site, NRC concurs in DOE's determination that the activities at the site have been completed in accordance with the approved plan. Prior to licensing (the next phase), title to the disposed tailings and contaminated materials must be transferred to the United States and the land upon which they are disposed of must be in Federal custody to provide for long-term Federal control. Disposal sites on Indian land will remain in the beneficial ownership of the Indian tribe.

NRC concurrence in the DOE determination that remedial action at a processing site has been



accomplished in accordance with the approved plan may be accomplished in two steps where residual radioactive material is not being moved from the processing site to a different disposal site. The Uranium Mill Tailings Remedial Action Amendments Act of 1988 allows for a two-step approach for Title I disposal sites. The Amendments Act will allow DOE to do all remedial actions, other than groundwater restoration, for the first step of closure and licensing. The second step, which can go on for many years, will deal with existing groundwater restoration. When groundwater restoration is completed, the Long-Term Surveillance Plan required under the licensing phase will be appropriately amended. For sites that are being moved, licensing will occur in one step. There is no groundwater restoration at the disposal site and the processing site will not be licensed after completion of remedial action.

#### The Licensing Phase

Title I of UMTRCA further requires that, upon completion of the remedial action program by DOE, the permanent disposal sites be cared for by the DOE or other Federal agency designated by the President, under a license issued by the Commission. DOE will receive a general license under 10 CFR Part 40.27 following: (1) NRC concurrence in the DOE determination that the disposal site has been properly reclaimed, and (2) the formal receipt by NRC of an acceptable Long-Term Surveillance Plan (LTSP). NRC concurrence with DOE's performance of the remedial action indicates that DOE has demonstrated that the remedial action complies with the provisions of the EPA standards in 40 CFR part 192, Subparts A, B, and C. This NRC concurrence may be completed in two steps as discussed above. There is no termination date for the general license.

Public involvement has been and will continue to be provided through DOE's overall remedial action program for Title I sites. The local public will have an opportunity to comment on the remedial action or closure plans proposed and implemented by DOE and to raise concerns regarding final stabilization and the degree of protection achieved. NRC fully endorses State/Indian tribe and public input in all stages of the program. At the time the LTSP is submitted, the NRC will consider the need for a public meeting in response to requests and public concerns.

#### The Surveillance and Monitoring Phase

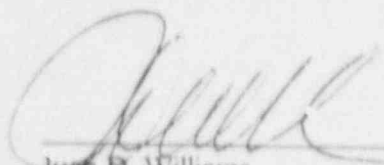
In this phase, DOE and NRC periodically inspect the disposal site to ensure its integrity. The LTSP will require the DOE to make repairs, if needed.

One of the requirements in the EPA standards is that control of the tailings should be designed to be effective for up to 1000 years without active maintenance. Although the design of the stabilized pile is such that reliance on active maintenance should be minimized or eliminated, the NRC license will require emergency repairs as necessary. In the event that significant repairs are necessary, a determination will be made on a site specific basis regarding the need for additional National Environmental Policy Act actions, and health and safety considerations based on 10 CFR Parts 19, 20, and 21.

**CERTIFICATION SUMMARY**  
**URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT**  
**SALT LAKE CITY, UTAH**

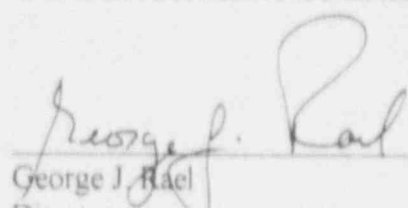
The U. S. Department of Energy certifies that the remedial action performed for the Salt Lake City, Utah, Uranium Mill Tailings Remedial Action Project is complete and meets all design criteria and technical specifications outlined in the surface Remedial Action Plan, as required under Public Law 95-604. The undersigned request that the U. S. Nuclear Regulatory Commission concur in this certification.

U. S. DEPARTMENT OF ENERGY

  
\_\_\_\_\_  
Juan B. Williams  
Contracting Officer  
Contracts and Procurement Division

7/17/97  
\_\_\_\_\_  
Date

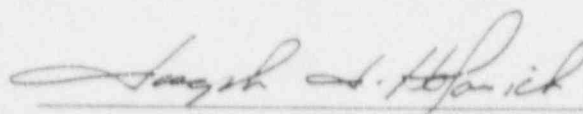
U. S. DEPARTMENT OF ENERGY

  
\_\_\_\_\_  
George J. Rael  
Director  
Environmental Restoration Division

July 17, 1997  
\_\_\_\_\_  
Date

The U. S. Nuclear Regulatory Commission hereby concurs with the U. S. Department of Energy's completion of surface remedial action for the Salt Lake City, Utah, Uranium Mill Tailings Remedial Action Project.

U. S. NUCLEAR REGULATORY COMMISSION

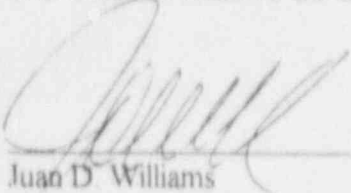
  
\_\_\_\_\_  
Joseph J. Holonich, Chief  
Uranium Recovery Branch  
Division of Waste Management  
Office of Nuclear Materials Safety and Safeguards

August 15, 1997  
\_\_\_\_\_  
Date

CERTIFICATION SUMMARY  
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT  
SALT LAKE CITY, UTAH

The U S Department of Energy certifies that the remedial action performed for the Salt Lake City, Utah, Uranium Mill Tailings Remedial Action Project is complete and meets all design criteria and technical specifications outlined in the surface Remedial Action Plan, as required under Public Law 95-604. The undersigned request that the U.S. Nuclear Regulatory Commission concur in this certification.

U S. DEPARTMENT OF ENERGY

  
Juan D. Williams  
Contracting Officer  
Contracts and Procurement Division

Date

7/17/97

U S. DEPARTMENT OF ENERGY

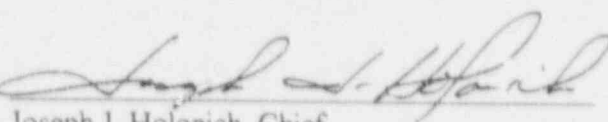
  
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U.S. NUCLEAR REGULATORY COMMISSION

  
Joseph J. Holonich, Chief  
Uranium Recovery Branch  
Division of Waste Management  
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Date

August 15, 1997