URANIUM MILL TAILINGS REMEDIAL ACTION (UMTRA) SURFACE PROJECT

Project Plan

August 1993

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LIST OF ACRONYMS

<u>Acronym</u>	<u>Definition</u>
ADS	activity data sheet
AL	Albuquerque Operations Office
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DOI	U.S. Department of the Interior
EM	Office of Assistant Secretary for Environmental Restoration and Waste Management
EPA	U.S. Environmental Protection Agency
ESAAB	Energy Systems Acquisition Advisory Board
FONSI	finding of no significant impact
FR	Federal Register
FY	fiscal year
GJPO	Grand Junction Projects Office
LTSM	long-term surveillance and maintenance
LTSP	long-term surveillance plan
MSA	major system acquisition
NEPA	National Environmental Policy Act
NRC	U.S. Nuclear Regulatory Commission
OSHA	Occupational Safety and Health Administration
PCS	Project Control System
PL	Public Law
RAC	Remedial Action Contractor
RAP	remedial action plan
ROCS	Regulatory Oversight Compliance Support
ROD	record of decision
R&TD	research and technology development
TAC	Technical Assistance Contractor
TEC	total estimated cost
TPC	total project cost
SAFE	Safety Advancement Field Effort
UMTRA	Uranium Mill Tailings Remedial Action
UMTRCA	Uranium Mill Tailings Radiation Control Act
USC	United States Code
VP	vicinity property
WBS	work breakdown structure

1.0 MISSION AND OBJECTIVES

1.1 MISSION

The Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA) [Public Law (PL) 95-604, 42 United States Code (USC) 7901], hereinafter referred to as the "Act," authorizes the U.S. Department of Energy (DOE) to stabilize and control surface tailings and ground water contamination. To fulfill this mission, the DOE has established two projects under the Uranium Mill Tailings Remedial Action (UMTRA) Project Office. The Ground Water Project was established in April 1991 as a major project and a separate project plan will be prepared for that portion of the mission. This project plan covers the UMTRA Surface Project, a major system acquisition (MSA).

Title I of the Act authorized the DOE to undertake remedial actions at designated inactive uranium processing sites (Attachment 1) and associated vicinity properties (VP) containing uranium mill tailings and other residual radioactive materials derived from the processing site. The purpose of the remedial action is to stabilize and control the uranium mill tailings and other residual radioactive materials in a safe and environmentally sound manner to minimize or eliminate radiation health hazards to the public. The principal health hazards and environmental concerns are 1) the inhalation of air particulates contaminated as a result of the emanation of radon from the tailings and the subsequent decay of radon daughters, and 2) the contamination of surface and ground water with radionuclides or other chemically toxic materials.

Remedial actions undertaken by the DOE pursuant to the Act are to be accomplished in cooperation with the affected states and Indian tribes and with the concurrence of the U.S. Nuclear Regulatory Commission (NRC). Remedial actions are to be performed in accordance with standards promulgated by the U.S. Environmental Protection Agency (EPA) [40 Code of Federal Regulations (CFR) Part 192] and the general license issued by NRC (10 CFR 40) and with applicable Federal and state laws. Before the individual site remedial actions are initiated, the DOE must complete environmental analyses, documentation, and public review required by the National Environmental Policy Act (NEPA) of 1969 (10 CFR 1021).

The Act authorizes the DOE to establish cooperative agreements with the affected states and Indian tribes. The DOE is responsible for 100 percent of the assessment costs and 90 percent of the remediation costs. The remaining 10 percent of the remediation costs are paid by the affected states, unless the site is on Indian lands. The DOE pays 100 percent of all costs at sites on Indian lands.

In accordance with the provisions of the Act, the authority of the DOE to perform the remedial actions was to terminate on March 7, 1990, 7 years after promulgation of the initial EPA standards. Due to schedule delays, increases in

quantity of contamination, and critical annual budget constraints, the DOE submitted a legislative initiative to extend the authorization of the Project to September 30, 1994. This extension was approved by Congressional legislation in November 1988 (PL 100-616). The Energy Policy Act (PL 102-486) extended the Project completion through September 30, 1996. The Project Office plans to initiate a request for extension of the Project to September 30, 1998, in accordance with the Energy Systems Acquisition Advisory Board (ESAAB) approved baseline of September 30, 1992.

The DOE Grand Junction Projects Office (GJPO) will perform long-term surveillance and maintenance (LTSM) at disposal sites used for the final disposition of residual radioactive materials, pursuant to a license to be issued by the NRC. As stated in the Act, title to such disposal sites will vest with the DOE.

1.2 PROJECT OBJECTIVES

The overall objectives of the Project are to:

- Reduce or eliminate risks to the public health and the environment from radioactive, hazardous, and toxic constituents in uranium mill tailings and tailings-contaminated materials.
- Obtain the cooperation of the affected states, Indian tribes, and property owners in accomplishing the mission of the Project.
- Carry out a public participation program that encourages public input into the Project's decision-making process.
- Transfer developed uranium mill tailings stabilization and disposal technology to the private sector for use at active uranium processing sites.
- Ensure that environmental factors are adequately addressed in the selection and implementation of remedial actions and that provisions of the NEPA, as implemented by the Council on Environmental Quality (40 CFR 1500-1508) regulations and DOE guidelines, are satisfied.
- Carry out remediation activities in a safe and environmentally sound manner in accordance with EPA standards and applicable Federal and state laws.
- Eventually return all former processing sites to a condition suitable for unrestricted use, except for that portion necessary to contain the tailings disposal cell.
- Comply with the NRC general license for long-term, postremedial action surveillance and monitoring for each tailings disposal site, and perform interim site upkeep until such time as responsibility is turned over to the DOE GJPO for inclusion in the DOE LTSM Program.

1.3 PROJECT BASELINE

In addition to the Project objectives discussed above, accomplishment of the Project surface mission is governed by a set of performance, schedule, and cost objectives that form the Project baseline. These baseline criteria are identified below and are further discussed in Section 8.0.

1.3.1 Performance objectives

EPA standards

The primary performance objectives for remedial actions are the promulgated and proposed EPA standards, which provide the basis for remedial action planning, scheduling, and cost estimating. A summary of the EPA standards pertinent to the performance of the UMTRA Surface Project is shown in Attachment 2.

The EPA has proposed ground water standards for the cleanup and disposal of contamination related to uranium mill tailings [40 CFR 192, *Federal Register* (FR) Vol. 52, No. 185, September 24, 1987]. The proposed ground water standards require DOE to meet numerical ground water quality standards for ground water compliance at disposal sites. The standards requiring DOE to either 1) document, for each affected site, that the ground water quality meets the stated standards without remediation; or 2) remediate the contaminated ground water until it meets the applicable standards will be addressed in the UMTRA Ground Water Project plan.

Additional guidelines

The EPA standards provide the primary performance objectives for the Project; however, following are additional guidelines that also serve as operational standards in the performance of Project activities.

- *UMTRA Project Environmental, Health, and Safety Plan* (DOE, 1992a), supplemented with site-specific health and safety plans prior to performance of remedial actions.
- *UMTRA Project Quality Assurance Plan* (DOE, 1992b).
- *UMTRA Project Technical Approach Document* (DOE, 1989).
- *UMTRA Project Operating Envelope* (under development).
- *Guidance for Implementing the UMTRA Project Long-Term Surveillance Plans* (DOE, 1992c).
- NRC requirements (10 CFR 40).

1.3.2 Schedule objectives

The Project schedule objectives, as approved by the ESAAB in September 1992, are to complete all site and VP remediation by the end of fiscal year (FY) 1996 and to complete all other Project activities relating to NRC licensing and transfer to the LTSM Program by the end of FY 1998. The current status of site and VP remediation is shown in Attachment 3. As indicated, as of the end of March 1993, 62 percent of the contaminated material to be handled and 94 percent of the VPs to be remediated were complete. The Project has passed Key Decision No. 3 and is in the construction phase of the MSA process. Project phasing and key decisions are further discussed in Section 2.2.2 of this document.

Meeting the schedule objectives is contingent upon several factors, the most important of which are:

- Timely authorization/appropriation of funds by Congress and the states in accordance with the Project Baseline Resources Plan (Attachment 4).
- Timely completion and approval of the NEPA documentation requirements.
- Timely document concurrences on the part of the states, Indian tribes, and the NRC.
- No significant change in quantities or complexities of material to be remediated.

1.3.3 Cost objective

The Project cost objective is to accomplish the remediation within the ESAAB approved total project cost (TPC). Attachment 5 presents a summary of the TPC by site and FY through Project completion. The TPC is based on several key assumptions:

- The EPA standards.
- Twenty-four inactive uranium processing sites and approximately 5000 included VPs.
- Stabilization of the last six sites (Belfield, Bowman, Naturita, Maybell, and the two Slick Rock sites) in accordance with current planning.
- Timely inclusion of the remaining VPs.
- Project funding (both Federal and state) in accordance with the Baseline Resources Plan (Attachment 4).
- The validity of the DOE-prescribed escalation indexes.

The Act does not contain funding, but indicates that Project funds are to be appropriated annually. The Act provides that the affected states pay 10 percent of remedial action costs. For purposes of DOE/state cost sharing, remedial action costs are defined as engineering design and construction costs for processing sites and VP remedial actions, as well as land acquisition costs, except at those sites located on Indian lands. Attachment 4 shows the Federal and affected states' shares of the costs over the life of the Project.

2.0 TECHNICAL PLAN

2.1 PROJECT SCOPE

The purpose of the UMTRA Surface Project is to minimize or eliminate radiation health hazards to the public at the 24 designated inactive uranium processing sites.

Engineering assessments have been performed for all 24 sites to define site conditions and problems, identify alternative remedial actions, and determine the scope and estimated cost of remedial action alternatives. The engineering assessments considered two alternatives for disposal: 1) stabilizing the tailings at the present site, and 2) relocating the tailings to a disposal site. In the first remedial action method, the processing site and the disposal site are the same. The second method results in two sites. The final determination as to the extent and type of remedial action required for each site is based on the EPA standards and the environmental impacts of the alternative actions.

An inherent risk in the remediation phase of each site is that the engineering assessments may not have precisely identified all the contaminated material at a given site. This introduces some uncertainty about the total scope of the Project once remediation begins, since there is a risk that additional material could be found. To compensate for this risk, contingency factors are applied during the budgeting cycle in accordance with the cost estimating guidance contained in DOE Order 5700.2D.

2.2 TECHNICAL APPROACH

2.2.1 Technology status

As a result of the Research and Technology Development (R&TD) Program sponsored by the Project and other related research efforts, the technology available for remedial actions has been enhanced significantly. Major technical improvements have been achieved in the key areas of radon barrier design, evaluation and prediction of migration of contamination, and evaluation of long-term stability.

Field and laboratory testing of earthen radon barrier cover systems has shown them to be effective and capable of meeting EPA standards. Research has identified controlling parameters and provided both theoretical and empirical bases for the design of cost-effective cover systems. The EPA standards require that remedial actions be based on predicted cover effectiveness for 200 to 1000 years. The models developed under the UMTRA R&TD Program provide the basis for such predictions.

2.2.2 Project phases

The Project has been phased and baselined against key decision milestones. Each key decision provides approval to advance to the next phase in the MSA process. The phases are conceptual design, advanced development, final design, construction, and operations. Each site in the UMTRA Project follows the phases in the MSA process. The process begins with planning and design development and proceeds through NEPA analysis, remedial action plans (RAP), engineering design, remedial action, certification and licensing, and surveillance and maintenance. Attachment 6 shows how the UMTRA Project phases relate to the MSA process and to the key decision milestones. The distribution of the sites among the phases as of the publication of this document is also shown. Attachment 7 addresses each Project phase, identifying the activity, product, and decision required in each phase.

As previously indicated in Section 1.3.2, the Project is currently in the construction phase of the MSA process, since 18 sites are either undergoing remedial action or have completed remedial action. Key Decision No. 1, Approval of New Start, was confirmation of the Project mission need and approval of the original Project plan by the Acquisition Executive. Completion of the RAP for the first site, Canonsburg, Pennsylvania, provided the basis for the Acquisition Executive's Key Decision No. 2, Approval to Commence Final Design. Key Decision No. 3, Approval to Commence Construction, was based on completion of the detailed engineering design for Canonsburg, Pennsylvania. Bringing the last site under the NRC general license will be the basis for Key Decision No. 4, Approval to Commence Operation. At this point, the UMTRA Surface Project terminates and the GJPO assumes responsibility for the disposal sites under the LTSM Project.

The typical activities for both a uranium processing site and a VP are diagrammed in Attachment 8.

2.2.3 Work breakdown structure

The Office of Assistant Secretary for Environmental Restoration and Waste Management (EM)-approved Project Work Breakdown Structure (WBS) is shown in Attachment 9. The installation level represents the overall Project. The summary subproject level contains the major Project work elements. The subproject level reflects the work elements grouped by Five-Year Plan (DOE, 1993a) activity data sheets (ADS). Attachment 10 extends the WBS below the subproject level by site and by activities. This is the WBS approved in the Project plan of 1988 (DOE, 1988).

3.0 RISK ASSESSMENT AND MITIGATING MEASURES

3.1 BACKGROUND

The Project involves managing 20 major construction projects (24 processing sites) and approximately 5000 small construction activities (VPs), creating a dynamic Project environment with considerable cost, schedule, and performance vulnerabilities. Furthermore, requirements of the Act and the NEPA, the number and level of Project participants, and the technological considerations inherent to the mission compound the Project complexity.

There are 11 major risk areas affecting the Project. The following discussion describes each one and identifies actions being taken to mitigate the potential impacts. Based on the identification of these risks, the potential impacts they have on the Project, and the mitigating measures taken to date, the overall Project risk is assessed to be moderate. Attachment 11 summarizes each risk area's potential impact to the Project.

3.2 INSTITUTIONAL IMPEDIMENTS

3.2.1 Multiple participants

The Act identifies the roles and responsibilities of the DOE as well as those of the EPA, the NRC, the U.S. Department of Interior (DOI), the states and Indian tribes, and the public. These relationships and their impact on the Project are discussed below.

The EPA

The EPA is responsible for setting the standards that form the primary performance objectives for the Project.

The NRC

The NRC is the chief regulatory agency. The NRC's responsibilities are to:

- Consult in the designation of sites and establishment of site boundaries.
- Concur with cooperative agreements with the states and Indian tribes.
- Concur with land acquisition and disposal decisions.
- Concur with the remedial action option selected.
- Concur with a decision that remedial actions at a processing site are complete.

- Issue an NRC general license for the LTSM of disposal sites.
- Accept the disposal site LTSP and put the general license into effect.

The NRC's involvement in all of these decisions poses a significant risk to the Project schedule since obtaining its concurrence with each decision could be a lengthy process.

To mitigate the risk of schedule delays caused by obtaining the various concurrences required by the Act, the Project Office has implemented a policy of close coordination from the earliest phases of the planning process. In July 1985, the DOE and the NRC entered into a memorandum of understanding to provide for an orderly process for executing their respective statutory responsibilities under Title I of the Act.

States and Indian tribes

The states' and Indian tribes' responsibilities are:

- Site designations.
- Execution of the cooperative agreement, including states providing 10 percent of the remedial action costs; acquiring sites; participating in the selection, concurrence, and performance of the remedial action; and obtaining rights of entry and owner consents.

As in the case of NRC's involvement, the highest risk for potential impact as a result of the state and Indian tribe institutional interfaces is to the Project schedule. The extent to which states and Indian tribes participate in the selection and performance of the remedial action could also impact the total estimated cost (TEC) of the Project as well as the performance of remedial actions.

To mitigate the risks inherent in the DOE's interaction with the states and the Indian tribes, the Project Office has taken steps to establish a working relationship, under the cooperative agreements, with appropriate state and tribal staffs. The Project Office also continuously communicates and coordinates with the states and the Indian tribes.

In November 1983, the Project Office initiated states/tribes liaison meetings to improve communication among the Project participants. The meetings, held about once a year, bring together representatives from the DOE, the states and tribes, the NRC, the EPA, and the DOE's contractors to review overall Project status, plans, concerns, and issues.

The Project also holds quarterly meetings with the Colorado Department of Health and meetings with other states, as appropriate.

The public

The Act encourages the DOE to hold public hearings on site designation and prioritization, selection of remedial actions, and execution of cooperative agreements.

In addition, the NEPA requires public involvement in environmental assessments and environmental impact statements. The public participation is designed to provide public input into the Project Office decision-making process. The potential for adverse impact on Project costs, schedules, or performance arises in the possibility of public opposition to the Project-preferred options.

The Project has implemented a coordinated public information and participation program. This program serves as a method of communicating with members of the public to reduce the possibility that public misunderstanding could result in public opposition to Project activities. A Project *Public Participation Plan* (DOE, 1984a) has been published to outline the Project Office approach to achieve compliance with public participation provisions of the Act and the NEPA. A *Public Information Plan* (DOE, 1984b) has also been published that details Project policy for the dissemination of information to the public by means of various forums and media. The Project prepares and distributes site fact sheets to public reading rooms and publishes newsletters. It has also set up a toll-free phone number that citizens may call to leave messages regarding any concerns they might have. In addition, under the cooperative agreements, affected states and Indian tribes have the prerogative of appointing local citizen task forces to interact with the DOE and the state for the purpose of information exchange. A number of these groups have been established to address plans and issues at each site.

3.2.2 State funding

The Act also requires the states, through the cooperative agreements, to share in the cost of the Project by funding 10 percent of the costs for remedial action performed within their borders. Before remedial action can begin at a site, this funding must be available. If a state does not appropriate money in its budget for remedial action, the schedule for that site will have to slip. The Project mitigates this risk by communicating to the states when remedial action is scheduled to begin at their sites and what the estimated cost of remediation is, and by following up to ensure the state has appropriated its share of funds.

3.2.3 Site acquisition

Prior to site acquisition, the Project needs to access the processing sites for remedial action planning and design development. In the majority of the cases, rights of entry have been negotiated by the DOE Albuquerque Operations Office (AL) with the persons owning interests in the processing sites. In a few cases, the lack of right of entry has impeded Project planning and design activities;

however, experience to date has shown the risk to the Project to be low in connection with the few sites that have not yet been acquired.

The Act requires that cooperative agreements with affected states and tribes include provisions for state acquisition of disposal sites, which may be the processing site. Acquisition of the disposal sites has affected Project schedules and costs when site owners were not willing sellers. In such cases, state condemnation actions were necessary, which for some states required state legislative action. Other factors contributing to the cost and schedule vulnerability include court-determined values in excess of appraised values, property mineral values, dependence on state resources for acquisition actions, and the time required for condemnation proceedings. Since 18 of the 24 sites have already been acquired, risk to the Project in site acquisition for the remaining 6 sites is estimated to be low.

In some cases, the DOE has acquired a disposal site through permanent withdrawal of public lands from the DOI, through the Bureau of Land Management (BLM), in accordance with PL 100-616. In such cases, the DOE was required to initiate withdrawal requests through the affected state, which required extensive time and effort by the Project and tended to cause schedule delays in the startup of site remedial action.

Previous efforts to mitigate state site acquisition vulnerability have included the identification of sufficient lead times for initiation of site acquisition activities, performance of independent property appraisals, and coordination of site-related activities with affected property owners.

3.2.4 Site licensing

After a site has been remediated, the Remedial Action Contractor (RAC) submits a site completion report to the DOE. The site completion report identifies the final site conditions, showing the results of the remediation. Where the disposal site was relocated off the processing site, the completion report contains separate information for each of the two sites. Upon approving the site completion report, the DOE certifies that the remedial action was completed according to the approved RAP, thus putting the site in compliance with EPA standards. The NRC reviews the completion report and validates the data presented by doing independent analyses and verifying that the EPA standards have been met. At this time, the NRC concurs with the DOE's certification of completion. Once a site is certified, title to the land occupied by the disposal site can be transferred to the Federal government (DOE). In most cases, the land was acquired by the state, and title will be transferred from the state to the Federal government (DOE). If the land is already owned by the Federal government (*i.e.*, the BLM), then a land transfer will have been negotiated and the proper NEPA requirements will have been satisfied.

After the disposal site has been certified and the land title transferred to the Federal government, the site LTSP can be finalized. The NRC will review and

accept the site LTSP as verification that it meets the requirements of 10 CFR 40.27 for the general license for custody and long-term care of residual radioactive materials disposal sites. When the NRC accepts the site LTSP, the general license becomes effective for that site. Where the disposal site is located separately from the processing site, the processing site does not come under the NRC general license. At that time, the processing site meets the EPA standards for remediation of mill tailings, and the land can be returned to its previous use. In the case of a completed processing site, the land title remains in the name of the state or reverts back to the original owners.

After the general license is issued for a site, the UMTRA Project Office's authority over surface remediation transfers to the DOE's LTSM Program, which is the responsibility of the GJPO. For disposal sites located at processing sites where ground water contamination exists, the UMTRA Project Office will maintain access to the site for ground water restoration activities, and the general license will be issued in two parts. The LTSM Program is still in effect for the disposal site regardless of ongoing ground water restoration.

There is schedule risk inherent in the licensing process since the NRC must validate the completion report to ensure the site complies, and the current holder of the land title must transfer title to the DOE. The current estimate is that it takes approximately 2 years to license a disposal site after remedial action is complete. However, since the NRC has not yet licensed a site, there is considerable uncertainty surrounding this schedule. Should it take longer than 2 years, licensing the last sites to complete remediation could extend the end date of the Project. There is a risk that the cost baseline could be impacted should there be a schedule slip due to delays in the licensing process, because site maintenance and documentation activities will continue for the duration of the Project and add to the cost. Based on the above, the risk to the Project cost is assessed as being moderate. Although there is a high risk that the licensing process will cause schedule delays, the additional dollars required to continue level of effort activities relative to the TPC are estimated to be low.

The Project plans to mitigate the risks that the licensing process poses to the Project cost and schedule baselines by continuing close coordination between the NRC and Project Office. In addition, the Project Office ensures the RAC is in compliance with the RAP for each site so that the completion reports will be concurred on by the NRC. The Project Office will closely monitor the development of completion reports and LTSPs to make sure they are not delayed, thereby delaying the NRC's acceptance.

3.3 REGULATORY IMPACTS

3.3.1 Uranium Mill Tailings Radiation Control Act

The UMTRCA explicitly places a time limit on the authority of the DOE to pursue surface remedial action at the sites and VPs. The current Project schedule shows the planned completion date of the Project to be September 1998;

however, the last legislation passed by Congress only extended the time limit to September 30, 1996 (PL 102-486). Although the Project would terminate prior to completion of the mission if the Act were not extended, the probability of this occurring is very low.

3.3.2 National Environmental Policy Act

The NEPA provides specific procedures to be followed in assessing and choosing options for environmental restoration. Development and approval of the finding of no significant impact (FONSI) or record of decision (ROD) for each site involves interaction with the NRC, the DOI, the EPA, other Federal agencies, state and local governments, Indian tribes, and the general public. The time required for public meetings, environmental document review, and public comment presents the potential for adverse impact on Project schedules. Expansion of data-gathering efforts to satisfy institutional concerns could also impact both the cost and schedule for completion of the NEPA activities. Additionally, public opposition during the NEPA process may extend the overall schedule for completion of the Project.

Many of the Project's policies and activities, developed to mitigate the cost, schedule, and performance risks associated with working with the Act's many designated participants, have also served to reduce the vulnerabilities in the NEPA process.

3.3.3 Other regulations

The Project is directly driven by the Act and the EPA standards; however, thousands of Federal, state, and local regulations have some degree of regulatory impact on the Project. The sheer number of regulations and the possibility that an additional regulation or an amendment to any one of them could have a big impact on the Project is an inherent risk. The Project is mitigating this risk by developing a comprehensive data base of the regulations currently impacting the Project and the applicability of each. In addition, the Technical Assistance Contractor (TAC) has formed the Regulatory Oversight Compliance Support (ROCS) Group, which is responsible for monitoring the regulations affecting UMTRA and assisting the Project Office in ensuring the Project is in compliance with the regulations. A summary list of the key regulations that influence Project actions can be found in the FY 1992 *Roadmap*, dated February 1993, Section 4.0, page 15 (DOE, 1993b).

3.4 VICINITY PROPERTIES

The Oak Ridge National Laboratory is responsible for performing assessments of the properties surrounding the designated sites and recommending remediation if these VPs exceed the EPA standards. Current Project plans, schedules, and cost estimates, based on the data available to date, indicate inclusion of 5068 VPs for remedial action. Remedial action has been completed on 4767 of them, as of March 1993.

Currently, the majority of the risk posed by the VPs is to the completion of the Grand Junction, Colorado, site. Seventy-four percent of the remaining VPs (222 of 301) are located at Grand Junction, and a delay caused by additional inclusions or discovery of commingled wastes could extend the Grand Junction completion schedule. Commingled wastes are a combination of uranium mill tailings and hazardous or toxic wastes. Regulations governing mixed wastes make remediation difficult. The Project schedule is impacted only if the site schedule slips by 12 months. For the Project to be completed on the current schedule, all VPs at Grand Junction must be identified for inclusion no later than March 1995. In addition, the disposal option for commingled wastes found at the VPs must be identified and approved in a timely manner so as not to impact the schedule.

Because there is no provision in the Act to cease remediating VPs before the surface authority expires, there is a moderate risk that additional properties may be identified which may require remediation beyond the legislative expiration date. In anticipation of continued inclusion of additional Grand Junction VPs, the Project Office is seeking to extend the schedule for closing the Grand Junction disposal cell.

The actions being taken to mitigate the risks the VPs pose to the schedule include exploring extending the schedule and communicating with the public. Since the end of the Project is September 1998 and authority to proceed with any remediation is expected to expire as of that date, the Project is taking measures to inform the public in affected areas that property owners wishing to have their properties included in the Project remediation activities need to do so in a timely manner to prevent a delay in the closure of the disposal cell.

The VPs pose a low risk to the Project cost and performance. Because remediation of 94 percent of the VPs has been completed, should additional remediation be required at the remaining VPs or should additional VPs be included, the cost impacts would be small relative to the TPC.

3.5 TECHNOLOGICAL REQUIREMENTS

The most significant Project performance objective is to achieve the proposed EPA standards at the sites and associated VPs. The Project R&TD Program has contributed to the accomplishment of this objective, primarily through tasks designed to ascertain the effectiveness, integrity, and longevity of tailings containment systems under normal and abnormal conditions. Knowledge of the tailings' characteristics and the effectiveness and cost of tailings containment technology has improved significantly over the past several years. We can measure meeting the radiation standards at disposal sites and can predict from structural data that the cell will last the specified 200 to 1000 years.

Given the status of technology and the EPA standards, the impact of the technological risk to the Project is assessed to be moderate because currently available technology and techniques can be used to stabilize and contain

uranium mill tailings, except for commingled wastes, and site-specific NRC and state requirements may cause estimated costs to increase. The Project's R&TD Program has contributed significantly to the mitigation of performance risk in the application of tailings impoundment and containment technology; however, the NRC has not yet verified that the Project has attained the standards by licensing any of the completed sites.

3.6 ENVIRONMENT AND HEALTH

The environment and health risks associated with the Project activities occur during remedial action and are predominantly construction-related or occur as the result of the construction.

The environmental consequences of Project activities are identified in the NEPA documentation prepared for each site. This documentation includes either an environmental assessment or an environmental impact study. All concerns over possible risk to the environment are addressed in the final environmental documents for the sites. The NEPA decision-making process provides a means of ensuring that all remedial action alternatives and mitigating measures are considered. The concurrences required for the RAP/site conceptual design (state/tribe and NRC) also provide a systematic means of ensuring that the environmental risk of proposed actions is minimized. Publication of the FONSI or of the ROD ensures that performance of remedial action will present less environmental risk than if no action were taken at all.

In this context, the risk of adverse environmental impact resulting from Project activities is assessed as low. Accordingly, the potential for impact on Project cost, schedule, and performance as a result of potential adverse environmental impact is also assessed as low.

As with any construction project, there are health risks. In addition, since the Project involves residual radioactive materials, there are concerns with respect to low-level radiation exposure, and there may be hazardous or mixed waste encountered on both the processing sites and VPs. Steps have been taken to mitigate these risks and are set forth in the *UMTRA Project Environmental, Health, and Safety Plan* (DOE, 1992a). These steps include worker training and use of protective clothing by workers. However, historical data and the increasing emphasis on health and safety by DOE Headquarters result in the potential for high cost risk but moderate schedule risk and low performance risk due to changes in regulations and orders.

3.7 SAFETY

As with the health and environment risks, the safety risks to the Project occur during the remedial action phase and are predominately related to construction. The construction industry, overall, has a higher accident rate than other industries. There is also a risk to the general public at sites where the tailings are hauled across or on public roads. A fatality or serious injury to either a

worker or a civilian could cause the site to be closed for a month or longer while an investigation is conducted. This would cause a schedule slip and add costs, since standby costs would probably be incurred during the shutdown.

While the potential for an accident is high in the construction industry, the UMTRA Project has reduced its potential for accidents to workers to well below the national rates. There are two rates monitored by the Project that give a good indication of the Project's level of safety. The first is the total Occupational Safety and Health Administration (OSHA) recordable rate, which measures all incidents that must be recorded according to OSHA regulations. For calendar year 1992, the national rate was 14.2 while the UMTRA Project rate was only 2.29. The second is the total lost workdays rate, which is a measure of days of work lost due to any type of accident. The national rate for calendar year 1992 was 6.7 while the UMTRA Project rate was 0.86.

These low rates were accomplished not only by complying with all applicable OSHA regulations, but also by implementing other procedures not required by OSHA. These include having lockout/tag-out procedures, conducting operational readiness reviews and operational readiness evaluations, and implementing the Safety Advancement Field Effort (SAFE) Program. The SAFE program was implemented by the TAC and provides additional on-site worker training and site monitoring in the form of personnel specifically assigned to increasing safety awareness and improving the level of safety on the Project. In addition, the Project has reduced the probability of a worker contracting hepatitis or the acquired immune deficiency syndrome virus by requiring that procedures be followed to minimize the risk of coming in contact with bloodborne pathogens.

Policies and procedures are effective only if they are followed, and the risk that they will not be followed is inherent in any hazardous activity. While the Project has implemented many policies and procedures designed to increase the safety of the workers and the public, there has been one fatality at the Grand Junction site when a worker was killed by a rock crusher. The Project has eliminated the probability of this happening again by ceasing the rock crushing activity at the sites and purchasing the rock required from outside vendors. The finding of the investigation that followed the accident was not conclusive as to its cause; however, the DOE accident investigation team required that additional plans and procedures be implemented. The Project is in the process of implementing these required plans and procedures and has implemented additional ones, as discussed above.

Although construction is a high risk industry, the Project has taken steps to mitigate the risks; therefore, the overall safety risk to the Project is assessed to be moderate.

4.0 MANAGEMENT APPROACH

4.1 ORGANIZATIONAL RESPONSIBILITIES

Responsibility for implementation of the Act is assigned to the DOE, states, tribes, and several other Federal entities. Attachment 12 depicts the various organizational responsibilities provided for in the Act, and the paragraphs below elaborate on the specific assignments.

The EPA, in accordance with the provisions of the Act, has promulgated standards for remedial actions at inactive uranium processing sites. The standards were published on January 5, 1983, and became effective on March 7, 1983. However, that portion of the standards dealing with ground water contamination was remanded in September 1985, and proposed standards were issued in September 1987. These proposed standards, revised in 1990, are the current working standards as required by the Act.

The NRC's responsibilities under PL 95-604 are extensive, as outlined previously in Section 3.2.1.

Responsibilities of other non-DOE Federal entities for provisions of the Act include consultation by the DOI concerning impacts to archaeological sites, sites on Indian lands, and the possible use of public lands for disposal sites; a determination by the U.S. Department of Justice regarding liability of owners and operators of the designated sites for remedial action costs; U.S. Department of Transportation requirements for movement of contaminated waste; and U.S. Fish and Wildlife Service requirements regarding protection of endangered species.

The DOE Headquarters program secretarial officer is the Assistant Secretary for Environmental Restoration and Waste Management (EM). UMTRA was formerly under the Assistant Secretary for Nuclear Energy before EM was established. The EM is responsible for designation of the processing sites and associated VPs, for characterization of the sites as to health effects and performance of radiological surveys, and for certification of completion of remedial actions. The EM is also responsible for accomplishment of remedial actions at the processing and disposal sites and VPs, development of stabilization technology, compliance with NEPA requirements, negotiation and execution of cooperative agreements with the affected states and Indian tribes, and surveillance and maintenance of the sites after remedial actions are completed.

4.2 DECISION DELEGATIONS

The Project has been designated as an MSA activity (MSA-AL-3), with day-to-day management assigned to the DOE/AL in the *Project Charter*, which was initially approved in June 1980 and amended in 1980, 1982, and 1986 (DOE, 1986). The *Project Charter* defines the purpose of the Project, the

mission of the AL Project Office, responsibilities and authorities of Headquarters organizations and the DOE/AL, reporting relationships, resources, and Project management control systems. Table 1 of the *Project Charter* delineates agency responsibilities under the Act, Table 3 presents the division of DOE responsibilities, and Table 4 identifies the major Project planning documents that require EM approval. The DOE/AL has been delegated authority to manage and execute Project functions within established procurement, real estate, and other operational approval thresholds.

Responsibilities for the DOE/AL management of the Project have been assigned through the Office of Energy and Special Programs to the UMTRA Project Manager. The Project Manager is supported by the Project Office staff; DOE/AL staff matrix support; the DOE/AL GJPO; Jacobs Engineering Group Inc., the TAC; MK-Ferguson, Co., and RUST-Geotech Inc., as RACs; and other selected support contractors. The Project Office is directly responsible for the management of the Project and its contractors in accordance with overall program policy and guidance provided by DOE Headquarters.

Specifically, the Project Office is responsible for:

- Coordination of activities with Indian tribes, state and local governments, and the public.
- Negotiation of cooperative agreements.
- Development of disposal and stabilization technology for uranium mill tailings.
- Operation of the Project Control System (PCS).
- Management of the NEPA process.
- Management of the selection and implementation of remedial action activities.
- Procurement of Project contractors.
- Acquisition of necessary licenses and permits.
- Operation of the precicensing custodial care program pending turnover of LTSM to the GJPO.
- Compliance with regulations and orders.

The Project Office is assisted in meeting these responsibilities by DOE/AL and Headquarters matrix support in the areas of procurement, public affairs, quality assurance, property management, legal, health and safety, safeguards and security, and finance and budget.

4.3 CONTRACTORS

The Project Office is supported by a TAC and two RACs. The TAC comprises the prime contractor, Jacobs Engineering Group Inc., and its subcontractors Roy F. Weston, Inc.; Sergeant, Hauskins and Beckwith; and Geraghty and Miller, Inc. The two RACs are MK-Ferguson, Co., supported by its construction subcontractors, and RUST-Geotech Inc., who is also the integrating contractor for the GJPO. The reason for dividing the work between a TAC and RACs and the roles and responsibilities of these contractors are further discussed in Section 5.0, Project Acquisition Strategy.

4.4 PROJECT CONTROL SYSTEM

The PCS is based on the Project WBS (shown in Attachments 9 and 10), which outline and integrate all facets of the Project activities. The system comprises six major elements, which are summarized below and are discussed in more detail in the *Project Management Plan* (DOE, 1988).

- Work definition—ensures that all Project work is identified and defined to the WBS and is planned, scheduled, and budgeted prior to authorization.
- Work authorization—provides control of the initiation of work and changes to previously authorized work.
- Work scheduling and control—provides for establishing an approved Project master schedule, implementing milestone monitoring and updating, ensuring systematic and in-depth impact analyses, and providing systematic and consistent change control.
- Acquisition strategy—identifies planned procurement and contracting activities (including acquisition of land or interests in land), defines the relationships and responsibilities of all Project participants, and provides for realistic contingency planning.
- Management reporting and reviews—uses the DOE Uniform Contractor Reporting System to establish a standard procedure for collecting and integrating essential cost, manpower, schedule, and technical information for managing contractual performance.
- Change control—ensures that change control procedures are developed and implemented in accordance with DOE Notice 4700.4A to provide for orderly control and management and ensure that Project baseline integrity is maintained.

Project progress is measured against technical, cost, and schedule baselines (discussed below and in Section 8.0 and in Attachments 14, 17, and 18) that are established by the Project Office and approved by EM-40 and the Acquisition Executive. The Project Office uses the baseline data to develop

detailed work plans for the Project and its participants. A responsibility assignment matrix, which illustrates the responsibilities for each Project phase, is included in Attachment 13.

- Technical/scope baseline—evolves from the EPA standards, applicable Federal and state laws, and the like, to the RAPs and engineering designs that detail the remedial actions (see Attachment 14).
- Schedule baseline—is based on the ESAAB-approved extension of the Project to the end of FY 1998. The scheduling system incorporates these requirements and consists of a hierarchy of schedules that start at the Project level and extend down to contractor schedules used for time-phasing detailed work packages (see Attachment 15).
- Cost baseline—is based on ESAAB-approved TEC summarized in this Project Plan (Attachment 19). The Project Office controls cost through management of the TEC and through application of the DOE MSA-level PCSs for the total Project, TAC, and the RACs. These controls result in the following actions: reconciliation and agreement on the cost baseline by all Project participants, minimization of changes to the approved baseline, controlled communication among Project participants, trend analysis reporting, and the maintenance of a consistent approach to evaluating and processing changes (see Attachment 22).
- Project funding baseline—is predicated on the cost baseline and is provided through the annual DOE/AL approved funding plan. Control of contingency funds rests with the Project Manager. Any changes to the Project funding baseline will result in corresponding changes to the other baselines in accordance with the change control procedures (see Attachment 4).

Cost and schedule thresholds for Project control are described in Section 8.0, Controlled Items/Baselines.

5.0 PROJECT ACQUISITION STRATEGY

In accordance with the DOE policy, a business strategy group was used to develop the initial Project acquisition strategy. The acquisition strategy took into consideration the overall Project environment, functional mission-oriented requirements, and UMTRCA participants' requirements. Consideration was also given to the objectives of maximizing competition and maintaining contractual flexibility and obtaining the optimal balance of overall coordination, integration, and management responsibility among Project participants.

The acquisition strategy resulted in selection of four primary contractors: a TAC, two RACs, and an inclusion survey/verification contractor. The purpose of having a TAC and two RACs is to ensure an independent assessment of the contractors' products. The site conceptual designs prepared by the TAC are reviewed by the RAC, and the final site designs prepared by one of the RACs are reviewed by the TAC. The inclusion survey/verification contractor performs assessments of VPs for inclusion, recommends remedial action if they exceed EPA standards, and verifies that remediated VPs comply with the EPA standards.

Through its planning and management support efforts, the TAC provides for overall Project integration by assisting the DOE in developing and implementing Project-level plans, budgets, and schedules. The TAC also supports the DOE in the areas of environment, safety, and health. Project management authority is retained in the Project Office along with the responsibility for Project control and overall technical management. Specific responsibilities of the TAC are summarized below:

- Support technology development.
- Gather environmental data.
- Prepare NEPA documents.
- Develop site LTSPs.
- Prepare processing and disposal site characterizations.
- Manage environmental activities (including radiological and health and safety site audits).
- Review the RACs' preliminary and detailed designs.
- Prepare site conceptual designs and RAPs.
- Perform radon monitoring of tailings before and after remedial action.

- Perform planning and management support in the areas of
 - Site management.
 - Health and safety.
 - Quality assurance.
 - Licensing and certification.
 - Project control (including the Integrated Project Management System).
 - Public information/public participation.
 - Document control.

The RACs provide final designs and perform field management of the remedial actions under the direction of the Project Office site managers who serve as line management. The purpose for having two RACs instead of just one is to provide a separate contractor to remediate the VPs in Grand Junction, due to the extensive number and complexity of the included properties. This particular RAC is directly under the management of the GJPO, now a part of the DOE/AL. Specific responsibilities of the RACs are listed below:

- Perform preliminary and detailed engineering design for processing sites and VPs.
- Award subcontracts for actual construction work.
- Perform construction management and inspection.
- Perform radon monitoring during remedial action.
- Perform site/VP health and safety.
- Perform site/VP quality assurance.

The acquisition strategy also identified cooperative agreements as the vehicles for DOE/state cost sharing, state/Indian tribe participation, and site acquisition and identified the contracting structure for VP remedial actions.

The acquisition structure has been designed to provide a balanced and integrated basis for achieving the Project objectives. Attachment 16 summarizes the current status of the acquisition strategy.

6.0 PROJECT SCHEDULE

6.1 BACKGROUND

The Project schedule consists of a hierarchy of schedules that start at the Project level and extend down to schedules used for time-phasing of detailed work by Project participants. Each of the lower tier schedules is compatible with the Project master schedule, with key milestones traceable from the top level schedule to lower tier schedules. Remedial actions for VPs are scheduled to be completed prior to completion of the remedial action of the associated processing sites, since residual radioactive materials removed from such VPs should be included with material from the processing site when the final stabilization is accomplished.

The Project scheduling hierarchy is as follows:

- Sites master schedule (Attachment 15).
- Individual site schedules.
- Contractor supporting schedules.
- Specific critical element schedules.

All schedules have been aligned to provide for completion of remedial actions by the end of FY 1996 and for completion of certification and licensing for all sites by FY 1998. The Project major milestones and the critical path for each activity are shown on Attachment 17.

6.2 SCHEDULED DECISION POINTS

The following decision points have been established for the Project:

Decision Point	Date	Authority
Key Decision No. 1 - Confirmation of the Project mission need and approval of the Project plan.	3rd Qtr FY 1983 (accomplished)	DOE/Acquisition Executive
Key Decision No. 2 - Approve RAP for first site. Proceed to final design.	4th Qtr FY 1983 (accomplished)	DOE/Acquisition Executive
Key Decision No. 3 - Approve engineering design for first site. Proceed to remedial actions.	4th Qtr FY 1983 (accomplished)	DOE/Acquisition Executive
Key Decision No. 4 - Terminate Project and commence LTSM at disposal sites.	4th Qtr FY 1998	DOE/Acquisition Executive

The Acquisition Executive Key Decisions No. 2 and No. 3 were based on planning for the Canonsburg site, as the lead site for the UMTRA Project. Remedial action at this site began in the fourth quarter of 1983. Following Key Decisions No. 2 and No. 3, the RAPs for the remaining 23 sites were, or will be, submitted to the NRC and states/tribes for approval prior to the start of remedial action, and remedial action will be completed at all sites. Key Decision No. 4 will follow completion of certification and licensing for the last site. This is scheduled for the fourth quarter of 1998.

6.3 CRITICAL PATH

The milestones on the Project critical path are determined to be those indicating the start or completion of a Project phase. Attachment 18 shows the milestones on the critical path and the dates they are to be accomplished, consistent with the schedule in Attachment 17.

6.4 STATUS

In addition to Key Decisions No. 1, No. 2, and No. 3, several key Project milestones have been accomplished since the establishment of the Project Office in early FY 1980, including the following:

- NEPA documentation complete or under way at all sites.
- Completion/initiation of processing site remediation and VP remediation as indicated in Attachment 3.
- Execution of cooperative agreements with all involved states and Indian tribes.

7.0 RESOURCES PLAN

7.1 COSTS

The ESAAB approved TPC is based on the current sites master schedule and is subject to change, if this schedule is impacted. Attachment 5 presents the Project total cost estimate by site and FY for the duration of the Project. Attachment 4 shows the ESAAB approved Baseline Resources Plan for Federal and state funding associated with the sites master schedule. Attachment 19 shows the resource requirements plan by ADS. This plan was presented in the briefing for the October 1992 Baseline Approved for Use.

Attachment 19 also shows the Project contingency. The contingency for the Project is developed by using a bottoms-up approach rather than by using a calculation based on a percent by FY. Risk assessment is performed as part of the budgeting process and at other times during the year, if necessary.

The Project Office, with input from the TAC, RACs, and ORNL, develops risks to the Project cost by sites, nonsite, and FY. Each risk is then evaluated to determine the potential dollar impact and the probability of occurrence. A risk sheet with these data is prepared for each site and one for nonsite. A sample risk sheet is shown as Attachment 20.

This process results in three categories of risk. The first includes the risks with a probability greater than or equal to 90 percent. The dollars assigned to these risks are normally included in the base budget, on advice received through the budget validation process. The second includes the risks with a less than 50 percent probability. These risks are identified but the dollars are not included in either base budget or contingency. They are considered, however, when reviewing contingency at the total Project level. The third category includes those risks with a probability greater than or equal to 50 percent but less than 90 percent. These risks form the basis for the contingency for each site and nonsite.

The contingency on the individual risk sheets is then rolled up to arrive at the total Project contingency. This is then reviewed and adjusted, as appropriate, to consider the "known unknowns" as well as historical data, trends related to the use of Project contingency, and DOE guidance regarding levels of contingency appropriate to the construction phase of a project. This reviewed amount then becomes the requested Project contingency by FY.

The resources required in a given FY vary by site and phase of current site work, with the heaviest requirement being during remedial action. After this phase, the requirements taper off, representative of the transition from construction activity to licensing activity. This phased approach results in an uneven spread of expenditures by site by FY.

7.2 MANPOWER

Attachment 21 presents UMTRA-Surface staffing estimates for the key participants. The staffing estimates are developed by each participant by using a bottoms-up approach that considers full-time equivalent personnel by FY by discipline. These individual estimates are consistent with the staffing plans developed for the 1992 UMTRA Project roadmap. The Project Office staffing presented in Attachment 21 was planned within Project ceiling and funding constraints; however, the findings of several audits (DOE, 1991, 1992d, 1992e) indicate that the Project Office requires an additional six UMTRA-Surface staff members to accomplish the current workload.

8.0 CONTROLLED ITEMS/BASELINES

Selected technical, cost, and schedule parameters have been established for baseline control and performance measurement. The parameters listed in Attachment 22 have been baselined through the ESAAB and EM-40 and can be changed only through formal change control, as discussed in Section 4.0 of this Project plan. Attachment 23 summarizes the thresholds and approval levels required to change the baseline parameters.

The thresholds for cost and schedule performance reporting are established uniformly on a site basis. Any difference between a site's planned and actual performance that exceeds plus or minus 15 percent or a schedule change of 30 days is addressed. Notification and explanation of cost and schedule variances exceeding these thresholds are provided in a variance analysis that is included in the monthly Progress Tracking System Report to DOE Headquarters. In addition to the thresholds identified for cost and schedule, significant cost, schedule, or performance objectives shall be reported to DOE Headquarters in the quarterly Project Manager's Progress Report.

9.0 SUBMISSIONS AND APPROVALS

This Project Plan is submitted by

_____ Albert R. Chernoff Project Manager	_____ Date
_____ Ralph Lightner Director, Office of Southwestern Area Programs	_____ Date
_____ Bruce G. Twining Manager, Albuquerque Operations Office	_____ Date
_____ R. P. Whitfield Deputy Assistant Secretary Office of Environmental Restoration	_____ Date

This plan identifies the mission and objectives of the Project, outlines the technical and managerial approach for achieving them, and summarizes the performance, cost, and schedule baselines that have been established to guide operational activity. Project schedules are aligned for completion of the Project by the end of FY 1998, at a TPC of \$1448.9 million. Approval will be required by the Acquisition Executive if the scope of the Project is changed or if the TPC increases by \$50 million or if the schedule slips by six months.

_____ Thomas P. Grumbly Assistant Secretary for Environmental Restoration and Waste Management	_____ Date
_____ _____ Acquisition Executive	_____ _____ Date

10.0 REFERENCES

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CODE OF FEDERAL REGULATIONS

- 10 CFR 40, "Domestic Licensing of Source Material," *Code of Federal Regulations*, Title 10, Part 40, U.S. Nuclear Regulatory Commission, Office of the Federal Register National Archives and Records Administration, Washington, D.C.
- 10 CFR 1021, "National Environmental Policy Act Implementing Procedures," *Code of Federal Regulations*, Title 10, Part 1021, U.S. Department of Energy, Office of the Federal Register National Archives and Records Administration, Washington, D.C.
- 40 CFR 192, "Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings," *Code of Federal Regulations*, Title 40, Part 192, U.S. Environmental Protection Agency, Office of the Federal Register National Archives and Records Administration, Washington, D.C.
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UMTRA SURFACE PROJECT PLAN
ATTACHMENTS

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UMTRA SITE LOCATIONS

ATTACHMENT 2
SUMMARY OF UMTRA SURFACE PROJECT EPA STANDARDS

Activity	Standard
Control of Tailings Piles Longevity Radon Emission Ground Water Protection	Control must be designed To be effective up to 1000 years, but not less than 200 years Not to exceed average release rate of 20 pCi per square meter per second, <u>OR</u> not increase the annual average concentration by more than 0.5 pCi per liter To meet 1987 proposed standards revised in 1990 (under EPA review)
Cleanup of Buildings Indoor Radon Decay Products Indoor Gamma Protection	Concentration caused by tailings must not exceed 0.03 WL; however, the objective is that concentration caused by tailings does not exceed 0.02 WL Not to exceed background level by more than 20 microrentgens per hour
Cleanup of Land Surface Buried	Concentration of radium-226 in land averaged over any area of 100 square meters shall not exceed background by more than - 5 pCi per gram, averaged over the first 15 cm of soil below the surface, <u>AND</u> - 15 pCi per gram averaged over 15-cm thick layers more than 15 cm below the surface.

pCi - picocuries.
WL - working level.
cm - centimeter.

ATTACHMENT 3

UMTRA SURFACE PROJECT PROCESSING SITES AND VICINITY PROPERTIES STATUS^a

Site location	Site (acres)	Total contaminated material to be handled (millions of cubic yards)		Vicinity properties	
		Completed	Estimated to go	Completed ^b	Estimated to go ^c
Ambrosia Lake	196	0.1	2.0	1	3
Belfield/Bowman	20	0	0.2	0	9
Canonsburg	30	0.4	Complete	163	0
Durango	126	2.5	Complete	128	1
Elmont	N/A	N/A	N/A	135	0
Falls City	146	2.4	1.0	7	6
Grand Junction	105	3.7	0.5	3999	222
Green River	39	0.4	Complete	17	0
Gunnison	61	0.1	0.7	10	2
Lakeview	258	0.9	Complete	8	0
Lowman	37	0.1	Complete	38	1
Maybell	110	0	0.7	0	0
Mexican Hat	173	1.1	0	10	1
Monument Valley	90	0.1	1.0	2	2
Naturita	50	0	0.6	0	21
Rifle (two sites)	164	0	4.1	73	27
Riverton	173	1.8	Complete	41	1
Salt Lake City	128	2.7	Complete	118	0
Shiprock	144	1.1	Complete	15	0
Slick Rock	106	0	0.6	0	4
Spook	60	0.3	Complete	1	1
Tuba City	105	1.0	Complete	1	0
Totals	2321	18.7	11.4	4767	301

^aAs of March 31, 1993.

^bNumbers indicate properties that have completed remediation through March 31, 1993.

^cNumbers indicate properties that are estimated to require remediation based on inclusion criteria and owner's consent.

UMTRA SURFACE PROJECT PROPOSED BASELINE RESOURCES PLAN

(ESCALATED - \$M)*

FEDERAL SHARE:	89.9	60.9	91.4	116.0	111.3	110.8	93.8	118.5	139.9	143.1	123.5	106.4	33.0	8.1	4.2	1350.8
STATE SHARE:	2.3	3.6	5.7	8.9	7.9	10.0	6.9	8.4	11.5	12.3	11.7	7.6	1.2	.1	0	98.1
TOTAL OBLIGATIONS:	92.2	64.5	97.1	124.9	119.2	120.8	100.7	126.9	151.4	155.4	135.2	114.0	34.2	8.2	4.2	1448.9

* ESCALATION RATES BASED ON THE DOE "DEPARTMENTAL PRICE CHANGE INDEX/ANTICIPATED ECONOMIC ESCALATION RATES" FOR DEFENSE PROGRAMS, EM AND GENERAL CONSTRUCTION, AUGUST 1981.

ATTACHMENT 5

TOTAL UMTRA SURFACE PROJECT COST BY SITE (\$M)
(ESCALATED - \$M)*

Site	Prior Years	FY92	FY93	FY94	FY95	FY96	FY97	FY98	Total
Ambrosia Lake	14.2	3.9	6.8	7.0	9.9	0.4	0.3	0.1	42.6
Belfield/Bowman	7.9	0.9	2.5	12.1	2.7	0.8	0.2	0.1	27.2
Canonsburg	43.0	0.3	0.1						43.4
Durango	61.2	0.4	0.2						61.8
Edgemont	5.1								5.1
Grand Junction	274.9	74.5	67.7	14.0	13.4	0.5	0.4		445.4
Falls City	14.8	7.8	10.0	14.5	4.2	0.4	0.4	0.1	52.2
Green River	19.2	0.5	0.1						19.8
Gunnison	26.5	15.3	8.1	6.2	14.8	1.7	0.2		72.8
Lakeview	29.6	0.4	0.1						30.1
Lowman	16.3	1.0	0.7	0.4					18.4
Maybell	8.8	1.6	0.9	7.4	13.9	7.9	2.9	2.2	45.6
Mexican Hat	30.0	4.4	9.4	11.7	0.7	0.4	0.1		56.7
Monument Valley	9.8	9.1	7.3	0.4					26.6
Naturita	8.9	1.4	0.8	14.6	11.5	4.4	1.8	1.3	44.7
Rifle	29.1	15.5	25.7	27.4	21.9	15.5	1.1	0.3	136.5
Riverton	42.7	0.4							43.1
Salt Lake City	82.9	0.5	0.3						83.7
Shiprock	21.8	0.1	0.1						22.0
Slick Rock	8.9	1.3	2.1	7.8	13.4	1.0	0.7	0.1	35.3
Spook	9.9	0.1	0.1						10.1
Tuba City	27.1	0.5	0.1						27.7
Federal share	792.6	139.9	143.1	123.5	106.4	33.0	8.1	4.2	1350.8
State share	53.7	11.5	12.3	11.7	7.6	1.2	0.1	0.0	98.1
Total Project cost	846.3	151.4	155.4	135.2	114.0	34.2	8.2	4.2	1448.9

*Escalation rates based on the DOE "Departmental Price Change Index/Anticipated Economic Escalation Rates" for defense programs, EM, and general construction, August 1991.

UMTRA SURFACE PROJECT PHASES AND KEY DECISIONS

(10 COMPLETED SITES)

AMBROSIA LAKE	CANONSBURG
MEXICAN HAT	SALT LAKE CITY
MONUMENT VALLEY	DURANGO
GRAND JUNCTION	SHIPROCK
RIFLE (2)	RIVERTON
FALLS CITY	GREEN RIVER
GUNNISON	LOWMAN
	LAKEVIEW
	SPOOK
	TUBA CITY

BELFIELD
BOWMAN
MAYBELL
NATURITA
SLICK ROCK (2)

UMTRA
SITE
DISTRIBUTION
(as of 6/93)

ATTACHMENT 7
UMTRA SURFACE PROJECT PHASING

Project phase	Activity	Description	Product	Decision
NEPA process	Conduct environmental assessment and develop remedial action and disposal options.	Perform data collection and analysis. Develop and evaluate options for remedial action based on analysis.	Environmental Assessment/ FONSI/Environmental Impact Statement/ROD	Decide on remedial action protocol.
Remedial action planning	Perform remedial action planning and design development.	Prepare a detailed site plan for remedial action.	Draft RAP	Ensure that the RAP meets EPA standards and requirements. Proceed with engineering development.
Site acquisition	Acquire site.	Purchase fee simple title, withdraw land from public domain, or access Indian lands.	Remedial action agreement, real estate purchase agreement, or land withdrawal application	Acquire land in time to support remedial action schedule.
Remedial action design	Perform detailed engineering.	Prepare drawings, specifications, cost estimate, and schedule; finalize RAP.	Final RAP/final design	Proceed into remedial operations.
Site remedial action	Conduct remedial operations.	Implement remedial actions outlined in the RAP.	Stabilized site and site completion report	Remedial actions comply with EPA standards.
Certification	Verify EPA standards have been met.	Certify, with NRC concurrence, that the provisions of the final design have been satisfied.	Certification report	Concurrence that remedial actions conducted per final design.
Licensing	Meet NRC requirements for disposal site license.	Prepare and submit to NRC the site LTSP.	General license for post-remedial maintenance	Disposal site integrity.
Surveillance and maintenance	Implement monitoring.	Conduct site inspections to ensure the site remains environmentally sound.	Site inspection and annual surveillance and maintenance reports	Begin long-term surveillance and maintenance.

UMTRA SURFACE PROJECT FUNCTIONAL WORKFLOW

PROCESSING SITES

VICINITY PROPERTIES

UMTRA SURFACE PROJECT WORK BREAKDOWN STRUCTURE BY ACTIVITY DATA SHEET

PROJECT WORK BREAKDOWN STRUCTURE

UMTRA SURFACE
PROJECT
EX - 20 - 40

UMTRA SITES

01 CAMONSBURG ¹	06 RIFLE (O & N)	11 SLICK ROCK (U & N)	16 AMERISIA LAKE	21 BELFELD
02 SALT LAKE CITY	07 RIVERTON	12 LOWMAN	17 NATURITA	22 BOWMAN
03 DURANGO	08 GUNNISON	13 LAKEVIEW	18 TURBA CITY	23 EDGE MONT (N?)
04 SHIPROCK	09 MEXICAN HAT	14 MAYBELL	19 MONUMENT VALLEY	99 NON-SITE
05 GRAND JUNCTION	10 GREEN RIVER	15 SPOOK	20 FALLS CITY	

1 INCLUDES BURNEL - VP

ADS 1322-1351, 1364: CAPTURES PWBS ELEMENTS S06, S10, S15, S25, S30
ADS 1365: CAPTURES PWBS ELEMENTS S10, S26, S30 FOR STATE SHARE
ADS 1362: CAPTURES PWBS ELEMENTS S20, S40
ADS 1363: CAPTURES PWBS ELEMENT S36

Legend
PWBS - Project work breakdown structure
Rev: DOE, 1998 b

ATTACHMENT 11
UMTRA SURFACE PROJECT BASELINE RISK MATRIX

Major risk areas	Rating			Rationale for risk rating
	High	Medium	Low	
Multiple Participants			X	Potential schedule delays as a result of the number of participants required to approve NEPA documentation. LOW risk since the Project office is aware of the potential and is closely monitoring. Potential cost impacts due to involvement of states and tribes in remedial action method decisions. LOW risk; although could introduce large cost impact to any one site, impact to the Project as a whole is small since all but six sites are beyond that phase.
State Funding		X		Risk to schedule if state funding not available when remedial action is scheduled. MEDIUM risk because, although this has happened in the past and delayed the schedule at some sites, improved Project communication with the states should be able to prevent this from happening in the future.
Site Acquisition		X		Potential schedule delays if site owners not willing sellers or disposal site title is not clear for licensing. MEDIUM risk since this has occurred at some sites and there is no way to prevent this.
Site Licensing	X			Project has not yet received an NRC license. Time required to license a site is uncertain. HIGH because a delay in licensing the last site would increase costs and significantly impact the schedule beyond the approved Project end date.
Regulatory Impacts			X	Termination of authority to complete Project mission if UMTRCA not extended; LOW probability of this happening. NEPA process introduces risk to schedule; LOW, as above. Many Federal, state, and local regulations govern the Project; changes and additions before Project completion potentially significantly impact; experienced impacts have been low, and ROCS implemented to keep Project apprised.
Vicinity Properties			X	LOW risk since majority of the VPs have been completed. The remaining VPs should not have any significant impacts on the Project as a whole.
Environment and Health			X	Construction is a high risk industry; however, the Project's mitigating measures have reduced the risk to LOW.

ATTACHMENT 11 (CONCLUDED)
UMTRA SURFACE PROJECT BASELINE RISK MATRIX

Major risk areas	Rating			Rationale for risk rating
	High	Medium	Low	
Safety		X		While the construction industry has a high accident rate, the Project has reduced the potential for accidents by going beyond the OSHA requirements. This has mitigated the safety risk to the Project to MEDIUM.
Technical Requirements			X	LOW since technology to meet current EPA standards is available.
Cost			X	Cost increases possible because of above risks, additional quantities to remediate, and timing of required funding. Impact as a percent of the total cost is LOW.
Schedule		X		For reasons stated above, and staffing constraints.

UMTRA SURFACE PROJECT ORGANIZATION

ATTACHMENT 13
UMTRA SURFACE PROJECT RESPONSIBILITY ASSIGNMENT MATRIX

Project phase	Responsible organization				
	TAC	MK-Ferguson	RUST-Geotech	Oak Ridge National Lab	States NRC/DOI
NEPA process	X				
Remedial action planning	X		X ^a	X ^b	
Site acquisition					X X ^c
Remedial action design		X ^a	X ^a		
Site remedial action		X ^a	X ^a		
Certification	X ^d				X X
Licensing	X ^d				X X
Surveillance and maintenance	X		X ^e		

^aRUST-Geotech performs Grand Junction VP engineering design and remedial actions; MK-Ferguson performs all design and remedial action to include VPs for all sites except Grand Junction.

^bOak Ridge National Laboratory performs VP inclusion/exclusion surveys.

^cDOI, through BLM, withdraws public land for disposal sites.

^dTAC prepares documentation for NRC concurrences to include LTSP.

^eRUST-Geotech performs precicensing custodial care for all disposal sites.

ATTACHMENT 14

UMTRA SURFACE PROJECT SCOPE BASELINE
PART I - INCOMPLETE SITES

Site location	Preferred disposal option	Ground Water standard for surface remedial action	Wastewater treatment plant	Total estimated vicinity properties	Cubic yards of contaminated material to be handled	Cubic yards of uncontaminated material to be handled
Ambrosia Lake	Stabilize in place	Supplemental standards	N/A	4	2,060,000	Radon barrier: 450,000 Erosion protection: 186,700
Belfield/Bowman	Bowman: Stabilize in place Belfield: Relocate to Bowman	Maximum concentration limit	Mobile plant	9	158,000	Radon barrier: 19,600 Erosion protection: 153,240
Falls City	Stabilize in place/stabilize on site	Supplemental standards	Mobile plant	13	3,388,000	Radon barrier: 398,000 Erosion protection: 153,240
Grand Junction	Relocate to Cheney, Colorado	Geologic isolation with supplemental standards	Former Lakeview plant plus mobile	4221	4,300,000	Radon barrier: 203,500 Erosion protection: 130,410
Gunnison	Relocate to site landfill	Maximum concentration limit	Former Salt Lake City module	12	773,000	Radon barrier: 178,900 Erosion protection: 63,500
Maybell	Stabilize in place	Supplemental standards	Mobile plant	0	550,000	Radon barrier: 160,000 Erosion protection: 260,300
Mexican Hat	Stabilize in place	Supplemental standards	N/A	11	1,112,000	Radon barrier: 224,800 Erosion protection: 194,200
Monument Valley	Relocate to Mexican Hat, Utah	Supplemental standards	N/A	4	1,126,000	Radon barrier: N/A Erosion protection: N/A
Naturita	Relocate to Dry Flats, Colorado	Supplemental standards	N/A	21	582,000	Radon barrier: 59,000 Erosion protection: 133,000
Rifle (2 sites, - Old and New Rifle)	Relocate to Estes Gulch, Colorado	Geologic isolation with supplemental standards	Former Salt Lake City module	100	4,057,000	Radon barrier: 576,000 Erosion protection: 273,830
Slick Rock [2 sites - UC (Umetco) and NC (North Continent Mines, Inc.)]	Relocate to Burro Canyon, Colorado	Geological isolation with supplemental standards	N/A	4	650,000	Radon barrier: 89,900 Erosion protection: 48,100

ATTACHMENT 14 (CONCLUDED)
UMTRA SURFACE PROJECT SCOPE BASELINE
PART II—COMPLETED SITES

Site location	Preferred disposal option	Ground Water standard for surface remedial action	Wastewater treatment plant	Total estimated vicinity properties	Cubic yards of contaminated material to be handled	Cubic yards of uncontaminated material handled
Canonsburg	Stabilize in place	Grandfathered	Nonmobile	163	376,119	Radon barrier: 62,990 Erosion protection: 135,561
Durango	Relocated to Bodo Canyon, Colorado	Maximum concentration limit	Mobile plant	129	2,532,586	Radon barrier: 359,227 Erosion protection: 148,441
Green River	Stabilize on site	Maximum concentration limit	Mobile plant	17	381,798	Radon barrier: 27,911 Erosion protection: 29,345
Lakeview	Relocated to Collins Ranch, Oregon	Maximum concentration limit	Nonmobile	8	943,500	Radon barrier: 33,000 Erosion protection: 46,000
Lowman	Stabilize in place	Maximum concentration limit	N/A	39	126,105	Radon barrier: 17,929 Erosion protection: 30,308
Riverton	Relocated to UMETCO Gas Hills	N/A	N/A	42	1,792,630	Radon barrier: N/A Erosion protection: N/A
Salt Lake City	Relocated to Clive, Utah	Grandfathered	Mobile plant	118	2,710,000	Radon barrier: Not provided Erosion protection: Not provided
Shiprock	Stabilize in place	Grandfathered	Mobile plant	15	1,078,996	Radon barrier: 765,378 Erosion protection: 328,884
Spook	Stabilize in place	Supplemental standards	N/A	2	314,309	Radon barrier: 126,725 Erosion protection: N/A
Tuba City	Stabilize in place	Maximum concentration limit with baseline determination of pre-existing aquifer contamination	Mobile plant	1	980,111	Radon barrier: 250,043 Erosion protection: 152,391

UMTRA SURFACE PROJECT SCHEDULE

(FY93 REPLAN - ACTIVE SITES ONLY)

SEPTEMBER 1992

PLANNING & DESIGN, NEPA
 REMEDIAL ACTION
 ENGINEERING

NRC general license in effect
 Transfer site to GJPO/LTSM Program

▲ ALL CONTAMINATED MATERIALS WILL BE REMOVED TO THE PROCESSING SITE N.T. 6/30/93
 ◆ ALL CONTAMINATED MATERIALS WILL BE REMOVED TO THE DISPOSAL SITE N.T. 11/30/93

PS - PROCESSING SITE
 VP - VICINITY PROPERTIES

(VP REMEDIAL ACTION INCLUDED IN PROCESSING SITES
 EXCEPT FOR GRAND JUNCTION, RIFLE, AND
 FALLS CITY)

ATTACHMENT 16
UMTRA SURFACE PROJECT ACQUISITION STRUCTURE

Structure component	Contractor	Contract identification	Contract type	Award date	Term	Comment	Current contract amount (\$M)
TAC	Jacobs Engineering Group Inc.	AL 62350	CPFF	04/01/91	24 months ^a	Negotiated and funded via discrete term task agreements.	58.4
RAC	MK-Ferguson Company	AL 18796	CPFF	04/18/86	36 months ^b	Negotiated and funded via discrete term task agreements.	549.5
RAC for GRJ/EDG VPs	RUST-Geotech Inc.	AL 12584	CPAF	08/86	60 months ^c	Funded through work package authorization.	212.0
Inclusion survey contractor	Oak Ridge National Laboratory	OR 21400	CR	10/01/79	Life of project	Funded through work package authorization	34.6
Cooperative agreements (CA) ^d	Colorado	AL 16257	CA	10/19/81	Life of project	Sole source awards for duration of surface Project. All except Navajo and Hopi Tribes include provisions for 10 percent cost sharing. All include provisions for site acquisition, remedial action plan concurrence, and site access agreements.	
	Utah	AL 16309	CA	03/30/83	Life of project		
	Pennsylvania	AL 19487	CA	09/05/80	Life of project		
	North Dakota	AL 20536	CA	02/23/83	Life of project		
	Idaho	AL 20535	CA	03/11/85	Life of project		
	Navajo Tribe	AL 16258	CA	10/07/83	Life of project		
	New Mexico	AL 20533	CA	09/27/85	Life of project		
	Oregon	AL 20534	CA	07/24/84	Life of project		
	Texas	AL 20532	CA	03/31/86	Life of project		
	Wyoming	AL 19454	CA	01/30/84	Life of project		
	South Dakota	AL 23867	CA	05/22/84	Life of project		
	Navajo-Hopi Tribe	AL 26731	CA	10/07/83	Life of project		

^aWith three 12-month options.

^bWith two 24-month options, plus one 54-month option.

^cWith two 12-month options.

^dRenegotiation or modification of existing CAs will be required for the Ground Water Project.

CA - cooperative agreement.

CPAF - cost plus award fee.

CPFF - cost plus fixed fee.

CR - cost reimbursable.

ATTACHMENT 17

UMTRA SURFACE PROJECT MAJOR MILESTONES

EM-approved for use

Milestones as of October 9, 1992

Site	Milestone title	Baseline dates
Ambrosia Lake	Complete VP/remedial action Complete site remedial action NRC general license in effect	09/30/93 08/18/95 08/20/97
Belfield/Bowman	Publish FONSI NRC concurrence on RAP Start site remedial action Start VP remedial action Complete VP remedial action Complete site remedial action NRC general license in effect	04/01/93 10/15/92 03/03/94 03/03/94 09/30/94 12/02/94 03/06/97
Canonsburg	NRC general license in effect	02/26/93
Durango	NRC general license in effect	10/20/93
Falls City	Complete site remedial action NRC general license in effect	12/02/94 01/26/98
Grand Junction	Complete VP remedial action Complete site remedial action NRC general license in effect	12/31/93 11/30/94 10/22/96
Green River	NRC general license in effect	11/18/93
Gunnison	Complete VP remedial action Complete site remedial action NRC general license in effect	10/29/93 11/30/94 06/06/97
Lakeview	NRC general license in effect	02/09/93
Lowman	NRC general license in effect	01/24/94
Maybell	Publish FONSI NRC conditional concurrence on RAP Start VP remedial action Start remedial action Complete VP remedial action Complete site remedial action NRC general license in effect	09/02/93 02/01/94 04/01/94 04/01/94 09/29/94 11/30/94 09/30/98
Mexican Hat	Complete VP remedial action Complete site remedial action NRC general license in effect	06/30/93 08/17/95 08/11/97
Monument Valley	Complete VP remedial action Complete site remedial action	06/30/93 04/30/94

ATTACHMENT 17 (CONCLUDED)

UMTRA SURFACE PROJECT MAJOR MILESTONES

EM approved for use

Milestones as of: October 9, 1992

Site	Milestone title	Baseline dates
Naturita	Publish FONSI NRC concurrence on RAP Start site remedial action Start VP remedial action Complete VP remedial action Complete site remedial action NRC general license in effect	01/02/94 09/28/93 03/01/94 04/13/94 11/14/94 09/29/95 03/19/98
Rifle	Complete VP remedial action Complete site remedial action NRC general license in effect	09/30/93 05/06/96 07/13/98
Salt Lake City	NRC general license in effect	11/23/93
Shiprock	NRC general license in effect	10/01/93
Slick Rock	Publish FONSI NRC concurrence on RAP Start site remedial action Start VP remedial action Complete VP remedial action Complete site remedial action NRC general license in effect	02/01/94 02/28/94 04/05/94 04/01/94 08/31/94 08/17/95 08/14/97
Spook	NRC general license in effect	05/08/93
Tuba City	NRC general license in effect	04/21/93

ATTACHMENT 18

UMTRA SURFACE PROJECT CRITICAL PATH MILESTONES

Milestone	Completion date
Publish FONSI (complete NEPA) for Naturita	01/02/94
NRC concurrence on RAP for Maybell	02/01/94
Start site remedial action at Slick Rock	04/05/94
Start VP remedial action at Naturita	04/13/94
Complete VP remedial action at Naturita	11/13/94
Complete site remedial action at Rifle	05/06/96
NRC issues license for Maybell	09/30/98

ATTACHMENT 19

RESOURCE REQUIREMENTS PLAN BY ACTIVITY DATA SHEET (\$M)
(DOE FY92 ESCALATION FACTORS ARE USED)
(ESCALATED - \$M)*

MSA: AL-3 Uranium Mill Tailings Remedial Action - Surface

Date: October 9, 1992

Date. October 5, 1992

Subproject (Activity data sheet)	Total funding requirements								
	Prior year funding	FY92	FY93	FY94	FY95	FY96	FY97	FY98	Total
Ambrosia Lake (ADS Alum 1322)	10.1	3.4	5.6	5.9	6.2	0.0	0.0	0.0	31.2
Belfield/Bowman (ADS Alum 1325)	2.3	0.5	0.3	10.0	1.2	0.0	0.0	0.0	14.3
Falls City (ADS Alum 1330)	6.4	6.9	7.8	11.2	0.4	0.0	0.0	0.0	32.7
Grand Junction (ADS Alum 1332)	263.1	71.3	61.1	11.3	0.3	0.1	0.0	0.0	407.2
Gunnison (ADS Alum 1337)	14.2	9.2	5.9	4.3	7.3	0.2	0.0	0.0	41.1
Maybell (ADS Alum 1344)	3.6	0.4	0.2	5.5	12.0	3.2	0.1	0.0	25.0
Mexican Hat (ADS Alum 1346)	22.0	2.9	6.8	8.7	0.0	0.0	0.0	0.0	40.4
Monument Valley (ADS Alum 1349)	4.3	8.9	6.6	0.1	0.0	0.0	0.0	0.0	19.9
Naturita (ADS Alum 1351)	3.5	0.6	0.3	13.1	9.4	1.5	0.0	0.0	28.6
Rifle (ADS Alum 1354)	19.2	15.0	22.4	22.7	15.3	4.3	0.0	0.0	98.9
Slick Rock (ADS Alum 1361)	3.5	0.5	0.9	6.7	11.4	0.0	0.0	0.0	23.0

*Escalation rates based on the DOE "Departmental Price Change Index/Anticipated Economic Escalation Rates" for defense programs, EM, and general construction, August 1991.

ATTACHMENT 19 (CONCLUDED)

RESOURCE REQUIREMENTS PLAN BY ACTIVITY DATA SHEET (\$M)
(DOE FY92 ESCALATION FACTORS ARE USED)
(ESCALATED - \$M)*

MSA: AL-3 Uranium Mill Tailings Remedial Action - Surface

Date: October 9, 1992

Subproject (Activity data sheet)	Total funding requirements								
	Prior year funding	FY92	FY93	FY94	FY95	FY96	FY97	FY98	Total
Completed sites (ADS Alum 1364)	295.8	0.2	0.0	0.1	0.0	0.0	0.0	0.0	296.1
Remedial action summary Subproject (Subtotal ADS')	648.0	119.8	117.9	99.6	63.5	9.3	0.1	0.0	1058.2
Surveillance and maintenance Summary subproject (ADS Alum 1363)	3.0	1.1	0.9	.8	1.3	1.2	0.9	0.3	9.5
Program management support Summary subproject (ADS Alum 1362)	195.3	30.5	12.2	27.4	15.2	14.1	4.8	3.7	303.2
Total summary subprojects base	846.3	151.4	131.0	127.8	80.0	24.6	5.8	4.0	1370.9
Total Project contingency	0.0	0.0	24.4	7.4	34.0	9.6	2.4	0.2	78.0
TPC	846.3	151.4	155.4	135.2	114.0	34.2	8.2	4.2	1448.9
State share (ADS 1365)	(53.7)	(11.5)	(12.3)	(11.7)	(7.6)	(1.2)	(0.1)	0.0	(98.1)
Total MSA Federal funding (TEC)	792.6	139.9	143.1	123.5	106.4	33.0	8.1	4.2	1350.8

*Escalation rates based on the DOE "Departmental Price Change Index/Anticipated Economic Escalation Rates" for defense programs, EM, and general construction, August 1991.

UMTRA SURFACE PROJECT STAFFING

PERSONNEL (FULL TIME EQUIVALENTS, INCLUDING SUBCONTRACTORS)

	FY93	FY94	FY95	FY96	FY97	FY98
UMTRA PROJECT OFFICE	19.0	24.0	22.0	17.0	9.0	5.0
AL MATRIX*	2.0	2.0	1.5	1.0	1.0	0.5
TAC	73.0	59.0	45.0	25.0	12.0	11.0
MK-F	1,230.0	1,206.0	740.0	178.0	46.0	36.0
RUST-G	380.0	138.0	39.0	5.0	5.0	0.0
TOTAL	1704.0	1429.0	847.5	226.0	73.0	52.5

*UMTRA PROJECT AUTHORIZED POSITION

ATTACHMENT 22
SUMMARY OF UMTRA SURFACE PROJECT BASELINE INFORMATION

Baseline	Acquisition Executive (Level 0)	Secretarial/program (Level 1)	Project/field (Level 2)
Technical (scope) (See Attachment 14 for details)	Remediate all tailings and VPs to EPA standards at 24 designated sites.	Total cubic yards of contaminated material Total number and type of VPs	For each site: <ul style="list-style-type: none"> - Disposal option - Ground Water standard - Number and type of vicinity properties - Cubic yards of contaminated materials
Schedule (See Attachments 15 and 17 for details)	<ul style="list-style-type: none"> - Annual ESAAB reviews: FY 1994, 1995, 1996, and 1997. - KD4: Terminate Project and commence LTSM by end of FY 1998. 	<ul style="list-style-type: none"> - Approval of ROD/FONSI/other NEPA documents for each site - RAP approval for each site - Start and complete site and VP remedial action at each site - NRC issues general license program 	For each site: <ul style="list-style-type: none"> - Issue/publish FONSI, Environmental Impact Statement/ROD, or other NEPA documents - Begin final design - Issue final design/RAP - Secure site access - Begin and complete remedial action - Approve LTSM plan - Transfer to LTSM program
Cost (See Attachment 19 for details)	TEC \$1350.8M Federal share TPC \$1448.9M	TPC for each site	TPC for each site/contractor Approved level of contingency (\$78.0M)

ATTACHMENT 23

SUMMARY OF UMTRA SURFACE PROJECT THRESHOLDS

Baseline	Acquisition Executive (Level 0)	Secretarial/program (Level 1)	Project/field (Level 2)
Technical (scope) (See Attachment 14 for details)	Changes impacting number of designated sites or EPA standards	> 5 million cubic yard increase in total contaminated material > 50 VP increase in total VPs	All changes for each site impacting: <ul style="list-style-type: none"> - Disposal option - Ground Water standard - Number and type of VPs - Cubic yards of contaminated material
Schedule (See Attachments 15 and 17 for details)	Schedule change in excess of 6 months for KD4	Level 1a: <ul style="list-style-type: none"> - Schedule changes > 3 months but < 6 months for KD4 Level 1b: <ul style="list-style-type: none"> - Schedule changes > 3 months for Level 1 milestones 	Schedule change < 3 months for Level 1 milestones Schedule changes > 1 month for Level 2 milestones
Cost (See Attachment 19 for details)	Cost changes in excess of ± \$50M	Level 1a: <ul style="list-style-type: none"> - Any change in Project TPC > \$35M but < \$50M Level 1b: <ul style="list-style-type: none"> - Any change in Project TPC > \$25M but < \$35M - Any change in a site TPC > 15% 	All proposed cost changes for which use of Project contingency is required. Any change in Project TPC < \$25M Any change in a site TPC < 15%

END

**DATE
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11/01/93