**TECHNICAL ASSISTANCE CONTRACTOR
MANAGEMENT PLAN**

FINAL

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LIST OF ACRONYMS

<u>Acronym</u>	<u>Definition</u>
AADITS	Assessment and Analysis Documentation and Information Tracking System
ACL	alternate concentration limits
ADS	activity data sheets
AL	Albuquerque Operations Office
APM	Assistant Project Manager
APM-SM	Assistant Project Manager-Site Management
APM-TS	Assistant Project Manager-Technical Services
APM-MS	Assistant Project Manager-Management Services
COR	Contracting Officer's Representative
CPM	Critical Path Method
CX	Categorical Exclusion
DEAR	DOE Acquisition Regulation
DOE	U.S. Department of Energy
DPM	Deputy Project Manager
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ER/WM	Environmental Restoration/Waste Management
ES&H	Environmental Safety and Health
FAR	Federal Acquisition Regulations
FONSI	Findings Of No Significant Impact
G&M	Geraghty and Miller
GJPO	Grand Junction Projects Office
ICE	Independent Cost Estimate
IPMS	Integrated Project Management System
ITR	Independent Technical Review
JEG	Jacobs Engineering Group Inc.
LAN	Local Area Network
LTSP	Long Term Surveillance Plan
NEPA	National Environmental Policy Act
NRC	U.S. Nuclear Regulatory Commission
PCIM	Project Critical Issues Meeting
PEIS	Programmatic Environmental Impact Statement
PM	Project Manager
PMCS	Project Management Control System
QA	Quality Assurance
QAIP	Quality Assurance Implementation Plan
QAPP	Quality Assurance Program Plan
QIS	Quality Improvement Suggestion
RAC	Remedial Action Contractor
RAP	remedial action plan
REA	Radiological and Engineering Assessment
RFW	Roy F. Weston, Inc.
ROCS	Regulatory Oversight and Compliance Support

LIST OF ACRONYMS (Concluded)

<u>Acronym</u>	<u>Definition</u>
ROD	Record of Decision
SAFE	Safety Advancement Field Effort
SHB Agra	Sergeant, Hauskins and Beckwith Agra, Inc.
SOP	Standard Operating Procedure
SOWP	Site Observational Work Plan
SPEAR	Software Program for Environmental Analysis and Reporting
STP	Staff Technical Position (Paper)
TAC	Technical Assistance Contractor
TAD	Technical Approach Document
TAILS	TAC Action Item Logging System
TAS/FRET	Team Assignment System/Functional Resource Evaluation Table
TQM	Total Quality Management
TRAIN	Training Records Administration and Information Network
UMTRA	Uranium Mill Tailings Remedial Action
UMTRCA	Uranium Mill Tailings Radiation Control Act
UPDCC	UMTRA Project Document Control Center
VPDMS	Vicinity Property Data Management System
VPERR	Vicinity Property Engineering Review Report
VPMIM	Vicinity Properties Management and Implementation Manual
WBS	Work Breakdown Structure
WSAP	Water Sampling and Analysis Plan

1.0 INTRODUCTION

1.1 OVERVIEW

The Technical Assistance Contractor (TAC) for the Uranium Mill Tailings Remedial Action (UMTRA) Project comprises Jacobs Engineering Group Inc. (JEG) and its major teaming partners [Roy F. Weston, Inc. (RFW), Sergeant, Hauskins & Beckwith Agra, Inc. (SHB Agra), and Geraghty & Miller, Inc. (G&M)]. The first three companies have worked together effectively on the UMTRA Project for more than 10 years. With the initiation of the UMTRA Groundwater Project in April 1991, a need arose to increase the TAC's groundwater technical breadth and depth, so G&M was brought in to augment the team's capabilities.

The TAC contract's scope is to provide technical, analytical, environmental, engineering, design, inspection, and management support services to the U.S. Department of Energy (DOE) for both surface and groundwater projects. The TAC team continues to support the DOE in completing surface remedial actions and initiating groundwater remediation work for start-up, characterization, design, construction oversight, and remedial operations.

The TAC provides the DOE UMTRA Project Office with a dedicated management, scientific, and technical resource base in Albuquerque, New Mexico, supplemented by corporate resources. A carefully developed and maintained staff of technical experts is available to assess, analyze, develop, and execute cost-effective solutions to the demanding technical and institutional problems presented by the UMTRA Project.

A key feature of the TAC's management approach is the extensive set of communication systems implemented for the UMTRA Project. These systems assist all functional disciplines in performing UMTRA Project tasks associated with management, technical support, administrative support, and financial/project controls. Systems such as the 1) TAC Action Item Logging System (TAILS), 2) Team Assignment System/Functional Resource Evaluation Table (TAS/FRET), 3) Training Records Administration and Information Network (TRAIN), and 4) Assessment and Analysis Documentation and Information Tracking System (AADITS), combined with daily informal staff meetings, weekly formal staff meetings, written reports, and site planning meetings, provide closed-loop support to the DOE client. Section 6.2, Management Improvements, provides additional information on these systems.

This TAC management plan summarizes the management and technical approaches used by the TAC to ensure continued efficient, high-quality support to the DOE. The plan also describes the TAC organization and the systems used to control management, administrative, and technical activities.

1.2 TAC VISION AND MISSION STATEMENTS

The following vision and mission statements serve as guiding principles and provide the highest level of direction to establish management goals, policies, plans, procedures, and systems. They also serve as a basis for TAC self-assessment.

1.2.1 Vision statement

The UMTRA TAC team will be a world leader in uranium mill tailings environmental compliance through innovative, timely, and high-quality management and technical services. This will be accomplished in a climate that encourages employee teamwork, creativity, and productivity while serving the client and public stakeholders.

1.2.2 Mission statement

The UMTRA Project TAC team's mission is to provide technical and management support for DOE remediation of uranium mill tailing sites. This includes planning, cost and schedule controls, site characterization, remedial action design, regulatory compliance services, quality assurance, and public affairs. The mission will be accomplished in a timely, cost-effective, and technically sound manner in full compliance with applicable regulatory standards.

1.3 TAC GOALS

The following goals, developed from the vision and mission statements are organized within a framework reflecting the various Project dimensions that must be addressed.

1.3.1 Management

To meet the client's overall expectations:

- Provide top quality in a prompt, cost effective manner.
- Create a working environment that encourages innovation and a free exchange of ideas, opinions, and concerns among management, employees, and the client.

1.3.2 Environment, safety, and health

To conduct activities in an environmentally sound and safe manner to minimize risks to the environment and to minimize worker and public exposure to radiological and nonradiological hazards:

- Comply with the letter and spirit of all applicable environment, safety, and health (ES&H) statutes, regulations, and standards, and strive for continuous improvement beyond minimum compliance.
- Provide clients with sound ES&H support by determining the applicability of ES&H requirements and identifying options for complying with applicable requirements in a prompt and efficient manner.

1.3.3 Quality

To achieve total customer satisfaction by striving for excellence in all endeavors:

- Instill total commitment by both management and employees to top-quality products and services.
- Meet or exceed client expectations by emphasizing continuous improvement of all TAC processes.

1.3.4 Technical

To conduct all technical support activities in a timely, effective manner in compliance with regulatory requirements:

- Commit to the technical problem-solving process.
- Drive all decisions through truth and thoughtful judgment.
- Use an employer interdisciplinary approach to ensure integration of natural and social sciences and visual and written arts in planning and implementing activities that affect the environment.

1.3.5 Communications

To secure informed public support for the DOE's environmental restoration mission by ensuring that all stakeholders have access to timely, factual information about the affected Project, its mission, goals, and progress:

- Ensure participation of the affected public in the decision-making process involving critical Project issues.
- Request and consider public input before making important decisions.
- Increase employee knowledge and motivation through the effective use of internal information and personal recognition.
- Create a working environment that encourages a free exchange of ideas, opinions, and concerns among employees, management, and the client.

1.3.6 People

To provide all employees a safe, comfortable, and pleasant working environment:

- Ensure that each has the tools necessary to perform the job effectively.
- Ensure that all employees enhance their professional development through participation in training courses, seminars, symposiums, and workshops and through membership in professional societies.
- Encourage employee career development by recognizing individual performance and potential, providing challenging assignments, and promoting top performers.

2.0 ORGANIZATION AND FUNCTIONS

2.1 TEAMING PARTNERS

JEG and its subcontractors (RFW, G&M, and SHB Agra) provide the resources and expertise to accomplish the TAC's responsibilities. The TAC team is a fully integrated and dedicated project team. Personnel assigned to the UMTRA Project report up through the Project's functional management structure; each employee's respective company handles salary administration, employee performance reviews, and employee benefits. Regardless of corporate affiliation, input is obtained from the employee's UMTRA Project functional manager for employee performance reviews.

Table 2.1 illustrates the TAC team's resources and strengths. The following paragraphs provide additional information on each teaming partner's strengths and contribution to the UMTRA Project.

2.1.1 Jacobs Engineering Group Inc.

JEG, headquartered in Pasadena, California, is a full-service architect-engineering firm capable of providing the complete spectrum of project implementation services including environmental studies, feasibility studies and permitting assistance, engineering and design, procurement, construction, and operations and maintenance. JEG has 20 offices worldwide, housing more than 4500 professional, technical, scientific, and support personnel and 8000 field construction employees.

JEG provides overall project management and support and a variety of other services, including hazardous waste field investigations and feasibility studies, remedial action plans, bioremediation, waste minimization assessments, environmental audit and compliance plans, air quality permits, wastewater discharge permits, air and water pollution control system design.

2.1.2 Roy F. Weston, Inc.

RFW, headquartered in West Chester, Pennsylvania, is a multidisciplinary consulting firm engaged in all aspects of environmental management, including environmental engineering and groundwater remediation services. RFW maintains a staff of more than 2800 professionals in 40 offices nationwide under a variety of disciplines, including chemical, civil, and environmental engineering, biological sciences, computer technology, construction management, ecology, fluid mechanics, geosciences, hydrology, computer simulation and modeling, toxicology, industrial hygiene, health physics, and systems engineering.

RFW supports JEG in overall project and technical management. RFW also adds to the team its extensive experience in groundwater contamination investigation and modeling, *in situ* treatment, and groundwater remediation.

Table 2.1 Teaming partner resources and strengths

Jacobs Engineering Group Inc.	Roy F. Weston, Inc.	Geraghty & Miller, Inc.	Sargent, Hauskins & Beckwith Agra, Inc.
<ul style="list-style-type: none"> • Program management • Project controls • Quality assurance/quality control • Health and safety • Regulatory compliance • Risk assessment • Cost/benefit optimization • Safety analysis • Environmental documentation • Geotechnical engineering • Technical management • Process systems 	<ul style="list-style-type: none"> • Groundwater remediation • Liquid waste treatment • Mixed waste feasibility development • Hazardous waste treatment (remediation) • Process systems • Health and safety • Risk assessment • Regulatory compliance • Environmental documentation • Program management • Technical management • Project controls 	<ul style="list-style-type: none"> • Groundwater remediation engineering • Groundwater protection/restoration • Regulatory analysis/compliance • Specialty groups—modeling risk assessment, air quality, geophysics • Technical management 	<ul style="list-style-type: none"> • Geotechnical engineering • Geology • Site characterization • Hydrogeology/modeling • Geomorphic assessments • Surface facility remediation • Seismic evaluations • Aquifer restoration • Risk assessment • Civil engineering

2.1.3 Geraghty & Miller, Inc.

G&M, headquartered in Plainview, New York, is a full-service environmental firm specializing in protecting, investigating, assessing, and remediating groundwater. G&M currently maintains a presence in 43 cities throughout the United States with a staff of more than 900 professional, technical, and support personnel.

G&M provides expertise in groundwater contamination investigations, remedial investigation feasibility studies, groundwater remediation, contamination assessment, and support negotiations with Federal and state regulatory agencies.

2.1.4 Sargent, Hauskins & Beckwith Agra, Inc.

SHB Agra is a progressive and innovative, environmental, geotechnical, and materials engineering organization headquartered in Phoenix, Arizona. SHB Agra maintains a staff of more than 280 employees consisting of registered professional engineers, environmental specialists, risk assessors, geologists, hydrogeologists, engineering geophysicists, laboratory and field technicians, drillers, and support personnel at 12 offices in the western United States and Mexico. SHB Agra's contributions are in the areas of groundwater hydrology, geotechnical engineering, risk assessment, and field technical support.

2.2 PROJECT ORGANIZATION STRUCTURE

The TAC has developed a streamlined, flexible, and responsive organization (Figure 2.1) to meet the needs of both surface and groundwater remedial action projects. Key technical and management personnel have been assigned to the UMTRA Project from each of the teaming partners.

A matrix management structure provides support to the surface and groundwater projects. Required technical personnel from respective functional departments are assigned on a site-by-site basis, reporting to site managers, to provide the expertise to complete assigned site-related activities.

The TAC organizational structure reflects the multidisciplinary nature of its assigned scope of work. The following sections describe in more detail each TAC department's mission, internal organization, and responsibilities.

2.3 PROJECT MANAGEMENT

The TAC management structure mirrors that of the DOE Project Office and includes the TAC Project Manager (PM), Deputy Project Manager (DPM), and three assistant project managers (APM). The management staff is continually aware of the needs and requests of the DOE, states and tribes, other cooperating agencies, local governments, the U.S. Congress, and other project stakeholders. Through this continuing assessment of UMTRA Project

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Figure 2.1 Organization chart

requirements, both short- and long-term guidance is provided to the functional departments.

2.3.1 Project Manager

The TAC PM develops the TAC's mission, vision, and policy and conveys them to all staff through regular meetings, face-to-face discussions, and other visible communication tools. Endorsing DOE ES&H and ensuring compliance with ES&H laws and regulations are top priorities. The PM must attempt to inspire by example and continually apply quality management practices.

The TAC PM develops strategies for Project planning and problem solving, and ensures the establishment and effective use of adequate systems, controls, baselines, and other management tools. The PM also must ensure that operations comply with applicable statutes, regulations, and standards to minimize risks to the environment and public health.

Other roles of the TAC PM are as follows:

- Planning and implementing constructive improvements in operations to better serve the DOE's needs.
- Maintaining an appropriate and effective TAC organizational structure.
- Fostering, encouraging, and facilitating effective client communications at all levels.
- Measuring client satisfaction and conveying same to TAC staff with appropriate follow-up.
- Ensuring availability of adequate staff, appropriately trained to meet Project needs.
- Maintaining staff morale and commitment to quality throughout the Project.

2.3.2 Deputy Project Manager

A DPM assists the PM to ensure management continuity. The DPM serves in the PM's absence, assuming the same roles and responsibilities described above. The DPM also chairs the TAC Quality Council (refer to Section 6.4) and leads implementation of quality improvement programs, which are integrated into TAC operations. Other DPM responsibilities include the following:

- Serving as the liaison between the TAC and both the U.S. Nuclear Regulatory Commission (NRC) and the Colorado Department of Health.
- Communicating with and supporting DOE and Remedial Action Contractor (RAC) DPMs.

- Coordinating the initiation, TAC and DOE review, and presentation of UMTRA Project technical papers.
- Coordinating the development of special studies with TAC and DOE review and ensuring meeting special studies goals.
- Coordinating UMTRA-wide career development (across teaming partners).
- Initiating and coordinating independent technical reviews with appropriate follow-up for corrective actions.
- Coordinating program briefing preparations.

2.3.3 Assistant Project Manager for Site Management

The APM for Site Management (APM-SM) ensures accomplishment of site-specific objectives including satisfying client deliverable requirements, project and site planning, and site cost/schedule performance. The APM-SM also is responsible for TAC support to the Vicinity Property Program, real estate acquisition, and site licensing coordination. The APM-SM has the following specific duties:

- Supervising staff to meet organizational assignments, providing technical and management support and expertise to the DOE, and developing strong personal working relationships with DOE and RAC counterparts.
- Endorsing the DOE's policy to give top priority to ES&H issues and enforcing complete compliance with ES&H laws and regulations.
- Ensuring development and application of adequate and appropriate systems, controls, baselines, and other management tools.
- Ensuring that in-house and field operations comply with applicable statutes, regulations, and standards to minimize risks to the environment and public health.
- Motivating staff to use best management practices and strive for continuous quality improvement and integrating quality initiatives into normal operations so that all operations include best management practices.
- Ensuring that integrated, time-phased budgets for each Project task include labor hours, travel, and subcontract requirements.
- Coordinating with other APMs, DPMs, and PMs to maintain overall Project priorities and ensuring complete integration of site management, the various technical disciplines, health and safety, project controls, and support functions.

- Ensuring that appropriate records for all sites are gathered, reviewed, and filed in an appropriate manner for future use.
- Developing succession plans and coaching staff members to use succession resources as they further their careers.
- Identifying, encouraging, and implementing new approaches, innovations, and cost savings.
- Functioning as the control account manager for each assigned account: planning, scheduling, and budgeting work; directing work scheduled; measuring and evaluating cost, schedule, and technical performance; identifying impacts to critical paths; maintaining up-to-date estimates to completion; and informing the PM and project controls manager promptly of cost and schedule variances.

2.3.4 Assistant Project Manager for Technical Services

The APM for Technical Services (APM-TS) provides technical leadership for planning, staffing, and executing TAC activities. The APM-TS has the following specific duties:

- Supervising technical staff to meet organizational assignments, providing technical and management support and expertise to DOE and TAC management, and maintaining effective working relationships with DOE and RAC counterparts. Maintaining technical services staffing with knowledge and expertise in required disciplines to support and achieve UMTRA Project objectives.
- Endorsing and promoting the DOE's policy to give ES&H issues top priority and ensuring complete compliance with ES&H laws, regulations, and orders. Ensuring compliance of in-house and field operations with applicable statutes, regulations, and standards to minimize risks to the environment and public health.
- Coordinating with other project management staff to maintain overall UMTRA Project priorities and ensure smooth integration of technical services, site management, health and safety, and project controls.
- Developing staff succession plans and serving as staff mentor to use succession and required training resources as staff members pursue their career development goals. Actively promoting the development of staff managerial skills and seeking opportunities for staff members to be given responsibility and commensurate authority to lead the accomplishment of specified tasks.

- Identifying, encouraging, and implementing innovative and cost-saving approaches to UMTRA Project challenges. Motivating staff to use best management practices and strive for continuous quality improvement and integrating quality initiatives into normal operations.
- Performing duties of the control account manager for assigned accounts: planning, scheduling, and budgeting work; directing work scheduled; measuring and evaluating cost, schedule, and technical performance; informing the PM of cost and schedule variances promptly.
- Coordinating and directing the technical managers in their preparation of integrated, time-phased budgets for each assigned task. Providing requested support in preparing Federal budgets, 5-year plans, and site-specific plans, baseline budgets, and independent cost estimate (ICE) reviews.
- Facilitating communication between technical managers and site managers to ensure adequate support for site technical, schedule, and budget objectives consistent with overall UMTRA Project priorities conveyed by project management.
- Ensuring that the technical quality of the work produced by technical services staff meets the high standards of the UMTRA Project by conducting the necessary mentoring, peer review, and technical review of documents and presentations. Serving as a member of the Presentations Evaluation and Review Committee.

2.3.5 Assistant Project Manager for Management Services

The APM for Management Services (APM-MS) develops, maintains, and operates the formal planning, performance measurement, and reporting systems used by the DOE and the TAC. The APM-MS also provides computer systems support to the DOE Project Office and all TAC personnel. The APM-MS has the following specific duties:

- Supervising staff to meet organizational assignments and providing technical and management support and expertise to the DOE.
- Developing strong personal working relationships with DOE and RAC counterparts.
- Endorsing the DOE's policy to give ES&H issues top priority and enforcing complete compliance with ES&H laws and regulations.
- Conducting all operations and motivating staff to comply with best management practices and total quality directives. Developing flow charts for work functions, including required quality activities.

- Developing succession plans and mentoring staff to achieve needed succession resources while furthering career development goals.
- Identifying and implementing new approaches, innovations, and cost savings.
- Ensuring the development and application of adequate and appropriate management systems and controls, baselines, and other management tools.
- Ensuring the inclusion of manhours, travel, and subcontract requirements for integrated, time-phased budgets for each UMTRA Project task.
- Informing the PM, DPM, and other APMs in a timely manner of cost and schedule variances.
- Coordinating with other APMs and the technical managers to ensure complete integration of site management, engineering, hydrology, ES&H, project controls, and support functions.
- Maintaining system documentation and providing the TAC staff with earned value planning, budgeting, performance reporting systems and support, critical path method (CPM) scheduling, periodic contract reports, and integrated budget/schedule projections. Administering the cost reduction program, maintaining systems documentation, and developing new and innovative methods, systems, and practices.
- Coordinating comprehensive programmatic support to the UMTRA Project Office in preparing Federal budgets, 5-year plans, site-specific plans, baseline budgets, and ICE reviews; performance reporting, project scheduling, change controlling, estimating, and operating the cost reduction program.
- Coordinating the provision of hardware, software, training, planning, local area network (LAN) administration, and custom software development services for all TAC and UMTRA Project Office operations.

2.4 SITE MANAGEMENT

Mission

The site management organization provides management focus, coordination, and oversight for planning and executing all site-related activities in compliance with applicable requirements and supports the DOE site managers' line management role. To achieve this, the TAC site managers serve as project managers for assigned sites supporting a DOE site manager counterpart. The APM-SM serves as a manager of projects and supports the DOE's Engineering and Construction Group Manager; the other assigned specialists support TAC and DOE site managers.

Organization

The site managers and technical specialists in the site management organization report directly to the APM-SM who, in turn, reports to the PM.

Responsibilities

Specific responsibilities of the site management organization are as follows:

- Developing and maintaining site-specific plans that support the DOE's technical, cost, and schedule guidance, consistent with established UMTRA Project priorities.
- Supporting the development of overall project plans and approaches, ensuring appropriate consideration of site-specific factors.
- Coordinating with TAC technical managers and support managers to obtain adequate resources to accomplish site objectives.
- Directing site activities to ensure effective performance and integration of all technical, EH&S, regulatory, public information, and quality assurance efforts.
- Serving as the TAC focal point for site-related communications, both internal and external.
- Ensuring the establishment and maintenance of adequate and effective management systems and communications.
- Reviewing and approving site-specific reports, technical documents, and plans to ensure that applicable technical, political, cultural, and historical issues and perspectives have been appropriately addressed.
- Identifying risks to technical, cost, and schedule objectives; performing variance analyses and formulating corrective action plans when performance deviates significantly from plan; developing periodic updates to cost and schedule forecasts; and providing timely reporting of work status and issues to TAC management and the DOE.
- Maintaining a focused effort to obtain NRC licensing of completed sites by identifying and helping to resolve programmatic issues, developing guidance and plans, and supporting individual site managers in achieving licensing for their sites.
- Assisting the DOE in real estate acquisition activities by identifying requirements, developing plans, supporting and coordinating execution, and reporting the status of ongoing activities.

- Striving for continuous quality improvement in all TAC operations by seeking better and more cost-effective approaches to accomplish Project objectives.

2.5 TECHNICAL SERVICES

2.5.1 Characterization and Remediation Department

Mission

The Characterization and Remediation Department provides technical expertise in engineering (geotechnical, civil, and process), hydrology, and health physics. The department is the focal point for site characterization and remediation strategies development for the groundwater project. The department also develops groundwater protection strategies and conceptual designs and performs design reviews for surface activities. Department personnel conduct special studies of pertinent technical issues and develop technical position papers at the UMTRA Project Office's request.

Organization

The Characterization and Remediation Department encompasses individuals with engineering, hydrology, and health physics backgrounds. All personnel report directly to the department manager for administrative matters. Staff members might lead individual efforts as either a task leader or senior reviewer.

Department personnel are assigned to site teams as part of the TAC's matrix management approach. For site-specific activities, the appropriate site manager gives personnel day-to-day direction.

Responsibilities

Departmental manager—The departmental manager is responsible for

- Ensuring that staff members know the budget and schedule for their assigned tasks.
- Ensuring that documents are adequately reviewed before leaving the department.
- Coordinating technical activities with the project engineer and the APM-TS to ensure that programmatic technical issues are addressed.

Senior technical reviewers—Senior technical reviewers are appointed for specific documents. They are not responsible for preparing the document. They are responsible for

- Serving as a mentor to the team.
- Ensuring a document's technical accuracy.

Site team members—Typically, each site is assigned an engineer, hydrologist, and health physicist. These individuals are responsible for

- Maintaining appropriate site technical files.
- Developing site documents.
- Obtaining assistance from other staff members, when needed.

2.5.2 Data Management and Assessment Department

Mission

The Data Management and Assessment Department integrates the disciplines of risk assessment, geochemistry, data management, statistics, and water sampling to generate defensible environmental data, technically sound data interpretations, and interpretative documents, including risk assessments. These activities help select surface and groundwater remedies to protect human health and the environment.

Organization

The Data Management and Assessment Department is divided into five groups (risk assessment, geochemistry, water sampling, data management, and statistics). Each group has a leader who reports to the department's technical manager.

Responsibilities

Experienced toxicologists, geochemists, analytical chemists, ecologists, field geologists, and mathematicians are responsible for a wide variety of activities, including the following:

- Researching and producing site-specific risk assessments.
- Ecological sampling in conjunction with the Regulatory Compliance Department.
- Coordinating the preparation of water sampling and analysis plans (WSAP) in conjunction with the Engineering and Design Department.
- Preparing reports covering geochemical interpretation of ore materials, tailings, or water quality.
- Performing geochemical experiments to support UMTRA Project needs.
- Operating and developing quality assurance (QA) protocols associated with the Software Program for Environmental Analyses and Reporting (SPEAR) water quality data base.

- Developing the TAC technical data administration plan.
- Developing the statement of work for subcontract analytical services.
- Conducting audits and performance evaluations of subcontract laboratories.
- Validating data packages when delivered by subcontract laboratories.
- Water sampling schedule planning for 6 to 12 months in the future and preparing work orders prior to sampling.
- Procuring water samples from the field in accordance with Project Standard Operating Procedures (SOP).
- Completing field documentation, including chain of custody for field sampling activities.
- Evaluating the statistical methods programmed into SPEAR and recommending changes, additions, and upgrades.
- Determining ranges of input parameters and operating risk assessment models.

2.5.3 Publications Services Department

Mission

The Publications Services Department produces and distributes all TAC documents and presentation materials for the UMTRA Project. These publications comply with applicable DOE Orders, Federal regulations, and project contractual requirements (see Section 6.0), resulting in high-quality technical documents and presentation materials. The Publications Services Department is also responsible for capturing, classifying, storing, safeguarding, retrieving, inventorying, scheduling, and disposing of all documents produced or used on the UMTRA Project. The UMTRA Project Document Control Center (UPDCC) performs this functions.

Organization

The Publications Services Department has five sections (technical editing, word processing, graphics/mapping, production, and the UPDCC).

Technical editing responsibilities

The technical editing staff is responsible for UMTRA Project document preparation and production, from rough draft to camera-ready copy. Specifically, the technical editing staff is responsible for

- Performing format and substantive edits on all critical Project documents prior to delivery to the DOE.
- Coordinating document preparation and production activities with the authors, document coordinator, word processing (in-house and vendors), and graphics/mapping and production leads to ensure prompt completion of the publication process and the highest quality product possible.
- Ensuring that each document meets the client's standards and requirements for format, style, and quality.

Word processing responsibilities

Under the direction of assigned technical editors, the word processing staff is responsible for

- End-to-end text processing.
- Creating backup disks of all required versions of document files and labeling and storing those disk files in locked file cabinets to protect them from destruction or data loss.

Graphics/mapping responsibilities

The graphics/mapping staff is responsible for

- Producing illustrations, maps, drawings, some photographs, covers, and spines for UMTRA technical documents.
- Preparing materials, including transparencies, slides, and posters, for UMTRA Project presentations.
- Coordinating with the authors and document coordinators to establish the purpose of each graphic representation and deciding the best medium for each illustration/map.
- Coordinating vendor production when needed for oversized plates, some color graphics, and the like.
- Maintaining files of computer-generated graphics and original hand-drawn illustrations.

Production Responsibilities

Under the direction of the assigned technical editor, the production staff is responsible for

- Using the camera-ready originals to reproduce, assemble, and bind the required number of copies for distribution to the client.
- Checking the final appearance of the document (*e.g.*, copies are clean, properly oriented, and properly assembled).

UMTRA Project Document Control Center Responsibilities

The UPDCC is responsible for

- Controlling all UMTRA Project documents, including technical reports, correspondence, videos, field and laboratory data, vicinity property files, aerial photographs, and design documents.
- Acquiring and maintaining reference materials in support of UMTRA Project research, including monographs, periodicals, and topographic and other maps.
- Ensuring compliance with the 12 DOE Orders applicable to DOE Record Centers; with the Task Agreement included in DOE/Albuquerque Field Office (AL) Contract No. DE-AC0491AL62350; with the UMTRA Project Documents Control System Manual and all applicable procedures in the Albuquerque Operations Manual (AOM); and with Titles 36 and 41 of the U.S. Code of Federal Regulations.

2.5.4 Regulatory Compliance Department

Mission

The Regulatory Compliance Department ensures that the UMTRA Project is in compliance with applicable DOE, and other Federal, state, and local environmental regulations and guidance, from the planning through the implementation and licensing phases of remedial action. This is accomplished through research, field activities, analyses, and document preparation to support and verify compliance. The Regulatory Compliance Department performs the following activities and provides technical support to ensure that compliance is achieved throughout all UMTRA Project phases:

Organization

The Regulatory Compliance Department is organized into the following areas: environmental compliance, regulatory compliance, permitting, access, licensing support, surveillance and auditing.

Responsibilities

- Conducting research, surveys, and analyses for preparation of National Environmental Policy Act (NEPA) documentation during Project planning.

- Evaluating the applicability of environmental laws and regulations other than NEPA.
- Planning and integrating permit and access activities for timely implementation of UMTRA Project site activities.
- Performing health and safety, radiological, and environmental surveillance and audits at UMTRA Project sites during the implementation of remedial action.
- Providing technical staff support to site licensing and long-term surveillance and maintenance planning.
- Developing regulatory compliance procedures.
- Coordinating the appropriate implementation of environmental compliance issues to ensure that DOE policy and guidance are applied promptly and consistently on UMTRA Project activities and in the work place (ergonomics).

2.5.5 Safety Advancement Field Effort Program

Mission

The Safety Advancement Field Effort (SAFE) Program provides the DOE UMTRA Project Office a continuous and ongoing oversight presence at UMTRA Project sites undergoing remediation. SAFE personnel provide ES&H evaluations of UMTRA Project site-specific conditions and immediately discuss and resolve any situations or observations regarding applicable ES&H regulations, standards, or DOE orders, in order to ensure the health and safety of Project site personnel and the public and protection of the environment.

SAFE personnel are not connected to any ES&H audit function and are not to be viewed as conducting an ES&H audit of any kind. The SAFE Program should be viewed as a cooperative effort between the DOE and its contractors to identify and resolve any ES&H situations or observations, with the intent of eliminating accidents, injuries, down time, and the human suffering and cost associated with these items. The DOE SAFE Program's ES&H goal is to achieve its mission while meeting or exceeding all Federal, state, and local requirements and DOE Orders.

Organization

The nature of the SAFE Program does not lend itself to classical organizational structure. Rather, the program is an ES&H oversight organization and functions independently of other organizations to ensure that ES&H standards and regulations and DOE requirements for all UMTRA Project sites are not overridden by operational concerns.

Responsibilities

- Reading and becoming familiar with all UMTRA Project site-specific procedures in order to have a good understanding of site operations.
- Acting as another set of eyes and ears for the DOE Project Office on UMTRA Project sites.
- Conducting ES&H training for Project site personnel with prior approval from the DOE and the RAC.
- Communicating ES&H situations and observations and good ES&H practices at the various sites and providing a broad perspective in ES&H evaluation.
- Making regular (daily or weekly, as appropriate) summary reports of field activities and observations.
- Discussing ES&H observations and situations with the RAC through on-site operational readiness reviews.
- Helping determine whether an imminent danger situation exists at Project sites and notifying the RAC of the situation so that the RAC can take immediate action to curtail or suspend the operation and mitigate the danger.
- Curtailing or suspending operations without RAC consent if any delay could cause death or serious harm to Project site workers or the public.
- Participating with the UMTRA Project ES&H Committee to assist in the development of programs, procedures, standards, or regulations that may be necessary to ensure the health and safety of Project workers and the general public and the protection of the environment.

2.5.6 Regulatory Oversight and Compliance Support

Mission

The Regulatory Oversight and Compliance Support (ROCS) Department provides the DOE UMTRA Project Office with technical resource support to help administer and coordinate programmatic ES&H activities. The department is staffed with experienced environmental scientists, health physicists, and occupational safety and health specialists to ensure adequate coverage of the Project's ES&H needs.

Organization

The ROCS Department directly supports the DOE ES&H Manager. The ROCS Department staff is also available to assist other DOE Project Office staff with ES&H matters upon coordination with the DOE ES&H Manager.

Responsibilities

- Tracking and reviewing ES&H regulations and DOE orders.
- Maintaining the UMTRA Project ES&H regulatory operating envelope data base, including preparing site-specific requirements identification documents and system identification reports and performing applicability analyses and compliance assessments for regulatory criteria that affect the Project.
- Performing internal programmatic ES&H appraisals.
- Evaluating contractor responses to ES&H inquiries and, if necessary, making recommendations for further action.
- Developing and implementing programmatic ES&H planning and guidance documents.
- Preparing and conducting ES&H Committee meetings and coordinating and tracking committee actions.
- Preparing for and responding to outside ES&H audits, surveillances, and assessments.

2.6 PUBLIC AFFAIRS

Mission

The mission of the Public Affairs Department is to provide professional communications support to the DOE UMTRA Project Office and its supporting contractors. This includes public affairs planning and counsel, community relations, public participation, media relations, employee information, and communications training.

Organization

The Public Affairs Department reports directly to the TAC PM and comprises a manager, a senior public affairs specialist, three public affairs specialists, and a secretary. The department manager provides overall guidance and direction for the UMTRA public affairs program; specific support is provided by individual public affairs specialists who provide full service support for their assigned UMTRA sites; and special event/projects are assigned to members of the department on a case-by-case basis.

Responsibilities

The responsibilities of the Public Affairs Department include

- Reviewing and updating, as required, the UMTRA Public Information and Public Participation Plans.
- Preparing individual communications plans for major project events.
- Providing public affairs advice and counsel.
- Keeping stakeholders apprised of project goals and progress through regular mailings of factual information.
- Planning, coordinating, and supporting the public participation and involvement program for the UMTRA Project.
- Assisting DOE site managers and other key Project officials to prepare for and effectively conduct public meetings.
- Reviewing and evaluating the sufficiency of published project public information materials; recommending, as appropriate, revisions to existing materials and the preparation of new materials.
- Preparing fact sheets, news releases, information brochures, video tapes, and other products for distribution to both the news media and members of the public.
- Assisting DOE spokespersons in conducting telephone and in-person media interviews.
- Assisting the Project Office in answering media inquiries.
- Keeping DOE and TAC employees informed about the Project and the accomplishments of its people.
- Providing formal communications training to key DOE Project Office, TAC, and RAC personnel.
- Planning and executing public affairs programs designed specifically for site communities on tribal lands; developing information materials, as appropriate, to address the cultural needs of Indian publics.
- Providing timely response to written and telephone requests for Project information.

- Identifying public stakeholder concerns and issues so they can be addressed in Project decisions.
- Preparing speeches and briefings.

2.7 CONTRACT ADMINISTRATION AND PROCUREMENT

Mission

The mission of the Contracts Department is to ensure the TAC has all the supplies and specialized support necessary to perform the contract. The Department operates through a DOE-approved purchasing system that is fully compliant with the requirements of the Federal Acquisition Regulations (FAR), as implemented by the DOE Acquisition Regulations (DEAR). The Department receives requisitions from various members of the TAC technical staff and makes the necessary purchases through small purchase actions, purchase orders, or subcontracts as appropriate for the size and complexity of the requirement. The Department ensures that the purchases are appropriate for the contract and the costs incurred are allowable under the guidance in FAR.

Organization

The Contracts Department consists of a manager, buyers, and contract administrators. The Department reports directly to the JEG corporate headquarters and indirectly to the manager of the JEG Albuquerque Operations office. Support to the TAC is provided through a matrix organization that permits staff to be assigned as necessary to meet the work load.

Responsibilities

- Administering the prime contract.
- Preparing and submitting scheduled reports (Semi-Annual Report of Plant and Capital Equipment; Subcontracting Report for Individual Contracts; Summary Subcontract Report; and Labor Escalation Rate Report).
- Providing counsel and guidance to PM and staff with regard to contractual matters or cost allowability issues.
- Monitoring cost expenditures and providing funding notification to the Contracting Officer pursuant to the "Limitation of Cost" clause.
- Purchasing all supplies and equipment needed in support of the Project.

- Soliciting, negotiating, awarding, monitoring, and closing out all subcontracts for supplies and services needed in support of the contract. This process includes developing source lists, preparing requests for proposals and quotations, reviewing proposals for responsiveness and responsibility, analyzing cost and price, preparing negotiation memorandums, and preparing the subcontract documents.
- Preparing documentation for Contracting Officer consent to various classes of subcontracts.
- Processing delivery orders under indefinite quantity subcontracts awarded in support of the project.
- Monitoring cost performance of teaming subcontractors through review of charges invoiced.
- Continuing award process for new soil and water analysis subcontracts.
- Providing the Accounting Department with subcontract commitment data.
- Processing invoices for all subcontracts.
- Assisting the Accounting Department with invoice and payment problems.
- Providing purchasing and subcontracting training to TAC staff.

2.8 QUALITY ASSURANCE

Mission

The TAC is committed to providing the DOE with quality products and services. In keeping with this commitment, the TAC management has identified two missions that have been integrated into the Project in an interdisciplinary manner. These missions are QA support to the DOE in the form of audits, FAR reviews, etc., and quality improvements of the TAC operations in the form of self-assessments, Quality Council activities, quality improvement suggestions (QIS), etc. The TAC QA Department is responsible for developing and managing a QA Program that integrates these missions into planned and controlled Project activities and for assisting in the monitoring and implementation of these activities. The TAC Total Quality Management (TQM) ethic encourages all personnel, management and staff, to accept the responsibility for the individual and collective quality of work on the project as well as implementation and compliance with stated mission and goals for the Project. Our UMTRA philosophy focuses on prevention through leadership and organizational commitment.

Organization

Operational independence of the QA function is provided by a reporting structure that requires the QA manager to report to the JEG Albuquerque Operations Manager and to a senior JEG executive rather than the TAC PM. The QA Department comprises a QA manager, two senior QA specialists, a quality administrator, a TQM coordinator, and a secretary.

Responsibilities

The QA personnel interface with all levels of management, supervisors, and staff in the implementation, overview, evaluation, and feedback associated with the QA program. In developing and managing the program, the QA Department has the following responsibilities:

- Developing and maintaining the TAC QA Program Plan (QAPP) and associated procedures.
- Establishing and implementing a QA orientation and training program.
- Reviewing procurement documents to ensure that they contain the applicable quality requirements.
- Reviewing SOPs.
- Reviewing remedial action plans (RAP) and remedial action inspection plans.
- Reviewing nonconformances.
- Participating in the implementation of corrective actions.
- Establishing and implementing the QA audit/surveillance programs.
- Representing Project QA matters, including resolution of quality problems.
- Evaluating quality results and performing trend analyses.
- Reporting to management on the adequacy of the QA program.
- Providing QA-related support to the UMTRA Project Office QA Manager by participating in the development of the UMTRA Project Office QAPP and conducting QA audits or surveillances of the RAC for the UMTRA Project Office.

3.0 TECHNICAL APPROACH—UMTRA SURFACE PROJECT

The Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978, Public Law 95-604 (PL 95-604), grants the Secretary of Energy the authority and responsibility to perform such actions as are necessary to minimize radiation health hazards and other environmental hazards caused by inactive uranium mill sites. These surface cleanup actions are to be performed in compliance with the U.S. Environmental Protection Agency (EPA) standards (40 CFR 192), which became final on March 7, 1983.

The strategy that will be followed to achieve compliance with standards will consider the ultimate objectives of stabilizing and isolating the tailings both from forces of nature and misappropriation by man. The stabilized disposal cell will be covered in such a way that it both prevents radon escape and the infiltration of precipitation into the tailings and subsoils. The designs will meet the design standard of at least 200-year stability and strive to meet a 1000-year stability goal. The TAC will be involved in the process at various stages from start to finish. It will direct the site characterization, prepare a site conceptual remedial design, evaluate the RAC designs at several stages of development, and provide assistance to the DOE in assessing RAC adherence to the final RAP during construction by conducting technical and QA audits and oversight.

The *Technical Approach Document* (TAD), Revision II (DOE, 1989) describes the general technical approaches and design criteria adopted by the DOE to implement RAPs and final designs that comply with EPA standards.

The sections of the TAD cover the following general topics:

- 2.0 Regulatory compliance and design considerations.
- 3.0 Disposal cell design approach.
- 4.0 Cover design.
- 5.0 Geological stability.
- 6.0 Geotechnical stability.
- 7.0 Radon attenuation and site remediation.
- 8.0 Water resources protection.
- 9.0 Nonradiological hazardous constituents in soils.
- 10.0 Alternate site selection.
- 11.0 Site design criteria.

The NRC has prepared a technical position document dealing with standard format, content, and documentation for remedial action selection (NRC, 1989), which describes factors to be considered by the NRC in approving a RAP. The TAD attempts to follow the format of the NRC document in order to facilitate joint use of the two documents. Another document that is used as a logistical guide to the remedial action process is the UMTRA Project Site Management Manual. This manual summarizes the organizational interfaces and the technical approach used to manage the planning, design development, NEPA compliance, engineering, and remedial actions required to stabilize and control the tailings. The manual describes the Project's objectives, participant's roles and responsibilities, technical approach for accomplishing the objectives, and planning and managerial controls to be used in performing the site work.

3.1 PLANNING AND DESIGN DEVELOPMENT

The TAC provides assistance to the DOE in moving designated processing sites from the initial stage of assessing the scope of the required remedial action to determining the RAC's subcontractor bid packages are sound bases for actually performing the remedial action.

3.1.1 Site characterization

The TAC characterizes the processing sites and the disposal sites (if different from the processing site) and performs additional site characterization if and when the need arises. Site characterization activities are performed by the TAC or by subcontractors. When subcontractors are involved, the TAC compiles scopes of work, solicits bids, awards and manages site characterization contracts, and gathers and collates the resulting data.

The TAC evaluates all site characterization data. QA checks are completed and data are reviewed for correctness. Data are then collated and interpreted by expert geologists, geotechnical engineers, health physicists, surface water hydrologists, groundwater specialists, and soils, vegetation, and biological specialists. Site characterization data are included in the following reports:

- Draft and final RAPs.
- Environmental Impact Statements (EIS) and Environmental Assessments (EA).
- Design calculations.
- Site characterization reports (which may be stand-alone documents or appendixes to RAPs or design calculations).

3.1.2 Remedial action plans

The RAP describes in detail the site, the disposal cell design, and the groundwater compliance strategy for meeting EPA standards at each UMTRA Project site.

A draft, a preliminary final, and a final RAP are produced for each site. There are significant differences between them. The draft RAP describes the conceptual design of the disposal cell formulated by the TAC. The final RAP contains the detailed final design compiled by the RAC and provides the technical basis for the concurrence of the NRC in the remedial action. Both the draft and final RAP serve to inform the affected state or tribe of the DOE's intended remedial action for the site. The state or tribe and the NRC comment on the draft RAP and the preliminary final RAP.

The contents of each RAP are adjusted to reflect site-specific factors. RAPs will be formatted according to the NRC's staff technical position (STP) paper entitled: *Standard Format and Content for Documentation of Remedial Action Selection at Title I Uranium Mill Tailings Sites* (NRC, 1989). The STP paper identifies the specific Project information that should be presented in the RAP.

3.1.3 Design review

The TAC reviews the remedial action design documents submitted to the DOE by the RAC and other contractors. The TAC review is for completeness, adherence to good design practices, compliance with applicable standards and design criteria, and consistency with DOE-approved concept documents. The results of each TAC review are submitted to the DOE in the form of a site design review report. The TAC also provides assistance, as directed by the DOE Project Office, for conducting in-progress design reviews.

The TAC provides design support during construction to assist the DOE and the RAC in dealing with construction conditions that have design implications and will continue design support as the need arises.

The TAC reviews radiological and engineering assessments (REA) and detailed designs for vicinity properties. The results of each TAC review are submitted to the DOE in the form of a vicinity property engineering review report (VPERR), including markups of reproducible drawings, as appropriate.

3.1.4 Bid package reviews

The TAC assists the DOE in the review of the specifications and drawings to be included in the RAC's remedial action bid documents and continues these reviews as necessary. The TAC also assists the DOE in the review of final specifications and drawings for vicinity property bid packages prepared by the RAC.

Each bid package provided by the DOE Project Office is reviewed for completeness and general compliance with Federal and DOE procurement regulations, health and safety requirements, QA requirements, and consistency with the approved design. The results of each TAC review are provided in the form of a bid package review report.

3.2 ENVIRONMENT, HEALTH, AND SAFETY

The TAC is fully committed to worker safety and environmental management in all the activities it performs. These activities will be conducted in a environmentally sound and safe manner to minimize the risks to the environment, workers, and the public. Furthermore, they will be conducted in compliance with the letter and spirit of all applicable ES&H statutes, regulations, and standards. The TAC's goal is to provide technically accurate, defensible data, analyses, and solutions that meet or exceed minimum industry and

regulatory standards. The TAC upholds and abides by the DOE's ES&H Policy statement, as well as the UMTRA Project's May 1992 ES&H Goal Statement. The TAC Regulatory Compliance Department is primarily responsible for data collection and analysis, preparation of documentation for compliance with the NEPA, and analysis of new or revised environmental requirements for applicability to UMTRA Project activities.

3.2.1 Environmental assessments/environmental impact statements

The TAC Regulatory Compliance Department prepares all UMTRA Project NEPA compliance documents (EISs and EAs). In addition, special technical studies and evaluations, such as floodplain/wetland evaluations, ecological field studies, and cultural resource surveys, are prepared for compliance with other Federal and/or state environmental requirements and are integrated into the NEPA compliance process. Production of EAs and EISs and other environmental compliance reports requires full cooperation, participation, and technical contributions (engineering, geology, hydrology, and health physics) from TAC technical departments, several DOE groups, and other government agencies. The TAC Regulatory Compliance Department assumes the lead in preparing EAs, EISs, and other environmental compliance reports based on direction from the UMTRA Project Office and the DOE Office of the Assistant Secretary, Environment, Safety, and Health.

The TAC prepares the following site-specific documents to meet the requirements of the NEPA:

- Federal Register notices.
- Records of decision (ROD).
- Findings of no significant impact (FONSI).
- Action description memorandums.
- EISs.
- EAs.
- Environmental monitoring reports.
- Floodplain/wetlands assessments.
- Mitigation plans.
- Threatened and endangered species reports.

3.2.2 Environmental regulatory analysis/compliance

The TAC Regulatory Compliance Department provides support for regulatory review and analysis of new and revised ES&H regulations and requirements to determine applicability and impact to the UMTRA Project. The department also assists in identifying pertinent requirements and in reviewing and revising programmatic and regulatory documentation.

3.2.3 Environment, Health, and Safety Program

The TAC provides assistance in performing environmental, radiological, and construction health and safety audits of conditions at mill sites and vicinity properties to determine compliance with the ES&H Plan, DOE Orders, regulations and requirements, and Project plans for remedial action. The TAC provides follow-up assistance as required. Audit reports are submitted for each survey conducted. The audits are routinely performed at all active UMTRA Project sites (i.e., sites that are actively undergoing remedial action). See Section 3.7, Audits.

3.2.4 Licensing and permitting

A list is maintained of all known Federal, state, and local government reviews, approvals, and permits that are required for each site. An analysis of impacts of possible permit delays is provided. If appropriate, a plan is developed in advance to minimize the risk of schedule delays. The TAC determines the effects of the permitting process on each site's conceptual design to ensure compliance with applicable laws, regulations, and ordinances of Federal, state, and local governments. The TAC incorporates the details of such determinations in the RAP, as appropriate, and obtains or supports the DOE and the RAC in obtaining any clearance, license, permit, or other regulatory approvals that are necessary to conduct remedial actions and continues this function as required.

The UMTRA Project licensing coordinator's role is to support all activities related to compliance with site licensing requirements. As a liaison among the Project Office, TAC, RAC, Grand Junction Projects Office (GJPO), and the NRC, the licensing coordinator tracks schedules and initiates actions to streamline efforts to complete milestones in the licensing process. Licensing milestones include NRC concurrence on site certification, NRC acceptance of the site long-term surveillance plan (LTSP), and the transfer of ownership of the disposal site.

3.3 SURVEILLANCE AND MAINTENANCE

The TAC prepares a general guidance document for all sites and a draft LTSP for each site. The TAC also incorporates reviewing agency comments and the RAC's remedial action completion report in preparing the final LTSP. Surveillance activities are conducted at completed sites, including an annual site inspection and custodial maintenance, pending transfer of site surveillance responsibilities to the DOE's GJPO.

3.4 THE UMTRA LICENSING PROCESS

Following the completion of remedial action, the RAC prepares and submits a site completion report to the DOE. The site completion report contains separate information for the processing site and disposal site. 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 (40 CFR 192). The NRC reviews the completion report and validates the data presented by doing independent analyses and verifying that the EPA standards have been met. The NRC then concurs with the DOE's certification of completion. Once a site is certified, land ownership and/or custodial responsibilities are transferred to the DOE. For disposal sites located on land acquired by the state, title to the disposal site property is transferred to the DOE. For disposal sites located on Indian lands, the DOE shall enter into a custodial care agreement with the affected tribe, authorizing the DOE to continue long-term surveillance and maintenance of the site. Lands previously owned by other Federal agencies such as the Bureau of Land Management will have undergone a transfer of jurisdiction and NEPA compliance prior to remedial actions.

Site certification and the establishment of land ownership and custodial responsibility shall provide the information necessary to finalize the site LTSP. 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 at 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 tribe or reverts back to the original owners.

During the interim period between the end of remedial action and site licensing, the UMTRA Project Office maintains authority for the precicensing custodial care program for site monitoring and surveillance. However, after the general license takes effect for a site, the UMTRA Project Office's authority will transfer to the DOE's long-term surveillance program, which is the responsibility of the GJPO. For disposal sites located at processing sites where groundwater contamination exists, the UMTRA Project Office will maintain access to the site for groundwater restoration activities. For these sites the general license may take effect in two steps. The long-term surveillance program still takes effect for the disposal site, regardless of ongoing groundwater restoration.

3.5 VICINITY PROPERTIES

Locations away from former processing sites where tailings were carried by wind, water, or man are called vicinity properties. Tailings were frequently used for construction purposes because of their useful characteristics for such purposes. However, these tailings, just like those from the processing site itself, pose an unacceptable health threat to the public and the environment. The TAC helps to coordinate the cleanup of these vicinity properties.

3.5.1 Lead contractor/master planner, vicinity properties management

The TAC, through its integration function, serves as the DOE's facilitator and integrator for vicinity properties management. The TAC functions as the DOE's lead contractor and master planner in integrating and coordinating all vicinity property contractors' plans and budgets. Each month's actual accomplishments, by required categories, are submitted to the TAC. This status update keeps the UMTRA Project Office abreast of accomplishments, trends, and potential management or technical problems.

3.5.2 Vicinity properties integration

The TAC integrates the vicinity properties flow of work from contractor to contractor. The TAC monitors operations of all contractors continuously. This is done through telephone calls and visits to the various contractor offices.

The vicinity property data are compiled and maintained within two major systems, the Vicinity Properties Data Management System (VPDMS) and the Integrated Project Management System (IPMS). The systems have been designed to provide storage, manipulation, and reporting functions on the vicinity property activities. The TAC maintains the system and incorporates data input from the inclusion survey contractor, RAC, DOE, UMTRA Project Office, and the TAC. The data are reported to the TAC monthly by means of electronic data transfer or data sheets.

The TAC assists the DOE in tracking internal DOE progress on administrative items, particularly REA approvals, inclusion/exclusion decisions, and certification decisions. The TAC also assists the DOE in documenting and transmitting inclusion/exclusion and certification decisions.

3.5.3 Vicinity properties process coordination

The TAC, as the vicinity properties process coordinator, develops the flow of events, defines contractor responsibilities, identifies the process to accomplish the remedial action objective, and ensures that all lessons learned in the field are incorporated into the process, as appropriate. The process is documented in the Vicinity Properties Management and Implementation Manual (VPMIM).

3.5.4 Vicinity properties document reviews

The TAC operates as the DOE QA agent to review operations and procedures employed by the contractors and to report on how these operations conform to best engineering practices and accepted requirements. The TAC ensures that radiological conditions are adequately characterized and documented and ensures that the remedial action designs are reasonable and cost-effective and comply with the EPA standards.

The TAC reviews inclusion/exclusion reports, REAs, and completion reports. Inclusion/exclusion reports are reviewed to determine whether the property should be included or excluded in the UMTRA Project. REAs are reviewed for adequacy of design, completeness of the radiological characterization, and accuracy of cost estimates. Completion reports are reviewed to ensure that the data document that remedial action for the property complies with EPA standards.

The TAC periodically performs vicinity properties radiological surveillance in the field. Such surveillance ensures that all contractors are performing work in accordance with the VPMIM, EPA standards, and UMTRA Project Office policy.

3.6 QUALITY ASSURANCE

In order for any major undertaking to succeed, quality has to be built in as an integral part of the process and management philosophy. The TAC is dedicated to assisting the DOE achieve success in completing the objectives of the UMTRA Project by promoting a continuous process of quality advancement in all areas.

3.6.1 Project quality assurance program

The TAC QA program is designed to meet the requirements of DOE Order 5700.6C and the UMTRA Project Office QAPP. The TAC discharges its QA responsibilities by providing technical assistance to the Project Office on QA matters and performing overview functions of the TAC operation. The TAC QA overview responsibilities and actions are as follows:

The TAC reviews the UMTRA Project QAPP and the TAC QAPP documents annually for conformance to DOE-Albuquerque Operations Office orders and changing conditions and updates them as necessary. The TAC assists Project participants in the preparation of their QAPPs by 1) informing the participant, in detail, of the requirements; 2) answering questions and providing guidance during the preparation phase; 3) reviewing in detail the completed document; 4) assisting in the implementation phase; and 5) performing audits and in-process surveillances of the implemented document and activities. Many of these activities are performed at the participant work site.

The TAC assists the Project Office in administering the QA program by consulting, reviewing documents, performing audits and surveillances, generating reports, coordinating QA efforts of Project participants, and other activities as required.

The TAC conducts formal reviews to evaluate and comment on the effectiveness of the Project participants' QAPPs. These reviews are conducted in the preparation phase and result in written reports concerning the participants' QA program. These reviews are usually performed in conjunction with QA audits.

The TAC QA Department participates in Project Office QA audits and has been assigned the role of lead auditor in these audits. The QA Department maintains a schedule of QA audits and surveillances to be conducted of the Project subcontractor activities. These audit activities result in the generation of audit reports, which are provided to the Project Office and in turn distributed to the audited subcontractor. Follow-up reviews of findings are undertaken to ascertain that the proper corrective actions have been taken.

3.6.2 Technical Assistance Contractor Quality Assurance

The TAC QAPP covers compliance with the UMTRA Project QAPP and DOE Order 5700.6C. The QA staff formally monitors quality-related TAC activities through document reviews and audits. Results of these activities are submitted to the TAC PM and to the managers of the affected activities by a formal report. All departments within the TAC are scheduled for audits annually. The TAC QA Department participates in planning meetings and other management meetings to ensure that QA requirements are considered in each phase of the contract and Project. The TAC QA Department also ensures that the various TAC SOPs are current, complete, and implemented.

3.7 AUDITS

Performance of successful remedial actions at the various processing sites and vicinity properties requires Project management oversight of various types and degrees. The TAC provides the DOE with assistance in performing this oversight by conducting audits of various processes and activities. These audits can be internal as well as external.

3.7.1 Assessment and Analysis Documentation and Information Tracking System

The UMTRA Project has many assessment activities that must be maintained, tracked, and analyzed. To facilitate this maintenance, a data base called AADITS has been created that allows trends to be consistently developed across disparate disciplines. It also makes corrective action status on all evaluation activities involving the UMTRA Project available to all staff. It is used as a management tool to measure continuous improvement of all aspects of the UMTRA Project.

3.7.2 Site audit/validation

The TAC performs site surveillance and audits at mill sites and disposal sites and prepares audit reports of in-progress actions. The reports include an evaluation of the compliance of the remedial action with relevant specifications and standards and an assessment of the capabilities for measuring radiological and other physical conditions.

The TAC reviews site and vicinity property completion reports for compliance with the EPA standards. A certification review analysis, documenting this review and containing a recommendation as to certification readiness, is provided for each site and vicinity property. The TAC also prepares a final audit report for each completed site that summarizes site surveillance and audits.

3.7.3 Audit activities

The TAC Regulatory Compliance Department conducts audits at each UMTRA Project site. An audit is a planned, documented, and comprehensive activity performed to determine, by investigation, examination, or evaluation of objective evidence, the adequacy of compliance with established requirements and the effectiveness of implemented environment, radiological, safety, and health programs.

Radiological site audits

The radiological staff of the TAC Regulatory Compliance Department conducts radiological site audits.

Tasks associated with a radiological audit are as follows:

- Evaluating of the radiological survey plan to ensure its consistency with the site design and planning documents (radiological support plan and VPMIN).
- Verifying the implementation of radiological monitoring procedures.
- Reviewing data management activities and documentation.
- Assessing accuracy of measurement methods by comparing calibrations, analyzing split samples, and conducting a limited but independent survey in areas that were previously surveyed.

Results of these audits are documented and included in formal reports to the DOE.

Health and Safety Audits

The health and safety staff of the TAC Regulatory Compliance Department routinely conducts health and safety audits of RAC construction activities at UMTRA Project sites and vicinity properties. The audits are a comprehensive review of RAC health and safety programs at the sites.

Observations and findings resulting from site visits compare health and safety programs implemented in the field with guidance documents such as the UMTRA Project ES&H Plan, RAC site-specific health and safety plans, and RAC construction health and safety plans.

Environmental audits

The TAC Regulatory Compliance Department has developed an audit program to assess and determine the effectiveness of the RAC environmental compliance program with respect to surface remedial action activities and to ensure that work is performed in accordance with permit requirements, applicable performance standards, and approved mitigation plans. Reports documenting the surveys are submitted to the DOE for transmittal to the RAC.

QA audits

The TAC QA Department conducts two types of QA audits: external audits, in which the TAC audits the Project-related activities of other participants for the UMTRA Project Office; and internal audits, in which the TAC audits TAC activities and subcontractors.

The TAC QAPP requires that each quality-related activity performed by the TAC be audited annually. These audits result in formal audit reports. Follow-up activities consist of written memorandums and surveillance to verify that required corrective actions have been implemented.

The TAC QAPP requires that TAC support subcontractor activities be audited. Support subcontractor activities are either of a short-term duration (e.g., drillers activities) or of a long-term duration (e.g., analysis laboratories) and must be audited either annually or once during their activity. Subcontractor audits result in the issuance of a formal audit report. Follow-up activities will be required to verify the implementation of required corrective actions.

4.0 TECHNICAL APPROACH—UMTRA GROUNDWATER PROJECT

4.1 GROUNDWATER RESTORATION PHASE

The DOE is required to demonstrate that proposed groundwater cleanup actions at the UMTRA Project processing sites will comply with the proposed EPA groundwater cleanup standards in 40 CFR 192, Subparts B and C. The need for groundwater restoration at selected UMTRA Project processing sites is determined based on the EPA regulatory requirements for protection of human health and the environment. The Programmatic Environmental Impact Statement (PEIS) will be used as a planning and decision-making document to determine the program-wide groundwater compliance strategy.

To ensure that technically and financially sound groundwater restoration activities are selected, the observational approach is proposed. This approach uses existing data to develop a conceptual model of site conditions and applicable compliance strategies. This information is used to develop a groundwater restoration strategy based on "most probable" site conditions. The most likely alternative scenarios are also postulated during the development of the initial groundwater restoration action plan. Contingency plans are developed to deal with deviations from reasonably anticipated conditions which may be "observed" as site remediation proceeds. The observational approach links a cost-effective remediation option with an effective contingency plan that will result in full regulatory compliance and protection of human health and the environment without the burden of excessive site characterization and conservatism.

4.2 PROGRAM STRATEGY

Program optimization involves considering a variety of strategies and options to achieve site-specific groundwater cleanup objectives that are consistent with the current EPA regulatory framework and are acceptable to the NRC, states, tribes, and the public. These available strategies and options will be outlined in the PEIS. The DOE will pursue innovative technical approaches that will allow for the most feasible and cost-effective approach to compliance with regulatory requirements. An active implementation of this approach can be expected to have considerable success and result in substantial cost savings.

The advantages of program optimization include achievement of full regulatory compliance, consistency with the proposed action in the PEIS, and greater potential for positive results early in the program (based on the observational approach).

4.3 OBSERVATIONAL APPROACH

The observational approach recognizes and responds to uncertainties related to remediation at contaminated sites. These uncertainties can lead to unrealistic

data collection activities at sites where it is not possible, desirable, or necessary to fully characterize the site before remedial activities begin. Reasonable deviations from the "most probable" site conditions (defined by the conceptual model) are identified as well as the critical parameters that will be observed to detect potential divergence from the remediation goals. Contingency plans are developed to deal with potential divergences. This process allows a reasonable investigation to be performed and a contingency plan to be prepared for detecting and responding to the new information that will invariably improve the understanding of the site during remediation.

4.4 METHODS FOR MEETING THE GROUNDWATER STANDARDS

The proposed cleanup standards normally require restoration of all contaminated groundwater to the levels provided under 40 CFR 192. These levels are either background concentrations, maximum concentration limits, or alternate concentration limits (ACL). Supplemental standards may also be applied if certain criteria are met (40 CFR 192.21).

The approach to groundwater cleanup and the method for meeting the groundwater standards will likely be based on the results of site-specific risk assessments and will include one or a combination of the following methods: no remediation; application of supplemental standards or ACLs, natural flushing, or active groundwater restoration. If the first three options will not satisfy the regulatory requirements for compliance with groundwater cleanup standards at certain processing sites, active groundwater restoration methods will be considered in conjunction with available passive techniques. Existing technologies for active groundwater restoration are being assessed to determine methods that may be applicable to achieve compliance with the groundwater cleanup standards. These include plume management and redistribution, secondary source remediation ("hot-spot" removal), bioremediation (particularly for nitrate), extraction and land application, and other innovative technologies.

4.5 SITE IMPLEMENTATION

Site implementation includes the development of a conceptual site model, approach to site characterization, development of remedial action alternatives, selection of the groundwater restoration method, and remedial design and implementation, in the context of site-specific documentation in the site observational work plan (SOWP) and the RAP.

Application of the observational approach to the groundwater restoration phase of the UMTRA Project will be advantageous and cost-effective. The existing data base will be evaluated with regard to data validity and usability for the groundwater restoration phase. The most probable site conditions will be determined and a conceptual model formulated for each site. Additional data requirements to substantiate the most probable site conditions will be determined, and data will be collected based on data quality objectives and implemented within the concept of the observational approach. Uncertainties

will be identified and evaluated in the context of contingency planning, impacts, risk evaluation, and failure modes.

The SOWP will define the technical scope, objectives, and strategy for the anticipated activities at the site from characterization through remediation. However, applying the observational approach to site activities will result in a dynamic and iterative process. Therefore, the SOWP may be modified during the process to incorporate new information and refine Project objectives. The SOWP will present the conceptual model based on existing site information, identify uncertainties, address the uncertainties with additional site characterization as needed, and provide a means to assess the impact of reasonable deviations.

The SOWP will provide guidance for field sampling and testing activities by defining the data collection objectives and methods to be used. Specifications for collecting and analyzing environmental samples, field testing, and the QA evaluation and management of data will be provided in Project SOPs and the Quality Assurance Implementation Plan (QAIP). Site-specific measures for ensuring health and safety at the sites that are not identified in the ES&H Plan will be included in the SOWP.

The RAP is the evaluation and design document submitted to the NRC, states, and/or tribes for concurrence. This document will contain the details of site characterization performed to support the conceptual model of the site, the development of remedial action alternatives, remedial action selection, the implementation plan for the remedial design and remedial action, and the groundwater monitoring plan. These details will be presented in the context of the observational approach and will reflect the dynamic and iterative nature of the process. The method and conditions for terminating groundwater restoration remedial activities at the sites will also be discussed in the RAP.

The RAP will contain a section describing the results of site characterization activities performed during the groundwater restoration phase of the UMTRA Project. The characterization activities will cover all facets of the program, from additional site characterization to enhance the conceptual model of the site, to activities related to development of remedial action alternatives, to implementation of the remedial design and remedial action.

Documentation in compliance with the NEPA is prepared prior to the initiation of remedial activities. Documentation typically involves the preparation of an EA and a FONSI. However, in some cases, more extensive environmental analyses are required and an EIS will be prepared. In other instances (e.g., initiation of site characterization), a Categorical Exclusion (CX) is the appropriate level of documentation for compliance with the NEPA.

The NEPA documentation provides the information and analysis to determine the type and extent of impacts project activities will have on the environment and identifies way in which the project will mitigate potential adverse environmental

impacts or enhance beneficial impacts. The NEPA is an encompassing statute; that is, the process and requirements for implementing NEPA provide coherence to the diverse array of environmental statutes under which the UMTRA Project operates. EAs (or EISs) document the Project's compliance with these other environmental regulations, such as Endangered Species Act of 1973, Floodplain/Wetland Executive Orders (EO 11988 and EO 11990), Clean Air Act, and National Historic Preservation Act of 1979.

The NEPA documents are submitted to state and Federal agencies that have legal authority or special expertise relating to the project for their review and comment and concurrence if required.

Remedial action alternatives will be developed on a site-specific basis, considering factors and criteria developed by applying the observational approach. Potential groundwater cleanup strategies include no remediation, application of supplemental standards or ACLs, natural flushing, or active groundwater restoration. The active groundwater restoration methods may be used individually or in combination with other groundwater cleanup strategies. Using the observational approach, remedial action alternatives will be developed and considered using existing site-specific data, with as little additional site characterization as needed to reasonably determine site conditions and evaluate viable groundwater restoration alternatives.

Groundwater restoration alternatives must be developed based on site-specific conditions and possible deviations in these site conditions. By applying the observational approach, the DOE will be able to test possible remedial action alternatives and facilitate the decision-making process.

Selection of the preferred remedial action alternative will be based on evaluation of several regulatory, technical, and policy criteria. These include protection of human health and the environment; compliance with groundwater cleanup standards; short-term effectiveness; long-term effectiveness and performance; reduction of toxicity, mobility, or volume; implementability; cost; and state, tribal, and community acceptance.

After the remedial action alternatives have been evaluated relative to the above criteria, a comparative analysis will be conducted to determine the performance of each alternative. The analysis should identify the advantages and disadvantages of each alternative compared to the others so that the key tradeoffs are apparent to the decision-maker. Results of the comparative analysis, combined with risk management judgments, become the rationale for selecting the preferred remedial action alternative and preparing the proposed RAP.

The remedial design will be done in the context of the observational approach, as outlined in the SOWP, with the preliminary work being accomplished in the earlier phases of the groundwater restoration phase. As the concepts are modified and refined, the design will become more focused and applicable to

site-specific conditions. The final design will be documented in the RAP, which will be the vehicle for concurrence from the NRC and states/tribes. Upon concurrence, the remedial action will be implemented.

4.6 GROUNDWATER MONITORING

Groundwater monitoring will be implemented during and after groundwater restoration activities to evaluate the effectiveness of the remedial action, to demonstrate compliance with the EPA groundwater cleanup standards, and to ensure protection of human health and the environment. The groundwater monitoring program will consist of baseline, detection, and compliance monitoring. Groundwater monitoring will provide the basis for determining when groundwater restoration objectives have been met and when compliance activities are complete. Because groundwater contamination problems and groundwater restoration scenarios are site-specific (based on hydrogeologic complexity, magnitude of contamination, and potential impact on human health and the environment), the number and location of monitor wells, analytes evaluated, and sampling frequency will be contingent on site conditions and the selected remedial action. The groundwater monitoring program will be designed and implemented in conjunction with the observational approach.

4.7 LICENSING

Title I of the UMTRCA, as amended, authorized the DOE, upon completion of the remedial actions, to care for the permanent disposal sites under a general license issued by the NRC to ensure future protection of public health and safety. The NRC licensing regulations, 10 CFR 40.27, *General License for Custody and Long-term Care of Residual Radioactive Material Disposal Sites*, took effect on November 30, 1990. A disposal site comes under the general license after the NRC concurs in the DOE certification that all remedial actions were completed in accordance with all applicable standards.

5.0 MANAGEMENT PLANNING AND CONTROLS

5.1 INTRODUCTION

In addition to internal management and control, the TAC operates the IPMS in conjunction with the DOE Project Office. The integrating effort includes consolidation/integration of contractors' data into Project status reports, independent analysis of contractors' data to ensure that proper interface and the optimum approach are being used, long-range project planning and budgeting, and execution of "what if..." exercises. In this role, the TAC is an extension of, and integral to, the DOE Project Office.

The new requirements of the groundwater remediation portion of the UMTRA Project will be accommodated in the IPMS and Project Management Control System (PMCS) by incorporating the groundwater Work Breakdown Structure (WBS); reprogramming data base structures to provide for multiple projects tracking; and revising report formats to reflect an extended Project duration. In addition, a new set of site schedules will be developed to reflect the groundwater remediation activities. The PMCS will also require the establishment of new cost accounts and detailed site budgets. Although these changes will take a period of time to incorporate, both systems are quite flexible and most of the changes can be made through modification rather than replacement of existing system components.

5.2 INTEGRATED PROJECT MANAGEMENT SYSTEM

The TAC supports the DOE Project Office in the management control of all UMTRA Project activities and participants through integrated scheduling, costing, budgeting, reporting, trending, planning, and analysis. The TAC prepares procedures for management controls to meet DOE requirements, documents the IPMS operation, and works with participants to establish supporting requirements for generating input into the IPMS.

The IPMS is composed of several major modules: planning and scheduling, budgeting and cost estimating, cost reduction, reporting, change control, and project critical issues.

5.2.1 Planning and scheduling

A total Project schedule (the UMTRA Project schedule) provides key milestone completion dates for surface remedial action and groundwater remediation portions of the UMTRA Project. A detailed schedule report is prepared and distributed monthly using current schedule status obtained from all Project participants. In addition, the DOE's UMTRA Project's activity data sheets (ADS), relating to the DOE Environmental Restoration/Waste Management (ER/WM) 5-year plan, are updated annually, and site-specific plans are prepared for surface and groundwater remedial action.

5.2.2 Budgeting and cost estimating

A total estimated cost for the entire UMTRA Project, including Surface and Groundwater, by fiscal year, site, WBS, ADS, and Project participant is maintained. The fiscal year values are updated consistent with the DOE budgeting cycle. Risk assessment and contingency reviews are also conducted bi-annually as part of the budgeting cycle. The annual UMTRA Project Federal budgets for both surface and groundwater remedial action are prepared in conjunction with the updating of the ADSs and the 5-year plan.

5.2.3 Cost reduction

A coordinated Project-level Cost Reduction/Productivity Improvement Program is maintained and run for the DOE Project Office. This program encourages savings through goal setting, communications, monthly status reporting, and general integration with other estimating and value engineering functions.

5.2.4 Reporting

Detailed cost reports are prepared for the fiscal year, on a month-to-month basis, and for the total Project separately for both Surface and Groundwater. These reports display planned versus actual costs by site, activity (WBS), and by Project participant. In addition, plans and progress along with variance analyses for both cost and schedule are prepared. The billing status of state-shared costs is also integrated into the IPMS. Reports are submitted to the TAC by all participants monthly for cost and schedule status from which the TAC prepares 1) tailored reports for different levels of DOE management as to the status of costs and milestone accomplishments, as needed; 2) management reports for DOE Headquarters and the DOE-AL, as required, such as the Project Manager's Progress Report and the DOE Progress Tracking System; and 3) periodic management reports as required for the states and other Project participants.

5.2.5 Change control

As an integral part of the system, the TAC administers the cost, schedule, and technical baselines by site, by WBS, and by Project participant. The Change Control Board meets monthly to review change requests submitted by Project participants. Upon approval of a change request by the CCB and DOE Project Manager, the IPMS Department updates the Project baselines. A monthly report, the IPMS trend report, reports the cost and schedule baselines, their status, and variances thereto.

5.2.6 Project critical issues meeting

A recent addition to the reporting process is the Project Critical Issues Meeting (PCIM). The PCIM was created to identify critical issues that are considered a risk to exceeding funds and/or jeopardizing DOE-controlled milestones, site

critical path, project critical path, regulatory requirements, regulatory milestones, and any other item that can be considered a threat to the successful completion of the Project. At the meeting, individuals are assigned responsibility for action with dates for resolution to prevent Project delays or cost growths. The meeting is not intended to solve the issue, but rather to identify and institute corrective action. The IPMS department administers the monthly PCIM process.

5.3 PROJECT MANAGEMENT CONTROL SYSTEM

The TAC accomplishes internal planning and control using the Project PMCS. The PMCS is an integrated, earned-value based system that has been previously accepted by the DOE as complying with the Cost and Schedule Control Systems Criteria.

5.3.1 Cost planning and control

The TAC plans, budgets, and controls its work to meet the schedule milestones and funding constraints specified by the DOE Project Office. Major milestones and related budgets are traceable from the UMTRA Project schedule to the TAC cost account/work package level schedules. Similarly, budgets are detailed in a manner consistent with the contract WBS, the TAC organization, and authorized funding limits.

The integration of the scope of work, schedule, and budget is accomplished at the cost account level. This provides the formal means for planning, budgeting, establishing the basis for performance measurement and variance analysis, and reporting status to the TAC and the Project Office.

5.3.2 Task planning and funds management

The TAC provides task planning and funds management for obtaining, using, and controlling UMTRA Project funds. For each proposed DOE task assignment, the TAC prepares a task plan. This contains detailed TAC plans and schedules, including a cost plan, labor plan, and deliverable plan, to perform the work required in each task assignment. After negotiations between the TAC and the contracting officer, the UMTRA Project Office approves the funding for part or all of the task assignment. A contract modification is transmitted to the TAC, which specifies and documents the authorized funding. The TAC PM then allocates the authorized funds among the tasks.

During each task assignment, remaining funds are reviewed monthly to determine if they are sufficient to perform the authorized work. The TAC accounting section submits a monthly estimated cost incurred report that contains information on billed costs and funding status. If changes to the task agreement result in modification to the negotiated task assignment value, the cost plan is revised based on approved contract changes.

5.3.3 Schedule planning and control

The TAC scheduling system is based on the hierarchy of Project/contract schedules that are traceable, in increasing detail, from the UMTRA Project schedule to the TAC task/work package schedules.

The UMTRA Project Schedule is the highest level in the hierarchy. This schedule includes major site activities and is updated monthly to track and report progress at DOE-conducted review meetings.

The Contracting Officer's Representative's (COR) schedule is the TAC top-level schedule and serves as the task assignment schedule baseline. It contains the planned dates for delivery of the other products and services required during the task assignment to support the UMTRA Project schedule.

The TAC site schedules contain the time-phased plan to produce site-related documents and services. The TAC site schedules are used to integrate, manage, and monitor detailed site activities.

5.3.4 Performance measurement

Each month, site managers and department managers are required to review site schedule status. This review is the basis for updating the COR schedule, site schedules, and Project schedule. An analysis of the period's schedule performance is provided to TAC management for review and necessary corrective actions. The PMCS system description and procedures describe the methods and assign responsibilities for maintaining and operating the budgeting and scheduling system.

This process is an iterative, continuing series of planning, authorizing, performance measurement, and baseline management activities. Numerous management reports and analyses are prepared and distributed to appropriate managers. In addition, effective cost control techniques are formalized to ensure effective and prudent use of DOE funds.

5.3.5 Federal budget preparation

Each year the TAC is required to prepare individual detailed cost estimates for UMTRA Surface and UMTRA Groundwater projects. Several revisions are usually required including at least one edition of the Project Planning Level, Target Level, and Final Budget Case for Surface and Groundwater. While the primary focus of these budget submittals encompasses the 5-year planning window, a TAC Total Estimated Cost is also required. The TAC Total Estimated Cost must include detailed cost estimates for the entire duration of the Surface and Groundwater projects by WBS, by ACS, and by site.

The Federal budget process also includes preparation and presentation of TAC cost estimates each fiscal year. The TAC is required to present Surface and Groundwater budgets to the DOE Project Office in an annual "Bottoms-up" review. Other DOE Headquarters audits and reviews are conducted on an annual basis. A sample of the audits and reviews the TAC supports included ICE audits, budget validation reviews, baseline validation reviews, and major project cost estimate audits.

5.3.6 Resource planning - team assignment system

TAS is a system used by the Technical Managers to manage their resources. TAS is being implemented in order to forge communication links among the Control Account Managers, Technical Managers, and the staff. TAS will integrate the staff assignment process with the currently anticipated work requirements and priorities.

The features of TAS include a LAN-based system that links PMCS data with a user-friendly, spreadsheet type interface. TAS permits assignment of staff to teams with planned requirements (as planned within the PMCS). The system will identify overutilization and underutilization of staff and will help quantify future staffing requirements by department and specific discipline.

FRET is a report generated from the PMCS data to provide the Project with the staffing needs for a fiscal year. All sites and activities are listed on the report. FRET is valuable for reporting current year planning and out-year planning of staffing. In addition, the data base created by the FRET report is used in the TAS.

6.0 PROJECT ENHANCEMENT

6.1 INTRODUCTION

The TAC routinely reviews existing practices, procedures, and policies to determine ways to improve its own as well as the Project's performance. Numerous improvements have been made, and others are currently in the development stage. These TAC improvements are grouped into the following categories: management improvements, communications and process improvements, and quality improvements.

6.2 MANAGEMENT IMPROVEMENTS

6.2.1 TAC Action Implementation Logging System

In a service organization such as the UMTRA TAC, the tracking of action items is critical. Management must be made aware of events that may affect the schedule for completing action items. To accomplish this, a data base has been developed that provides a broad availability of action items and status of each item across action categories. Project Management conducts a weekly staff meeting to review the status of TAILS action items. Any potential problems that may arise are identified to all supervisors.

6.2.2 Systems Performance and Measurement

A key element of any service organization is the ability to measure the amount of rework. It is important that the measurement system be as simple to use as possible to encourage use by all staff. The Systems Performance And Measurement data base provides a mechanism to record rework with a point-and-shoot entry.

6.2.3 Automated travel logging and awareness system

With the amount of travel among the staff to the remedial action sites and various office meetings, the TAC has developed a user-friendly system to communicate employees' schedules to the remainder of the staff. The Automated Travel Logging and Awareness System data base identifies those employees who are out of office on a given day. It helps improve efficiency of operations throughout the UMTRA TAC.

6.3 COMMUNICATIONS AND PROCESS IMPROVEMENTS

6.3.1 Electronic mail

Good communications are crucial to a service organization. To improve the communications between all members of the UMTRA staff, a commercial electronic mail (E-Mail) product was purchased. All staff members are strongly

encouraged to use this product during day-to-day work activities. Employees receive their internal messages immediately without the intervention of receptionists or secretaries. Messages may be sent simultaneously to different staff members and also forwarded to the appropriate people with ease. This has improved the communications among the UMTRA staff members tremendously. Also, a macro was created internally for the receptionist, and telephone messages are sent via E-Mail. Employees receive their phone messages immediately, which increases efficiency on the Project.

6.3.2 Network-accessible standard operating procedures

To ensure accuracy of routine operations and to assign specific work responsibilities, the TAC has prepared numerous SOPs. The SOPs are the basic guidelines for all TAC activities. These SOPs are reviewed and updated regularly. The SOPs detail overall TAC administrative, procurement, and technical policies and guidelines. The SOPs are controlled documents and therefore must be maintained regularly. Every employee has access to the SOPs on the LAN. Having on-line access to the SOPs reduces the amount of paper necessary to ensure that there are adequate copies available throughout the Project. The SOPs are maintained centrally by an administrator; therefore, every employee is assured that the SOP being viewed is the current one. This increases the efficiency and productivity of employees on the Project.

6.3.3 Network-accessible forms

Along with the SOPs, certain forms have been transferred to WordPerfect 5.1 software, the Project's standard word processing software, and placed on the LAN. A macro was created to make the task of accessing the forms directory less burdensome. With two simple keystrokes, the forms directory listing all the forms available appears on the screen. Employees are able to print out the latest version of the form, as well as complete the form in WP51 if desired. This reduces waste of paper and eliminates the use of outdated forms.

6.4 QUALITY IMPROVEMENTS

6.4.1 Quality council

The UMTRA TAC quality policy is to provide a continuous process of quality improvement in all areas of performance. Quality improvements are provided through continuous improvement of procedures and processes. The quality council oversees the integration of all quality functions and initiatives on the UMTRA Project. The council provides recommendations to the TAC PM on issues related to quality and quality improvement. The TAC quality council is composed of the DPM, the APMs, the QA manager, and other members as appointed by the PM. Membership also includes three ambassadors from the staff (refer to Section 6.4.3).

All employees are encouraged to submit QISs to the QA management representative. The TAC suggestion program incorporates employees' suggested improvements to processes. Suggestions are categorized as QISs, ES&H suggestions, and cost reduction/productivity improvement suggestions. The QISs are provided to the quality council, which ensures that the underlying issue in any suggestion is addressed, whether by assignment to a quality improvement team, an appropriate manager, a department, or some other route. The suggestions are tracked through the use of an internally developed data base called "SUGGEST."

There are three ambassadors to the quality council, each serving a 3-month term. The terms are staggered so that a new ambassador is nominated every month. The purpose of the ambassador program is to raise the awareness level of management's commitment to quality and to encourage staff involvement in quality. The ambassadors are requested to participate in the quality council meetings and to share their experiences with their co-workers.

6.4.2 Improved processing of deliverables

Deliverables are the products that the TAC delivers to the client. It is imperative that those deliverables are processed in the most effective and efficient manner. The technical content must represent the TAC in a professional manner. Steps have been taken to improve processing time and quality in preparation, review, and approval of these deliverables to ensure that the best available product is delivered to our client. A quality improvement team was chartered to improve the processing of deliverables, and a SOP was developed for the preparation of major reports written by the TAC. The SOP records all steps going into the creation of a document and includes a flow chart of the process.

6.4.3 Independent Technical Reviews

Independent Technical Reviews (ITRs) (also known as peer reviews) are conducted to ensure and enhance the adequacy, completeness, consistency, quality, and accuracy of technical documents or procedures developed by the UMTRA Project by providing additional independent high caliber expertise.

An ITR is always conducted by persons who are independent of the subject under review. Reviewers are administratively (and sometimes geographically) remote so that there is no question of their complete independence and impartiality.

A peer review has a specified purpose, scope, format, and duration, distinguishing it from other reviews that may be performed on a less systematic basis. It has a commissioning, a beginning, a report, and a decommissioning.

Independent technical reviews are extra efforts, not routine procedures performed daily on typical projects, activities, or design processes. Because an ITR is defined apart from "normal" quality management activities, it is seen by

all participants as an extra endeavor that demands special attention, time, and procedures because special benefits are expected.

An ITR is not the application of normal checks and balances within the UMTRA Project that are a part of standard Project procedures and everyday routines associated with quality management or design. An ITR is not simply a review of a document by anyone other than its author, even if the reviewer is at or above the author's "peer" level. Additionally, an ITR is not a value engineering study. A basic difference is that value engineering of a design focuses on potential cost savings, while an ITR of a design examines the validity of the design, including, in many cases, the procedures used and the management of the process.

Not all documents or procedures will be subjected to ITRs. Potential candidate subjects for reviews will be carefully considered for review by the TAC and the DOE. During an ITR, reviewers examine the consistency and defensibility of technical concepts, methods, studies, and/or conclusions presented in UMTRA Project documents and procedures.

7.0 TRAINING

It is fundamental to the UMTRA Project that its TAC staff be knowledgeable in the TAC's mission and scope, the organization structure (including office administrative requirements), their job functions, procedures to be followed in the performance of TAC activities, new technical processes, and the principles of quality improvement. Accordingly, actions have been taken to implement a variety of training-related endeavors to fulfill the training objectives.

An employee orientation manual has been prepared that describes the UMTRA Project and its mission and scope, the TAC organizations and their functions and responsibilities, administrative procedures, and the like. This manual is used to indoctrinate new employees into the UMTRA Project and is used by existing staff as a reference book. It provides a means for new employees to quickly become knowledgeable about the UMTRA Project.

All supervisors are responsible for identifying the type and amount of training required by individual members of their staff. This training shall include being knowledgeable in applicable regulations, DOE Orders, SOPs and other documents pertinent to the UMTRA Project. In addition, technical and career development requirements are to be identified. These training requirements are entered into a data base called the TRAIN. This data base is also used to record the training accomplished.

Training is also provided to all TAC employees on the principles of TQM. The objectives of this training are to identify the tools and methods that are available for quality improvements and responsibilities for implementing the continuous improvement processes and to ensure that the objectives of the TAC's external and internal clients are satisfied.

Because of an identified need to improve the effectiveness of the TAC's meetings, action was taken to train key TAC members in meeting facilitation. This training focused on how a facilitator can help guide meetings, establish meeting parameters, improve the attendees' participation, and obtain consensus on objectives and decisions. This facilitation is intended to improve meetings and reduce unproductive timescales.

To maintain and improve the TAC's technical expertise, in-house training sessions have been established to provide updated information on specific technical subjects to applicable TAC technical staff. These sessions are directed at improving technical skills and their application to the UMTRA Project.

The TAC has also identified additional training resources that are available from the DOE-AL Technical Library. TAC personnel can request specific reference material and video films on subjects identified in the library catalog. Individuals are encouraged to use these resources to improve their knowledge on subjects that are related to the UMTRA Project.

8.0 CONCLUSION

This plan has been developed to document the TAC's current organization and approaches used for managing the demanding technical challenges presented by the UMTRA Surface and Groundwater Projects. It is a key management document in that it contains the TAC's vision and mission statements and its highest level goals. It also describes the roles and responsibilities for each of the departments comprising the TAC.

The Management Plan is intended to be a "living" document and, as such, will be revised periodically to ensure that it contains an accurate description of the continually evolving organizational and technical approaches used to deal with Project tasks and issues. It will be an often-cited reference by TAC managers and staff and will also be used for newcomer orientation.

9.0 LIST OF CONTRIBUTORS

The following individuals contributed to the preparation of this management plan.

Name	Contribution
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G. Archuleta, R. Bennett, D. Bierley, J. Gibb, J. Jones, M. Miller, F. Morgan, L. Pinkel, L. Ross, R. Saar, L. Ulland, A. Vollmer	Document review
L. Phyfe, C. Slosberg	Text processing
B. Harvey	Graphic design
J. Jones, K. Walston	Technical editing

10.0 REFERENCES

DOE (U.S. Department of Energy), 1989. *Technical Approach Document*, UMTRA-DOE/AL-050425.0002, Revision II, prepared by the U.S. Department of Energy, UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico.

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40 CFR 192, "Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings," *Code of Federal Regulations*, Vol. 40, Part 192, U.S. Environmental Protection Agency, Office of the Federal Register National Archives and Records Administration, Washington, D.C.

DOE ORDERS

Order 5400.5, *Radiation Protection of the Public and the Environment*, February 1990, U.S. Department of Energy, Environmental Protection Division, Washington, D.C.

Order 5700.6C, *Quality Assurance*, August 21, 1991, Office of Nuclear Energy and Office of Environment, Safety, and Health, U.S. Department of Energy, Washington, D.C.

EXECUTIVE ORDERS

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EO 11990, "Protection Wetlands," May 24, 1977, Office of the President, Washington, D.C.

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PL 95-604 (Public Law 95-604), 1978. *Uranium Mill Tailings Radiation Control Act of 1978*, 42 USC 7901, November 8, 1978, 95th Congress of the United States of America, Washington, D.C.

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