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URANIUM MILL TAILINGS PROJECT OFFICE
ALBUQUERQUE OPERATIONS OFFICE
U.S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

INTEGRATED PROJECT MANAGEMENT SYSTEM DESCRIPTION

MARCH, 1987

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1.0 INTEGRATED PROJECT MANAGEMENT SYSTEM

1.1 BACKGROUND AND PURPOSE

The Uranium Mill Tailings Remedial Action (UMTRA) Project is a Department of Energy (DOE) designated Major System Acquisition (MSA). To execute and manage the Project mission successfully and to comply with the MSA requirements, the UMTRA Project Office ("Project Office") has implemented and operates an Integrated Project Management System (IPMS). The Project Office is assisted by the Technical Assistance Contractor's (TAC) Project Integration and Control (PIC) Group in system operation. Each participant, in turn, provides critical input to system operation and reporting requirements.

The IPMS provides a uniform structured approach for integrating the work of Project participants. It serves as a tool for planning and control, workload management, performance measurement, and specialized reporting within a standardized format.

This system description presents the guidance for its operation. Appendices 1 and 2 contain definitions of commonly used terms and abbreviations and acronyms, respectively.

1.2 SCOPE

The IPMS covers the activities conducted by Project participants with funds appropriated by Congress pursuant to the authority contained in Public Law 95-604, The Uranium Mill Tailings Radiation Control Act of 1978 (the "Act"), as well as those funds reimbursed to the Federal Government by the various participating states. As a result, there are numerous organizations (e.g., DOE organizations, Federal agencies, affected states and tribes, and Project contractors) involved in the performance of work relating to, and funded by, the Project Office (Figure 1.1). This system description emphasizes the activities of those participants directly supporting the Project on a routine basis. These include Jacobs Engineering Group (Technical Assistance Contractor (TAC)), MK-Ferguson Company (Site Remedial Action Contractor (RAC)), Oak Ridge National Laboratory (Inclusion Survey Contractor), UNC Technical Services, Inc. (Grand Junction Project Office Vicinity Property Remedial Action Contractor), and the State of Utah (Salt Lake City/Clive Remedial Action Contractor).

1.3 DESCRIPTION

The IPMS consists of an integrated set of subsystems which correspond to the planning and control processes for accomplishing Project work in an orderly and cost effective manner. Each subsystem is discussed and key interrelationships between the subsystems noted.

Basically, work is first defined, then planned and authorized, and finally managerial control is exercised based upon measured performance during the work's execution and the evaluation of reported outcomes. In effect, the IPMS uses a feedback control concept. That is, a Project Baseline, composed of the integration of the cost, schedule, and technical

FIGURE 1.1 UMTRA PROJECT PARTICIPANT STRUCTURE

baselines, is established, approved, and authorized. Performance is measured and reported against the individual Baseline, and action is taken when the Baseline plan and performance diverge significantly.

The Project Baseline is supported by work, cost, and schedule plans developed by each participant for their authorized scope of Project work. The plans cover the fiscal year (FY) and to Project completion, as appropriate. These work, cost, and schedule plans are submitted to the Project Office in the form of Management Plans which are updated to reflect: (1) the authorized FY funding; (2) mid-year replanning; and (3) approved changes in the interim. After their approval by the Project Office, the individual plans are integrated by the PIC Group to form the overall Project plan used for measuring both Project and participant performance.

1.4 IMPLEMENTATION

1.4.1 Participant Management Control Systems

To support the IPMS operation, the Project Office has directed that the DOE Cost and Schedule Control Systems Criteria (CSCSC) will provide the basis for each participant's management system. Thus, each participant is tasked by the Project Office to implement management systems commensurate with the value, duration, and criticalness of the work being performed by them in accordance with the CSCSC. Following work authorization, each participant submits to the Project Office a Management Control System Description which describes their internal management system proposed for use in accomplishing their authorized work.

Each participant's management system is evaluated for acceptance through a DOE review of its System Description and on-site observation of actual practices to verify the system is operating as described. Once a management system is determined to be acceptable, subsequent changes to the system and System Description require approval by the cognizant Contracting Officer prior to implementation of the change.

Surveillance of each accepted management system is maintained throughout the life of the contract by the Project Office. This is performed by evaluating the participant's performance reports submitted monthly and by conducting, on a quarterly or semi-annual basis, an on-site review of the system in operation. This review, conducted by the Project Office and Albuquerque Operations (AL), with assistance from the PIC Group, emphasizes the preparation and maintenance of detailed work schedules, the methods for developing budgets, the basis for performance measurement, and the currency of the cost, schedule, and technical baselines relative to approved Change Control Board (CCB) actions. If either method indicates potential system problems, the Project Manager directs the necessary corrective action through the appropriate channels.

1.4.2 Baselines

The Project cost, schedule, and technical baselines are established based on the Project Plan. They are supported by the par-

ticipant's baselines contained in their Management Plan approved by the Project Office. Any changes to the participants' baselines that exceed established thresholds are formally processed through the CCB and require Project Manager approval. The participants are responsible for maintaining their respective baselines current with CCB actions. In addition to these interim updates the baselines are formally reviewed and revised at: (1) FY beginning to reflect the authorized FY appropriations; and (2) FY mid-year to determine if replanning is required for the remainder of the FY.

1.4.3 Changes

Since the IPMS provides the planning and control structure to be used for the Project's duration and the Project operates in a dynamic environment, the Project Office will revise the system to satisfy changing requirements and management information needs. Project participants may propose system changes to the Project Office. The proposal should include a description of the change, the reason for the change, and a summary of the probable impacts associated with the change. After approval by the Project Manager, changes will be implemented and result in a formal revision to this system description.

2.0 WORK DEFINITION SUBSYSTEM

2.1 BACKGROUND AND PURPOSE

The identification and definition of Project work is necessary for its orderly execution and monitoring. The Work Definition Subsystem provides the formalized method for defining the scope of work to be performed, subdividing the work into manageable elements, and assigning responsibility for its accomplishment to Project participants. The sequence and relationships of major work elements for performing remedial actions for a Project processing site are displayed in Figure 2.1.

To define the workload, the Project Office maintains a Project Work Breakdown Structure (PWBS) which serves as the common framework for authorizing, planning, scheduling, budgeting, and measuring and reporting work performance. The PWBS is depicted in Figure 2.2.

The UMTRA PWBS has the following characteristics. It:

- o Includes all of the Project work down through to the site level (Level 4).
- o Structures elements of work which can be independently planned, scheduled, budgeted, estimated, performed, and reported in a logical manner.
- o Relates the elements of work to each other.
- o Provides visibility for planning and control over common and dependent work efforts.

The PIC Group, through the Project Office, is responsible for maintenance of the PWBS, the WBS Dictionary defining its elements, and the assuring that Contract Work Breakdown Structures (CWBSs) support the PWBS. Participant requested changes to a CWBS or to the PWBS are submitted to the Project Office along with the reason for the request and an evaluation of the impact of the change on other elements, when applicable. The request for change is accompanied by a WBS Dictionary format (Figure 2.3) for the currently approved element and the proposed change. If the change is approved by the Project Office, the CWBS is revised accordingly. If the PWBS is impacted, it is revised by the Project Office.

2.2 SCOPE

The scope of Project work is established by the Act, Public Law 97-415, the Environmental Protection Agency standards, and the National Environmental Protection Act. The Project Charter and various Memorandums of Understandings further delineate work responsibilities of the DOE and other organizational entities involved in the UMTRA Project. Thus, the Work Definition Subsystem encompasses the workload set forth in these various documents.

LEGEND:

COOPERATING AGENCY PARTICIPATION/STATE/TRIBE/NRC	D	FINDING OF NO SIGNIFICANT IMPACT
DOE/TECHNICAL ASSISTANCE CONTRACTOR	E	END OF PROJECT
DOE/REMEDIAL ACTION CONTRACTOR	P	PUBLISH
DOE (UMTRA PROJECT OFFICE) DECISION POINT	S	STATE ACQUISITION
*	DOE (UMTRA PROJECT OFFICE) APPROVAL	B	ACQUISITION OF BLM LAND
HQ DOE DECISION POINT	(XX)	AVERAGE DURATION OF ACTIVITY (MONTHS)
d	DRAFT	•	VALUE ENGINEERING
F	FINAL	+	DESIGN REVIEW (FINAL DESIGN AT 30/60/90% COMPLETION)

NOTES:

1. Funding problems, unforeseen geologic and climatic conditions and public interest may significantly affect this schedule.
2. Chart is based on the preparation of an Environmental Assessment. Environmental Impact Statement preparation will add six (6) months to the process and delay subsequent steps by that amount.
3. Remedial Action construction will generally require two (2) full construction seasons. Larger sites may require additional time.
4. Bar thickness denotes relative degree of involvement in that step or activity.
5. The steps, activities and time required are based on current statutes, regulations, cooperative agreements, policy and practice.
6. Draft Remedial Action Plan (RAP) includes Site Conceptual Design (SCD). In the Final RAP, the SCD is replaced by the Final Design.

FIGURE 2.1 (Cont.) GENERALIZED SITE REMEDIAL ACTION FLOW CHART

FIGURE 2.2 UMTRA PROJECT WORK BREAKDOWN STRUCTURE

U.S. DEPARTMENT OF ENERGY
WORK BREAKDOWN STRUCTURE DICTIONARY
PART II – ELEMENT DEFINITION

DOE F1332.11
(11-84)

FORM APPROVED
OMB NO. 1901-1400

1. PROJECT TITLE/PARTICIPANT	2. DATE	3. IDENTIFICATION NUMBER
4. WBS ELEMENT CODE	5. WBS ELEMENT TITLE	
6. INDEX LINE NO.	7. REVISION NO. AND AUTHORIZATION	8. DATE
9. APPROVED CHANGES		
10. SYSTEM DESIGN DESCRIPTION	11. BUDGET AND REPORTING NUMBER	
12. ELEMENT TASK DESCRIPTION		

WORK BREAKDOWN STRUCTURE DICTIONARY
PART II – ELEMENT DEFINITION

PURPOSE

Part II describes the work breakdown structure elements contained in the Index and their relationship to design and funding documents. Complete only applicable blocks. Specific project requirements may be added as needed.

INSTRUCTIONS

Item 1. Enter project title and participant name.

Item 11. Enter the appropriate Budget and Reporting Number.

Item 2. Enter date of preparation.

Item 12. Element Task Description

Item 3. Enter the identification number.

a. Describe the type of organizational entities and/or elements of costs charged to the work breakdown structure element (e.g., Construction Labor, Engineering Labor, Electrical Cable, Vendor Tooling, Subcontracted Effort, Computer Operation, Travel, Printing, etc.).

Item 4. Enter the work breakdown structure element code from Column 6, Part I – Index

b. Describe the technical content (e.g., heat transport system), the components included (e.g., instrumentation and controls), their relationships to each other (e.g., operating temperatures and pressures), and how they support other work breakdown structure elements (e.g., reactor core).

Item 5. Enter the work breakdown structure element number.

c. Describe the functional activity or service necessary to make the product or to accomplish the work objectives of the work breakdown structure element (planning, designing, fabricating, testing, etc.).

Item 6. Enter index line number.

Item 7. Enter the identifier of the current revision and reference the authorizing document.

Item 8. Enter date of current revision identified in Item 7.

Item 9. Enter the identifier and short title of previously approved changes to the work breakdown structure element.

Item 10. Enter the system design description number and title or other appropriate system specification identification pertaining to the work breakdown structure element.

FIGURE 2.3 SAMPLE WBS DICTIONARY PAGE

2.3 DESCRIPTION

The Work Definition Subsystem is based on the PWBS and its subsequent extension by participants to form their CWBSs. The extension by the participant continues until the cost account level is reached. This is the level where a single CWBS element and a single participant's organization come together to form a natural management control point. All planning, budgeting, scheduling, accounting, measuring, analysis, and forecasting take place at this level and the resulting data are summarized upward to the Project level.

2.4 IMPLEMENTATION

The following discussion on subsystem implementation is related to the corresponding numbered blocks of Figure 2.4.

1. Project Office - Prepares PWBS

The Project Office prepares the PWBS and assigns the work content of each PWBS element to one or more performing contractors via the Work Authorization Subsystem (Section 3.0). The requirement for development of the CWBS and CWBS Dictionary is included in each work authorization.

2. Participants - Develop and Submit Proposed CWBS and CWBS Dictionary

Each participant extends the authorized PWBS elements to identify their work scope and form their CWBS. The extension is to the cost account level, as a minimum, for internal management purposes (see Performance Measurement Subsystem, Section 8.0). The participant prepares a CWBS Dictionary to define each element extended. Figure 2.3 contains the format used for element definitions.

3. Project Office - Review and Approve CWBS and CWBS Dictionary

The Project Office, with the assistance of the PIC Group, reviews each CWBS and CWBS Dictionary and resolves differences with the participants. The CWBS and CWBS Dictionary are approved in accordance with the participants' work authorization.

4. Participants - Develop CWBS/Organizational Matrix

Each participant prepares a CWBS/Organizational Matrix which assigns responsibility for a CWBS element to an internal performing organization and/or subcontractors. This matrix identifies the cost account and the cost account manager, i.e., the manager assigned the responsibility for completing the work, thereby providing input into the Work Authorization Subsystem.

5. Project Office - Prepares PWBS Dictionary

The Project Office, with the assistance of the PIC Group, consolidates the approved CWBS Dictionaries into the PWBS Dictionary. This process is used to ensure all work elements have received consideration during work definition.

FIGURE 2.4 WORK DEFINITION SUBSYSTEM

6. through 8. Participants - Changes to CWBS

Changes to the CWBS and CWBS Dictionary may be originated by a participant, or may result from a Project Office directed change. The CWBS change is processed in accordance with Item 2 above.

9. Project Office - Revises PWBS Dictionary

The Project Office incorporates approved CWBS changes into the PWBS Dictionary.

10. Participants - Revise CWBS Dictionary

The participants incorporate approved changes into the CWBS Dictionary and if appropriate, revise the CWBS/Organizational Matrix and the input into the Work Authorization Subsystem.

3.0 WORK AUTHORIZATION SUBSYSTEM

3.1 BACKGROUND AND PURPOSE

The Work Authorization Subsystem provides for monitoring the release of Project work, including changes to previously authorized work, and for establishing the Project Performance Measurement Baseline (PMB). Work authorization is the Project process of providing approval to a designated participant (see Figure 1.1) to expend resources to accomplish a defined scope of work. The primary purpose of the Work Authorization Subsystem is to assure that all Project work is authorized by the appropriate level of management (DOE and, in turn, participant) and that the authorization of work is communicated to the responsible participant's performing organization and cost account manager.

The structure and operation of the Project Work Authorization Subsystem is governed by Federal and DOE procurement regulations, Project agreements, and the Project acquisition strategy. The procurement regulations provide specific guidance for solicitation, selection, negotiation, and award of contracts, and formal procedures for contractual authorization of work. The agreements with the affected states and tribes and Idaho Operations are used to delegate responsibilities for certain portions of the Project mission. The acquisition strategy provides for the identification of the types of participants required to perform the work.

3.2 SCOPE

The Work Authorization Subsystem encompasses all Project activities authorized for performance to a participant. Its scope is derived from the workload developed in the Work Definition Subsystem (Section 2.0) and the acquisition strategy which relates workload assignments to Project participants.

Work authorization to Project participants is accomplished by various documentation depending on the circumstances (e.g., contractual action, FY planning, CCB action implementation). These documents include, but are not limited to, the following:

- o Contract/Task Agreement and modification thereto.
- o Cooperative agreement.
- o Memorandum of understanding.
- o FY budget guidance.
- o Approved Management Plan.
- o Approved CCB action.

This subsystem assures that each participant, in turn, formally authorizes their assigned work and plans its performance consistent with funding and scheduling constraints. The documented work authorizations pro-

vide a means for effective coordination and communication and for obtaining required management approvals with respect to the assigned workload.

Each participant's work authorization process will be in accordance with their approved Management Control System Description and provide the disciplined means for assuring that work is authorized and planned prior to its start.

3.3 DESCRIPTION

Scopes of work are developed by the Project Office for authorization to Project participants, based on the work within the PWBS, and the approved participant's cost, schedule, and technical baselines. Based on the Project Office direction, each participant updates their Management Plan and related Cost and Schedule Plans for both the up-coming and future FYs.

The Work Authorization Subsystem is designed to assure that the assigned scopes of work and their estimated cost are integrated with one another and can be accommodated within the authorized funding according to the approved baseline schedule. This is accomplished by procedural controls established in the procurement regulations or agreements between the Project Office and the participant and by the Project Offices' management of the cost, schedule, and technical baselines.

3.4 IMPLEMENTATION

The Project Office originates both the participants and FY work authorization process so that the lead-time for developing and processing the authorizing documentation supports the scheduled date for work initiation. The Project Office prepares and coordinates the initial documentation (e.g., Task Agreement Request or FY Budget Guidance) with the Project Manager, who validates the technical adequacy of the documentation and assures that all required participant inputs to the process have been identified. Guidelines for input into the process are then prepared for transmittal to each participant. Work is authorized to Project participants as follows (also see Figure 3.1):

- o Project work performed at the Management and Operating Contractor facilities is authorized by approval of the participant's Management Plan reflecting the plan for accomplishing the work within the authorized FY appropriation. These are submitted in response to the Project Office generated budget call (see Budgeting Subsystem, Section 6.0). Any changes to the approved plans during the FY that exceed the established CCB thresholds require CCB processing (see Change Control Subsystem, Section 11.0). This mode of operation affects the Oak Ridge National Laboratory and UNC Technical Services.
- o For Jacobs Engineering and MK-Ferguson the process is similar. Work is initially authorized via the contract and then refined annually through approval of each contractor's FY Management Plan and related Cost Plan. The Project Office initiates the contractual process by sending a memorandum to the cognizant Contracting

FIGURE 3.1 WORK AUTHORIZATION SUBSYSTEM

Officer transmitting the proposed Statement of Work and including a Procurement Request. The request is then issued to the contractor by the Contracting Officer in the form of a Task Agreement Request for Proposal.

The contractor's proposal provides the basis for negotiation of the Task Agreement scope, cost, and schedule. The Task Agreement may cover more than one FY, PWBS element, or site. Any changes to the Task Agreement contained in an approved Management Plan require Contracting Officer action and contract modification. Any changes to the plan during the FY that exceed the CCB thresholds require CCB processing.

- o For Salt Lake City remedial actions, the State of Utah functions as the RAC and operates under a cooperative agreement. Under this agreement, Utah is funded on a FY basis. The Project Office issues a budget guidance request to Utah for their authorized FY work. Utah submits Cost and Schedule plans for the work, including identification of the Federal and state funding shares.

4.0 SCHEDULE CONTROL SUBSYSTEM

4.1 BACKGROUND AND PURPOSE

The Schedule Control Subsystem provides a structured Project approach for generation of Project schedules and supporting participant schedules. This subsystem contains the key Project activities, site work plans, decision points, and milestones required to accomplish the work by September, 1993.

The purpose of the Schedule Control Subsystem is to assure that: (1) all Project work to meet interim critical need dates and the final completion date is planned and scheduled; (2) interfaces by and among Project participants are considered; (3) valid schedule information for making timely management decisions is provided; and (4) the basis for establishing the Project and participant PMBs is established.

4.2 SCOPE

The Schedule Control Subsystem is composed of a hierarchy of schedules which contain successively more detail from the UMTRA Project Master Schedule through lower level participant schedules as follows:

- Level 1. UMTRA Project Master Schedule (Figure 4.1).
- Level 2. UMTRA Sites Master Schedule and UMTRA Vicinity Property Schedule (Figures 4.2 and 4.3).
- Level 3. PSCE Site Summary Schedule (Figure 4.4).
- Level 4. IPMS (65 Point) Schedule (Figure 4.5).
- Level 5. Participant Work Package/Planning Schedules (Figure 4.6).

The upper three levels of schedules appear in the PSCE Report in bar-chart format with each level expanding the scheduled detail. They are updated annually during the report's revision to incorporate the Congressional authorized FY budget appropriation. Additionally, the Level 2 and 3 schedules are maintained and updated separately from the report as noted below.

Also in accordance with the Project Charter, the Project Office and the HQ DOE Program Office develop a set of "HQ-monitored" milestones for each upcoming FY. The milestones identified assist the Program Office in carrying out its program management responsibilities. Typically, these milestones represent the initiation or completion of key site activities on the PSCE Site Summary Schedules, significant management tasks, or Project plans. The status of the "HQ-monitored" milestones is reported to HQ DOE through the monthly and quarterly Project Reports (See Performance Reporting Subsystem, Section 9.0).

4.3 DESCRIPTION

The operation of the Schedule Control Subsystem assures that all Project participants proceed with schedule development using similar methods to meet common project objectives. Traceability is maintained

DATA DATE:	01 OCT 83
NETWORK START:	1342Z
FORECAST END:	20 SEP 83
REQUIRE END:	20 SEP 83

FY-87 BUDGET SUBMITTAL BASELINE
(NOTE: BEL - BEL/BOW)

[illegible]

Approved: Shadron
Date: 2-6-87

FIGURE 4.1 UMTRA PROJECT MASTER SCHEDULE

FIGURE 4.2 UMTRA SITES MASTER SCHEDULE

FIGURE 4.4 PSCE SITE SUMMARY SCHEDULE

SITE/GEN ACT	SPOOK					
ACTIVITY IDENTIFIER	ACTIVITY DESCRIPTION	FORECAST START	FORECAST COMPLETION	TARGET COMPLETION	FORECAST VARIANCE	STATUS
0501-15-020	SPK DEVELOP & ISSUE DRAFT CADSAR	14JUL66	5SEP66	5SEP66	0	FORECAST-ON-SCHED
0501-15-021	SPK NRC REVIEW DRAFT CADSAR	8SEP66	30CT66	30CT66	0	FORECAST-ON-SCHED
0501-15-022	SPK STATE REVIEW DRAFT CADSAR	8SEP66	30CT66	30CT66	0	FORECAST-ON-SCHED
0501-15-045	SPK GEO DRILL SOW/AWARD	31JAN66 A	17OCT66	17OCT66	0	STARTED-ON-SCHED
0501-15-051	SPK GEO DRILL FIELD WORK	20OCT66	28NOV66	28NOV66	0	FORECAST-ON-SCHED
0501-15-061	SPK GEO DRILL DATA ANAL/REPT	1DEC66	12DEC66	12DEC66	0	FORECAST-ON-SCHED
0501-15-075	SPK HYD DRILL SOW/AWARD	2DEC65 A	17OCT66	24OCT66	5	STARTED-AHEAD
0501-15-081	SPK HYD DRILL FIELD WORK	20OCT66	14NOV66	28NOV66	10	FORECAST-AHEAD
0501-15-091	SPK HYD DRILL DATA ANAL/REPT	17NOV66	6FEB67	6FEB67	0	FORECAST-ON-SCHED
0501-15-095	SPK PIT EXCAV SOW/AWARD	15JAN66 A	13OCT66	30CT66	-6	STARTED-BEHIND
0501-15-111	SPK PIT EXCAV FIELD WORK	20OCT66	14NOV66	14NOV66	0	FORECAST-ON-SCHED
0501-15-121	SPK PIT EXCAV DATA ANAL/REPT	17NOV66	28NOV66	28NOV66	0	FORECAST-ON-SCHED
0501-15-131	SPK ROGER'S REPORT	17NOV66	2JAN67	16JAN67	10	FORECAST-AHEAD
0501-15-171	SPK DEV FINAL CADSAR	12JAN67	3APR67	3APR67	0	FORECAST-ON-SCHED
0501-15-181	SPK PUB MTG/COMMENT/ISSUE FINAL CADSAR	6APR67	22MAY67	22MAY67	0	FORECAST-ON-SCHED
0501-15-200	SPK RADON MONITORING	30MAR67	31MAR67	31MAR67	0	FORECAST-ON-SCHED
0501-15-300	SPK INCLUSIONS	1MAY66	28MAY67	28MAY67	0	FORECAST-ON-SCHED
0505-15-001	SPK DEVELOP SCD/RAP	1JUN67	21AUG67	21AUG67	0	FORECAST-ON-SCHED
0505-15-011	SPK ISSUE DRAFT SCD/RAP	24AUG67	25SEP67	25SEP67	0	FORECAST-ON-SCHED
0505-15-021	SPK NRC REVIEW DRAFT SCD/RAP & COMMENT	28SEP67	13NOV67	13NOV67	0	FORECAST-ON-SCHED
0505-15-022	SPK STATE REV DRAFT SCD/RAP & COMMENT	28SEP67	13NOV67	13NOV67	0	FORECAST-ON-SCHED
0505-15-031	SPK DRAFT RAP REVIEW MEETING	14NOV67	27NOV67	27NOV67	0	FORECAST-ON-SCHED

FIGURE 4.5 IPMS (65-POINT) SCHEDULE

SITE/GEN ACT		SPOOK									
ACTIVITY CODE	ACTIVITY DESCRIPTION	EST. DUR.	P. 1	REM. DUR.	EARLY START	EARLY FINISH	LATE START	LATE FINISH	TOTAL FLOAT	IMPOSED DATES	
										(1ST)	(2ND)
0505-15-875	SPK RAP DOE-INHOUSE FINAL REV & CONCURRENCE	35			16SEP88	03NOV88	16SEP88	03NOV88	0		
0505-15-900	SPK RAP PUBLISH	30			04NOV88	15DEC88	04NOV88	15DEC88	0	CL	0
1000-15-001	SPK PK DESIGN	197			01OCT87	01JUL88	01OCT87	01JUL88	0	SE 01OCT87	
1503-15-135	SPK PSCR SUB-CONT & REPORTING (ARCH,BIO,HIST)	60			31OCT86	22JAN87	05DEC86	26FEB87	25		
1503-15-200	SPK NEPA PREP FACT SHEET	35			28APR87	15JUN87	28APR87	15JUN87	0		
1503-15-245	SPK NEPA DRAFT RPT. ASSMTS (ARCH,BIO,HIST)	20			23JAN87	19FEB87	12MAY87	08JUN87	77		
1503-15-250	SPK NEPA EDIT-WORD PROC (ARCH,BIO,HIST)	15			23JAN87	12FEB87	19MAY87	08JUN87	82		
1503-15-255	SPK NEPA DOE REV DRAFT ASSMTS (ARCH,BIO,HIST)	5			20FEB87	26FEB87	09JUN87	15JUN87	77		
1503-15-280	SPK NEPA DEV AIR NOISE IMPACTS	20			30JUN87	27JUL87	14JUL87	10AUG87	10		
1503-15-285	SPK NEPA DEV EXIST ENVIRO	15			23JAN87	12FEB87	30JUN87	20JUL87	112		
1503-15-290	SPK NEPA DEV EA APPND B DES-CALCS	15			30JUN87	20JUL87	30JUN87	20JUL87	0		
1503-15-295	SPK NEPA DEV EA SURFACE H2O IMPACTS	15			30JUN87	20JUL87	30JUN87	20JUL87	0		
1503-15-800	SPK NEPA DEV DEA & PEER REV	60			09JUN87	31AUG87	09JUN87	31AUG87	0		
1503-15-811	SPK NEPA DEA TAC REV & REL	20			01SEP87	28SEP87	01SEP87	28SEP87	0		
1503-15-813	SPK NEPA DEA EDITING -EDIT-UP	10			21JUL87	03AUG87	18AUG87	31AUG87	20		
1503-15-815	SPK NEPA PE/OGC AND AGENCY REVIEW EA	35			29SEP87	16NOV87	29SEP87	16NOV87	0		
1503-15-820	SPK NEPA DEA INCORP COMMENTS	10			17NOV87	30NOV87	17NOV87	30NOV87	0		
1503-15-821	SPK NEPA PRINT EA	12			01DEC87	16DEC87	01DEC87	16DEC87	0		
1503-15-822	SPK NEPA PE/OGC APPROVAL OF EA	30			17DEC87	27JAN88	17DEC87	27JAN88	0		
1503-15-824	SPK NEPA INCORP. COMMENTS AND PUBLISH EA	34			28JAN88	15MAR88	28JAN88	15MAR88	0		
1503-15-901	SPK NEPA PUBLIC COMMENT (EA)	25			16MAR88	19APR88	16MAR88	19APR88	0		
1503-15-904	SPK NEPA PREP FONS	18			20APR88	13MAY88	20APR88	13MAY88	0	CL	0
1503-15-113	SPK PSCR ACCESS PERMIT/LAND USE AGREEMENTS	40			22AUG86	16OCT86	12SEP86	06NOV86	15		
1503-15-400	SPK SLA ISSUE DRAFT	40			03AUG87	25SEP87	18AUG87	12OCT87	11	SE 03AUG87	
1503-15-450	SPK SLA ISSUE FINAL	40			01JUN88	26JUL88	22JUL88	15SEP88	37	SE 01JUN88	

FIGURE 4.6 PARTICIPANT WORK PACKAGE PLANNING SCHEDULES

throughout the schedule hierarchy by appropriate WBS codes and by retaining milestones in subordinate schedules which appear in higher level schedules.

The UMTRA Project Master Schedule is the overall Project schedule containing both Project and site activities. It presents summary coverage of the critical activities at PWBS Levels 2 and 3 that lead to successful Project completion. The UMTRA Master Site and Vicinity Property Schedules expand the UMTRA Project Master Schedule by site and provide a summary of individual site activities. These schedules serve as the FY site schedule baseline. They are revised during the FY based on the Congressional appropriation, mid-year replanning, incorporation of CCB actions approved by the Project Manager, and FY+1 budget submittals.

The PSCE Site Summary Schedule is composed primarily of critical PWBS Level 2 and 3 elements that support the Master Site/Vicinity Property Site schedules. The PSCE Site Summary Schedule is in two versions, represented by different bars, on the same schedule (see Figure 4.4). One bar represents the FY baseline schedule for the site from the Master Site/Vicinity Property Schedules and the other bar represents the working schedule, which is the current approved Project Office work plan for the site. As noted above, the baseline schedule is revised per FY appropriation and CCB action; whereas, the working schedule is updated monthly and reflects the participant's latest forecast start and completion dates approved by the Project Office. The forecast completion date from the working schedule is compared to the target completion date for the same activity from the baseline schedule, thereby measuring progress, or variance against plan, on a monthly basis. Schedule variance analysis is conducted by the participants to explain any slippage greater than 30 days between the baseline and working schedules. The reasons for the potential or actual delay are analyzed and recommended corrective actions identified.

The IPMS (65 Point) Schedule integrates the activities of each participant associated with the site. This schedule is referred to as the 65 Point Schedule because originally there were 65 key activities identified to track each site. Status is reviewed monthly at a meeting attended by the Project Office, TAC, and MK-Ferguson staff responsible for site-specific activities/schedules. UNC-TS and ORNL vicinity property status is provided by the PIC Group based on the two participants' input. The status of the key activities is addressed and the scheduling changes fully coordinated. "What if" exercises are conducted to assess the potential impact of changes. Additionally, this meeting addresses potential CCB items (see Table 11.2). Based on the results, the schedule is updated and produced in a tabular barchart format with a one-year window (i.e., one month of history and 11 months of look-ahead).

A tabular IPMS (65 Point) Schedule is transmitted to the various Project participants and the Nuclear Regulator Commission, states, HQ DOE, Environmental Protection Agency, and Department of Interior to support their respective agency planning for reviewing Project documents. A barchart IPMS (65 Point) Schedule is included in the Site Progress Report.

The participant Work Package/Planning Schedules are updated monthly by each participant and are used to support the IPMS (65 Point) Schedule updating process. These schedules contain the work activities to the participant's cost account level and are resource-loaded, thus producing the participant's PMB. Schedule variance analysis is conducted per thresholds

established with each participant and the results reported in the participant's monthly Status Report. Table 4.1 summarizes the preceding discussion.

To provide for schedule control, all baseline site and Project-level schedules are signed and dated by the UMTRA Project Manager/Site Engineer prior to release. As schedules are updated to reflect the latest status, the Project Site Engineers enter the revision date on the schedules to provide an indication that it has been updated against the baseline schedules. As work progresses, the various Project schedules are statused by the PIC Group and are revised through approved CCB action to reflect projected trends or changes in Project scope, site priorities, or technical approach. Additionally, schedule information to be released outside of the Project Office is first cleared with the Project Office.

4.4 IMPLEMENTATION

The following discussion on subsystem implementation is related to the corresponding numbered blocks of Figure 4.7.

1. Project Office - Issue Schedules

Project schedules (Levels 1-4), based on participant input per Project Office guidance, are generated by the PIC Group, approved by the UMTRA Project Manager, and issued to each participant for guidance.

The Levels 2-4 schedules constitute the site baseline schedules for the authorized work to which participants direct their efforts. They are issued to reflect the authorized FY appropriation, mid-year replanning, and approved CCB actions.

2. Participants - Prepare Schedules

The participants prepare their schedules in support of the baseline schedules. These schedules are used for controlling the work and provide the basis for monthly progress reporting.

3. Participants - Status Schedules

The participants status their schedules and based upon performance develop proposed adjustments to the IPMS (65 Point) Schedule, as appropriate, and identify potential items for CCB processing (see Change Control Subsystem, Section 11.0).

4. Project Office and Participants - Conduct IPMS (65 Point) Schedule Coordination Meeting

Monthly, Project Office, TAC, and MK-Ferguson staff responsible for the site-specific activities contained in the schedule meet with PIC Group scheduling to: (1) status the schedule and coordinate any changes; (2) discuss problems and corrective actions; (3) review any trends and proposed CCB items, assess impact, and alternatives ("what if" exercises); and (4) identify items for CCB action.

Table 4.1 UMTKA Project schedules

Schedule level	Title/format	Schedule level supported	Description and purpose	Input	Approved by	Updated	Prepared for Project Office by
1	UMTKA Project Master Schedule/ Barchart	--	Presents overall Project status through critical PWBS Level 2 and 3 elements. Used for Project/Program briefings and PSCE Report.	HQ DOE/AL/ Project Office	Project Office	Annually	PIC Group
2	UMTKA Site Master Schedule and UMTKA Vicinity Property Schedule/ Barcharts	Schedule Level 1	Establish Project schedule baselines for processing sites and vicinity properties. Used for planning and control and briefings.	Project Office/ Participants	Project Office	As Required ^a	PIC Group
				Project Office/ Participants	Project Office	As Required	PIC Group
3	PSCE Site Summary Schedules/ Barcharts	Schedule Levels 1-2	Expand site base-lines, establish site working schedule. Used to assess progress against plan for processing sites.	Project Office/ Participants	Project Office/ Participants	Baseline: As required Working: Monthly	PIC Group

Table 4.1 UMTRA Project Schedules (Concluded)

Schedule level	Title/format	Schedule level supported	Description and purpose	Input	Approved by	Updated	Prepared for Project Office by
4	IPMS (65 Point) Schedule/Bar-chart and Tabular Format	Schedule Levels 1-3	Details site baseline and working schedules. Used as common schedule vehicle by Project Office and participants for planning and controlling and determining trends.	Project Office/Participants	Project Office/ TAC/M-K Ferguson	Baseline: AS Required Working: Monthly/Tri-Annually	PIC Group
5	Participant Work Package and Planning Package Schedules/Tabular Format	Schedule Levels 1-4	Further details the participants portion of the site baseline and working schedules. Used for activity planning, budget time phasing, earned value measurement, and controlling.	Participants	Participants	Baseline: AS Required Working: Monthly	Participants

^aAs required = The Project Baseline Schedule, and in turn all Site Baseline Schedules, are revised based upon: (1) approved CCB actions during a FY; (2) authorized FY appropriations; and, (3) mid-FY replanning.

FIGURE 4.7 SCHEDULE CONTROL SUBSYSTEM

5. Project Office - Issue Revised Baseline Schedules

Revised baseline schedules are issued by the Project Office to reflect re-direction of the Project (e.g., after receipt of the authorized FY appropriation, mid-year replanning, and approved CCB actions). The revised baseline schedules direct future participant scheduling efforts. HQ DOE may initiate a change to baseline schedules by coordinating with the Project Office a change to a HQ monitored milestone to reflect mid-year and/or year-end Project reviews. After agreement, these changes will be incorporated into the Project baseline schedules and lower level schedule adjustments will be made accordingly.

6. Participants - Revise Schedule

All lower level schedules are revised by the responsible participants to conform to the latest baseline schedules. All major milestones should be traceable from lower level schedules to the UMTRA Site Master and Vicinity Property Schedule. These revised schedules are submitted to the CCB for approval. If appropriate, the revised participant baseline schedule is incorporated into the appropriate work authorization document.

7. Participants - Prepare Schedule Reports

Participants report schedule status on a monthly basis per Project Office direction (Performance Reporting Subsystem, see Section 9.0).

The schedule reports are reviewed and analyzed by the PIC Group for the Project Office (see Analysis Subsystem, Section 10.0). The reports serve as the basis for developing various Project level reports and other reports as may be directed by DOE and for identifying corrective actions or items for CCB consideration.

8. Participants - Take Corrective Actions

Each participant implements appropriate corrective actions to alleviate unfavorable schedule trends or problems.

5.0 COST CONTROL SUBSYSTEM

5.1 BACKGROUND AND PURPOSE

The Cost Control Subsystem provides for: (1) identifying all Project costed work; (2) controlling to approved Cost Plans; (3) measuring cost performance against plan; (4) collecting related cost data; and (5) reporting status by Project Office specified reporting elements.

The subsystem purpose is to control to the approved Project cost baseline and to provide cost performance data for timely management decisions. The cost baseline status is reviewed as a result of the authorized FY appropriation, at mid-FY, at FY year end, and through the CCB process during the FY. Performance against the FY cost baseline is provided monthly by each participant in the IPMS Report submitted to the Project Office.

5.2 SCOPE

The Cost Control Subsystem develops and maintains the cost baseline for controlling Project work based on the approved total estimated cost (TEC) contained in the Project Plan. Participants time-phase their cost baselines, thereby establishing performance measurement baselines (PMBs) for their authorized work in support of the Project cost baseline. The participants assure that: (1) the planned budgets are consistent with the authorized Budget Outlay; (2) performance is measured and reported against the PMBs; and (3) changes to the PMBs that exceed the CCB thresholds (see Change Control Subsystem, Section 11.0) are formally controlled and approved through the CCB and the contractual process.

The Cost Subsystem also requires Estimates At Completion (EAC) for Project work. The Project Office, with PIC Group assistance, reviews and develops such EACs for Project work. This process involves: (1) discussing any problems with the participant; (2) verifying that the participant's EAC for the segment of work is accurate; (3) comparing the EAC with the authorized Budget Outlay and Funds Status; and (4) independent assessments of estimated cost conducted by the PIC Group. In addition to the above, the data are analyzed to determine if there are any irreversible trends that need to be analyzed for incorporation into the EAC and possible CCB action. The EAC process includes development of EACs for a Task Agreement/contract, a selected site, WBS level or WBS element, the current FY, and for the Project duration.

5.3 DESCRIPTION

Since the participants control the resources used to perform work on the Project, cost control is their responsibility. The Project Office overviews this responsibility by: (1) concurring in contract/Task Agreement target values and approving FY Management Plans; (2) analyzing participants' monthly IPMS Reports and conducting periodic status reviews; and (3) working with the participants to improve Project cost performance.

The Cost Control Subsystem assures that: (1) the Project cost baseline is consistent with the funds available for obligation and expenditure in the FY and for the funding profile planned to Project completion; (2) each participant establishes a time-phased budget baseline for the FY, contract/Task Agreement, and to Project completion; (3) the monthly participants' IPMS Reports contain performance against the approved cost baseline and provide a concise narrative assessment of status, including variance explanation for those reporting elements that exceed the cost variance reporting thresholds established for each participant; and (4) the cost baseline is modified only through the FY planning or CCB process.

Cost planning and control is exercised within the framework of the PWBS/CWBSs. The participants' PMB is directly related to the scheduled milestones planned to occur within the relevant time period. Performance against the PMB is expressed in terms of the value earned for the work performed, actual costs incurred for the work performed, and the costs estimated to complete the work.

Flexibility and control for in-scope changes to the PMB that do not exceed CCB thresholds are accommodated by the establishment and maintenance of a Management Reserve under the control of the participant. An Undistributed Budget account may be established to temporarily hold budgets for authorized work before issuance to the responsible participant's organization.

5.4 IMPLEMENTATION

The following discussion on subsystem implementation is related to the corresponding numbered blocks of Figure 5.1.

1. & 2. Project Office and Participants - Negotiate Target Values

The Project Office negotiates a target value for the contract or Task Agreement with each contractor. This process is refined, for the FY, through approval of participants' Management Plans. The approved contractual and FY values become the goal against which cost performance is measured and reported.

3. Participants - Establish PMB

The participants budget the work at the cost account level (or lower) within the overall constraints of the target value for the relevant time period (see Performance Measurement Subsystem, Section 8.0). The budgets (Budget Cost for Work Scheduled) are time-phased to form the PMB per the authorized schedule baseline and are consistent with the manner in which actual costs will be collected. These budgets are expressed in terms of cost elements such as direct costs (labor, material, travel), indirect costs (overhead and general and administrative expenses), and other direct costs and are directly relatable to scheduled tasks so that objective assessments can be made concerning accomplishment of work associated with the expenditure of resources.

4. Project Office - Reviews PMBs

The Project Office, with assistance from the PIC Group, assures the PMBs are consistent with the negotiated target value and with the approved schedule baseline. Any questions or modifications required are discussed with the participants and appropriate corrections are made. The participants' PMBs for the relevant time period then serve for tracking Project cost baseline status and potential impacts thereto and for controlling changes.

5. Participants and Project Office - Measure and Report Cost Performance

The participants measure performance against their PMB and report cost performance monthly both internally and to the Project Office (Performance Reporting Subsystem).

Both the participants and the Project Office use the reports and knowledge of the work to analyze the current status, develop EACs, and recommend management actions. The recommendations are incorporated into participants' and Project reports (Performance Reporting Subsystem). The data also are a source for input into the: (1) Budgeting Subsystem to be used in establishing the upcoming FY budget submittal; (2) Funds Management Subsystem to track funding requirements for completing the FY work; (3) revision of the FY cost baseline to reflect the authorized FY appropriation and the mid-year replanning of the current and future FY cost baselines; and (4) the Change Control Subsystem for determination if CCB action is required.

6. Participants - Take Corrective Action

Each participant implements appropriate corrective actions to alleviate unfavorable cost trends and problems.

6.0 BUDGETING SUBSYSTEM

6.1 BACKGROUND AND PURPOSE

The Budgeting Subsystem provides guidance for planning and acquiring the funds required to support completion of the Project within the approved Project Total Estimated Cost (TEC) as planned in the PSCE Report. The purpose of the Budgeting Subsystem is to plan for the acquisition of the necessary funds to optimize Project cost, schedule, and technical performance.

6.2 SCOPE

The Budgeting Subsystem is managed by the Project Office with input from Project participants. It includes: (1) planning for the annual budget submittal; (2) FY replanning based on the authorized appropriations, mid-year correction, and CCB actions; (3) planning and control of contingency; and (4) the process of examining and re-estimating budget requirements to Project completion. Through this subsystem, the Project Office monitors and assures that participant planned budgets are consistent with the authorized FY funding and the Project's TEC.

6.3 DESCRIPTION

The Budgeting Subsystem assures that the Project Office is adequately planning for the current fiscal year, as well as conducting and assessing the long range planning necessary to complete the Project. The budget process starts with the revision of the participants' Management Plans based upon Project Office budget guidance. After review of the plans with the participants, final adjustments are made by the Project Office and field budgets are prepared and submitted to AL for review and submittal to HQ DOE as part of the annual budget call. The budget is consolidated and reviewed and revised, as appropriate, by HDQ DOE, who then submits the budget request to the Office of Management and Budget (OMB) for review. Following the review process the budget is sent to Congress for funds appropriation.

6.4 IMPLEMENTATION

Budget development is an approximate two-year cycle starting with the HQ DOE annual budget call in January of year xx and ending in October of xx+1, as depicted in Figure 6.1. The following discussion on subsystem implementation is related to the numbered blocks in Figure 6.1. The term "BY" refers to the Budget Year of the budget currently before Congress. The BY leads the FY by one year (e.g., BY 1989 is processed in FY 1988). The term "BY+1" refers to the Budget Year immediately following (1990 in this case).

1. Project Office - Prepare Budget Call (BY + 1)

Each January DOE requests information from its program offices for the funding required to support their programs for BY+1.

FIGURE 6.1 BUDGETING SUBSYSTEM

The program offices, in turn, issue instructions through the DOE Controller to the field offices for preparation of the various schedules, including financial, which will be used as the data source for the DOE budget submission to OMB.

Based on the HQ DOE guidance, the AL Budget and Resources Management Division (BRMD) prepares budget input instructions and transmits them to the Project Office. The Project Office then prepares a budget call which addresses general as well as Project-specific instructions and transmits the guidance to the participants.

2. Project Participants - Update Management Plans

In accordance with the Project Office guidance (April time frame), the participants revise their Management Plans (BY + 1 to Project completion; September 1993 or earlier depending on participants role), including the Cost and Schedule Plans, and submit them to the Project Office for review and approval. The format used from year to year may vary according to instructions from HQ DOE and Project Office requirements.

5. Project Office - Updates Pertinent Documentation and Submits Internal Review Board (IRB) Budget (BY + 1)

The Project Office drafts a revised PSCE Report to incorporate changes based on the IRB Budget Call (BY+1) and reviews the Project Charter, Project Plan, and Project Management Plan for possible revisions. The Project Office submits the IRB Budget (BY+1), i.e., the Field Budget (BY+1) with HQ changes incorporated, to HQ DOE and distributes the draft PSCE Report for internal review and comment.

6. Project Office - Finalizes Documentation

The Project Office finalizes the PSCE Report and the Project Planning documentation and supports HQ DOE in submission of the IRB Budget (BY+1) to OMB. OMB directs changes, if any, to the IRB (BY+1) budget which is then referred to as the OMB (BY+1) Budget.

7. Project Office - Incorporates OMB (BY + 1) Budget Changes

The Project Office incorporates the OMB budget (BY+1) changes which, as of October 1, becomes the OMB BY budget and submits it back to HQ DOE. The OMB Budget (BY) is reviewed and revised by Congress and the resulting budget is referred to as the Congressional Budget (BY) and serves as the basis for the authorized FY appropriation for the Project. Any changes are incorporated into the PSCE Report and the report is published in February.

7.0 FUNDS MANAGEMENT SUBSYSTEM

7.1 BACKGROUND AND PURPOSE

The Funds Management Subsystem provides for managing the Project funds acquired through the Budgeting Subsystem. The purpose of the Funds Management Subsystem is to use the existing funds effectively to accomplish the workload for which they were budgeted.

7.2 SCOPE

The Funds Management Subsystem includes the FY budget execution related documentation, and management of the total available funds (state and Federal) to the Project. The subsystem concerns itself with the acquisition and maintenance of the data necessary to control obligations and expenditures against allotted funds.

7.3 DESCRIPTION

The Funds Management Subsystem assures that the Project Office plans for the application and accounting of funds required to accomplish work for the current FY and assesses the impact of any carry over on the next and future FYs planning. The subsystem is based upon the Project Office prepared Funds Allocation Plan. This plan presents the planned funding usage by contractor, including Project contingency which is identified to a participant (allocated) or to a general account (unallocated). This plan is updated monthly and tracks the actual status of the obligations to participants. A contingency analysis is performed quarterly (or more often if required) to plan the use of any remaining allocated or unallocated funding contingency.

Once Congressional action defines the funding limits for a FY year, HQ DOE issues advice of allotments to the DOE field offices based on the HQ DOE Financial Plan. The Financial Plan represents planned funds usage by programs within DOE and the projects which comprise these programs. After the allotments have been made to AL, they are suballotted to the various projects under AL cognizance. The UMTRA Project suballotment becomes the financial limit at which the Contracting Officer may obligate the Government to pay for goods and services rendered.

7.4 IMPLEMENTATION

Funds management is tied to the current FY budget cycle and begins with the appropriation of Project funds by Congress. The following paragraphs explain the process and correspond to the numbered blocks of Figure 7.1.

1. Project Office - Requests Participants' Management Plans

Once the Project Office has been informed of the authorized FY appropriations via program guidance letters from HQ DOE, the

FIGURE 7.1 FUNDS MANAGEMENT SUBSYSTEM

Project Office formally requests each participant to submit revised Management Plans, including identification of: (1) prior FY uncosted obligations; (2) FY obligational authority (Budget Authority (BA)) required; (3) FY anticipated cost (Budget Outlay (BO)) against obligational authority (uncosted obligations plus BA); and (4) schedule milestones.

2. and 3. Participants - Submit Updated Management Plans for approval

These plans are reviewed by the Project Office, with assistance from the PIC Group, and appropriate changes coordinated with the participants. Subsequent budget submittals are supported by the participants as directed by the Project Office. These plans are then submitted to the CCB. The CCB reviews and approves the plans thereby establishing the PMB for each participant for the current FY.

4. Project Office - Prepares Funds Allocation Plan

The plans are consolidated and a Funds Allocation Plan is developed by the Project Office to identify planned FY funding to each participant. Project contingency (allocated and unallocated) tailored to the actual funding is also identified for unforeseen work. The allocated contingency is identified by each participant as part of the Management Plan update and managed by the Project Office. After approval of the Funds Allocation Plan by the Project Manager, the Project Office initiates contract modifications for Jacobs and MK-Ferguson to obligate operating and capital funds. After required certification of funds by BRMD, the Contracting Officer obligates the funds and, as appropriate, establishes the initial value for the Limitation of Government Obligation clause of the contract. Funding for ORNL and UNC Technical Services is allotted in Financial Plans through the Approved Funding Program. The Funds Allocation Plan is updated to reflect the funds planned and obligated to all the participants.

5. Project Office - Revises Funds Allocation Plan

The Project Office receives various reports (see Performance Reporting Subsystem, Section 9.0) containing funds related data. These include: (1) actual cost and funding forecasts; (2) Financial Information System (FIS) reports based on contractor billings from the AL Financial Management Division; and (3) Status of Obligational Authority reports from HQ DOE. These reports are used to monitor the Project Office estimate of funding and costing requirements for completing the FY work.

The Funds Allocation Plan is adjusted monthly and funding and work authorization revisions are initiated as appropriate. This process uses information from routine contingency analysis, the Change Control Subsystem, Project reviews, and FY end status evaluation to maximize the allocation of funds.

The Project Manager approves the change to the Funds Allocation Plan and the funding and work authorization modification. The funds are then obligated to the participants as noted above.

6. Participants - Revise Management Plans

If the established thresholds have been exceeded, the Management Plans are revised to reflect the funding and related work authorization modifications and the participant submits proposed changes to the CCB. This action maintains consistency between the funding changes and maintenance of the cost baseline.

A year end review is held by the HQ DOE Program Office and the current year obligations/costs are reconciled by the Project Office. Project participants revise their Management Plan as directed by the Project Office in accordance with Item 1 above.

8.0 PERFORMANCE MEASUREMENT SUBSYSTEM

8.1 BACKGROUND AND PURPOSE

The DOE CSCSC provides the basis for the Performance Measurement Subsystem. The subsystem assures consistent methodology for assessing and measuring the earned value of work performed or in-process. The subsystem requires objective methods to be used consistently by the participants in work measurement. The value of work accomplished, quantified in terms of budgeted resources, is the Budgeted Cost for Work Performed (BCWP) and provides visibility of cost and schedule performance.

8.2 SCOPE

The Performance Measurement Subsystem functions at the participant's cost account level to provide monthly status information on Project activities.

An individual in the participant's organization, referred to as a Cost Account Manager, controls the resources for accomplishing the work within the cost account and is responsible for managing the work to the assigned budget and schedule, monitoring its progress, reporting status, forecasting costs at completion on a monthly basis, and assuring the technical quality of the product.

8.3 DESCRIPTION

Application of the DOE CSCSC requires that contractors generate the following key performance measurement data elements.

- o Budgeted Cost for Work Scheduled (BCWS).
- o Budgeted Cost for Work Performed (BCWP).
- o Actual Cost of Work Performed (ACWP).
- o Budget at Completion (BAC).
- o Estimate at Completion (EAC).
- o Cost Variance (CV).
- o Schedule Variance (SV).
- o At Completion Variance (ACV).

Each of these major elements is determined at the cost account level as a minimum and is summarized up through the CWBS and organizational structure for reporting to participant and DOE management. Through this "roll up," it is possible to report on major WBS elements by site and total by the various participants.

Methods and techniques for determining the critical performance measurement data element, BCWP, vary among participants because of the different types of work performed. The methods used to determine earned value are described in the individual participant's Management Control System Description. Because of the importance of the BCWP, the common value used to calculate cost and schedule variances, the Project Office approves the participant's method for BCWP determination during the participant's management control system acceptance process.

Comparing the BCWP to the BCWS on a period and cumulative basis produces a schedule variance and provides schedule status in terms of dollars of work accomplished (or not accomplished). This schedule variance does not indicate whether scheduled milestones are being met. This information is derived from the formal scheduling system. When the schedule variance exceeds pre-established thresholds, agreed to by the Project Office and participant, the participant will be required to submit a variance analysis. This variance analysis discusses the basis for the variance, its impact, and planned corrective action. If this variance continues and is caused by a technical change or Project Office direction, appropriate CCB action is instituted.

Comparing the BCWP to the ACWP on a period and cumulative basis produces a cost variance which shows if work accomplished has cost more or less than was budgeted for the work. Again, if the threshold is exceeded, a variance analysis is required.

8.4 IMPLEMENTATION

After the initial work authorization, the participant implements a management control system in compliance with the modified application of the DOE CSCSC. As part of this process, the participant establishes time-phased cost accounts and determines the methods for measuring BCWP for completed and in-progress segments of work.

Once a participant's management control system is fully operational, a DOE review team conducts an acceptance review of the system to assure its compliance with the CSCSC. This review includes evaluation of both the Management Control System Description, and the system in operation. The methods for determining the BCWP are analyzed and any deficiencies in the methods are identified for participant corrective actions.

Following system acceptance, quarterly or semi-annual system surveillance is performed by DOE to assure data integrity and reliability. Any recommendations resulting from the surveillance reviews are provided formally to the Project Manager and the participant in writing. Assistance in the system review and surveillance effort is provided by the PIC Group.

Participant requested changes to their accepted management control system are submitted to the Project Office explaining the reason for the request and documenting the impact of the change. These requested changes are submitted to the Project Office for review. These changes are reviewed relative to their impact on reporting, control requirements, and the CSCSC. If the change is approved, the contractor will be formally advised by the Project Office or Contracting Officer, as applicable.

Figure 8.1 depicts subsystem implementation. The following narrative description is related to corresponding blocks of the figure.

1. Participants - Establish Management Control System

Participants establish systems in compliance with the modified applications of the DOE CSCSC.

FIGURE 8.1 PERFORMANCE MEASUREMENT SUBSYSTEM

2. Project Office - Accepts Participant's System

The Project Office assures each participant's system meets the DOE CSCSC and conducts periodic surveillance thereafter to assure their continued acceptability.

3. and 4. Project Office and Participants - FY Baseline Establishment

The participants incorporate the Project Office approved FY baselines for their authorized workload planning establishing the FY PMB and providing the basis for performance measurement.

5. Participants - Determine Current Status and Prepare Reports

Using the approved methods for BCWP, the Cost Account Manager determines performance for the period

Each participant then prepares an IPMS Report summarizing cost account data and related variance analysis to the reporting level and submits the report to the Project Office, with a copy to the PIC Group (see Performance Reporting Subsystem, Section 9.0, and Analysis Subsystem, Section 10.0).

The performance data from all participants are reviewed and analyzed by the PIC Group for the Project Office. The PIC Group coordinates with each participant any questions or clarifications required prior to finalization of Project reports.

9.0 PERFORMANCE REPORTING SUBSYSTEM

9.1 BACKGROUND AND PURPOSE

The Performance Reporting Subsystem provides the guidelines to be utilized used for producing the reports required for managing Project and site activities. The subsystem is based on receiving, integrating, analyzing, and reporting information on the cost and schedule aspects of the technical, social, political, and environmental processes that impact Project operations. The purpose of the Performance Reporting Subsystem is to facilitate Project decision-making through timely, thorough, orderly, and meaningful reporting on operations.

The structure, content, frequency, and distribution of Project reports are determined by the requirements in the Project Charter, DOE directives, and Project Office direction to the participants. The preparation of the reports is the responsibility of the PIC Group. The participant's performance data are integrated, summarized, analyzed, and supplemented, as necessary, and included in the Project Manager's Progress Report (PMPR), Project Progress Report (PPR), Site Progress Report (SPR), Vicinity Properties Progress Report (VPPR), and other reports as directed by the Project Office.

9.2 SCOPE

The scope of work reported by each participant is based on the authorized workload and the level of detail required for Project and Program Management. The reports produced are by site and participant for the relevant time period.

The individual work authorizations establish each participant's reporting requirements. These are tailored by Project Office direction to meet the needs for preparing the monthly Project reports. AL reports are also used by the Project Office to assess real estate, legal, procurement, financial, and funding status integrated into the reports.

The activities of cooperating agencies, local government entities, public groups/task forces, and other organizations having Project involvement or interface are also covered in the reporting.

9.3 DESCRIPTION

The Performance Reporting Subsystem provides the necessary information for consistent and realistic evaluation of Project status. Information reported is either qualitative or quantitative in nature, and describes the technical, schedule, and cost statuses of the Project along with variance analysis and management action recommendations. Tables 9.1 and 9.2 list the participant and Project documentation and reports.

Additionally, the PIC Group coordinates the conduct of various meetings for the Project Office. The meetings provide a forum for exchange of information on Project political issues, funding, cost, schedule, and technical performance status. The meetings conducted are identified in Table 9.3.

Table 9.1 Participant prepared documentation and reports

Report/document	Frequency	Content
Management Plan	Bi-annually, as required	Summary description of the contractor's Project organizational role and responsibilities, and a description of the policies, methods, and procedures used by the contractor for planning and managing work. Includes Cost and Schedule Plans for the FY and to Project completion.
CWBS Dictionary	One-time, revised as required	Complete work breakdown structure for the contract, extended from the PWBS, with definitions for each element.
Funds Requirement Report or Funding Forecast/Actuals Report	As Required	Time-phased plan for commitments, accrued costs, and billings to DOE for authorized and forecast work.
IPMS Report	Monthly	FY cost and schedule reporting; narrative cost/schedule progress, problems, variances, technical achievements; and identification of proposed management actions.
Weekly Activity Status Report	Weekly	Summary of the past and upcoming weekly activities.

Table 9.2 Project Office prepared documentation and reports

Report/document	Frequency	Content
Project Plan	One-time, revised as required	Summary description, mission, objectives, and acquisition strategy of the Project.
Project Charter	One-time, revised as required	Organizational responsibilities, interfaces, and policies for managing the project.
Project Management Plan	One-time, revised annually	Plans, organization, schedule, resource requirements, performance measurement, and planning and control systems necessary for managing the Project.
Project Management Control System Manual	One-time, revised as required	Methods and procedures used to manage the project work.
Project Schedule and Cost Estimate Report	Annually	Baseline schedules and cost estimates for each designated site and related vicinity properties.
Project Work Break-down Structure Dictionary	One-time, revised as required	PWBS extended by contractors to include all CWBSs.
Project Master Schedule	Annually	Baseline schedules containing Project Control Milestones to which all other scheduling effort is directed.
Sites Master Schedule	Annually, revised as required	
PSCE Summary Schedule	Monthly	
IPMS Schedule	Monthly	
Approved Funding Program	Annually, revised as required	Status and distribution of funds.
Project Manager's Progress Report	Quarterly	Summary of funding/cost and milestone statuses, significant emerging trends, and problems and solutions.
IPMS Trend Report	Monthly	Participant FY Cost Plans, selected milestones, and potential Change Control Board items by contractors and by contractor/site.

Table 9.2 Project Office prepared documentation and reports (Concluded)

Report/document	Frequency	Content
Site Progress Report (SPR)	Monthly	Narrative on plans and progress, management action required, variances analysis, cost and schedule data for processing site related activities by contractor (TAC, MK-Ferguson, and Utah) by FY.
Vicinity Property Progress Report (VPPR)	Monthly	Cost and schedule status of vicinity properties by site by participants (Oak Ridge National Laboratory, UNC-Technical Services, MK-Ferguson).
Project Progress Report (PPR)	Monthly	Overall Project status by contractor by FY.

Table 9.3 UMTRA Project meetings/briefings

-
- o AL Project Manager's Briefing
Frequency/Location: Monthly/AL Complex
Date: Third Wednesday
Purpose: Provide Project overview assessment by the Project Manager to AL senior staff.

 - o DOE Project Office Meeting
Frequency/Location: Weekly/Project Office
Date: Friday
Purpose: Discussion of current site-specific activities and critical items by the DOE Project staff based on participant weekly status reports.

 - o Project Progress Report Review
Frequency/Location: Monthly/Project Office
Date: Friday
Purpose: Review of Project Progress Report (status, issues, and problems). Conducted by the PIC Group for Project and participant management.

 - o UMTRA Project/Review Meetings
Frequency/Location: January (Quarterly Review); April (Mid-Year Review); July (Quarterly Review); and October (Annual Review)/Project Office
Date: Wednesday
Purpose: Provide detailed status of Project to the Project Manager and Program Office staff. Emphasis is placed on vicinity property management, Project baseline status, and status of monitored milestones.

 - o Remedial Action Program Review
Frequency/Location: Annually/Various
Date: Varies
Purpose: Round table discussion on current status, problems, and concerns on the projects within the DOE Remedial Action Program and provide the various Project personnel with an opportunity to discuss items of common interest and concern.

 - o UMTRA Project States/Tribes Status Meeting
Frequency/Location: Periodically/Various
Date: Established by States/Tribes/Project Office
Purpose: Provide Project status information and promote direct exchange of ideas; work on problems of mutual concern between participating states, tribes, and Project staff.
-

9.4 IMPLEMENTATION

The Project Office establishes the formal participant reporting requirements (frequency, content, and distribution). Once the participant-prepared IPMS Reports are received by the PIC Group and the data have been analyzed, the information is integrated with Project Office generated data and is used to prepare the Project Reports.

Project level plans are prepared to comply with the MSA requirements or to fulfill a Project need. These plans are reviewed periodically, as noted in Table 9.2, by the PIC Group for the Project Office.

The Project Manager has overall responsibility for conducting Project meetings and for designating attendees and approving meeting agendas. The preparation for the meetings is coordinated between the Project Office and the PIC Group.

10.0 ANALYSIS SUBSYSTEM

10.1 BACKGROUND AND PURPOSE

The Analysis Subsystem involves evaluation of data describing current Project/site status. The purpose of the analysis subsystem is to assure optimal resource application and accomplishment of the Project scope within the approved cost and schedule parameters. The Analysis Subsystem directly supports the Change Control Subsystem (Section 11.0).

10.2 SCOPE

The scope of the Analysis Subsystem is based on the cost, schedule, and technical objectives documented in the Project Plan and detailed in the Project baseline. Project performance is analyzed against these baselines.

10.3 DESCRIPTION

The Project Plan implements the provisions of the Act and the Project Charter and identifies the TEC and schedule for accomplishing the Project mission. The Project and participant schedules contain milestones by site and participant. These support completion of the Project work within the guidelines established by the budget submittal on FY basis. The PSCE Report supports the budget submittals.

Additionally, prior to the beginning of each FY, the UMTRA Project Office and HQ DOE develop a set of schedule control milestones and thresholds for reporting purposes. The thresholds for cost and schedule performance assessment reporting are established uniformly on a site basis. Any difference between a site's planned and actual performance, which exceeds plus or minus 15 percent or schedule slippage of 30 days, is addressed. Notification and explanation of cost and schedule variances exceeding these thresholds is provided in a variance analysis included in the quarterly PMPR. In addition to the thresholds identified for cost and schedule, any change required in performance objectives is reported in the PMPR.

Analysis of Project status information normally occurs at the Project/site/participant levels. For participants it occurs at the cost account level. After work is authorized to a participant, cost accounts are budgeted and scheduled, thereby establishing the participant's PMB. As work progresses, performance is measured, analyzed, summarized, and reported by the participant at the site level based on cost account performance. These performance data are reported to the Project Office and integrated into the Project reports.

Analysis of current Project, site, and participant status is conducted by the PIC Group for the Project Office in coordination with the participants. Latest actual schedule progress, financial status, technical performance, and other values are compared with their planned levels. Deviations are analyzed for their significance; potential interface impact

problems are determined. The resulting assessments provide a basis for Project management decisions relative to the defined and authorized work including re-direction of Project resources toward meeting the established control milestones.

10.4 IMPLEMENTATION

The analysis phase begins with the receipt of monthly IPMS Reports from participants. The first step in the analytical process conducted by the PIC Group is to assure that the data are complete and accurate. If reported values exceed established thresholds and variance analyses are not included, the participant is requested to provide the necessary explanations.

Next, interrelationships between values (schedule and cost) are reviewed for consistency. These comparisons provide further verification of the data and develop an understanding of the current Project status. The analysis then proceeds as follows:

o Cost analysis

At the Project level the BAC is compared to the EAC for each participant to assess the impact on the Project TEC. Any significant variance is analyzed by reviewing the specifics provided by each participant to identify possible scope of quantity changes, trend implications, and CCB threshold impact. The results are contained in the Project Progress Report which includes an analysis of the individual participant's performance.

For the Site Progress Report, identification and evaluation of the data are at PWBS Level 4, i.e., the Site by Site Characterization, Site Conceptual Design/Remedial Action Plan, National Environmental Policy Act activities for the TAC, and Processing Site Design and Remedial Action for MK-Ferguson and Utah. Site level variances are reported and analyzed in accordance with established thresholds (see Table 10.1) which support the thresholds for reporting to HQ DOE. Additionally, an analysis is made of the period and cumulative cost and schedule indexes.

o Schedule analysis

Schedule performance analysis occurs at the same levels as for cost. At the Project level, the IPMS working schedule is compared to the baseline schedule to identify any schedule ahead or behind condition. Also, any participant variance so identified is analyzed by the PIC Group and the results are discussed with participants prior to incorporation into the Project reports. At the cost account level, monthly internal reports of schedule and milestone performance provide the basis for review of the authorized work and for site-specific assessment of progress. Additionally, a bi-monthly site status meeting is held with Project participants, during which the schedules and cost performance for each site are reviewed in detail.

Table 10.1 Variance analysis thresholds - site and vicinity progress reports

Participant	WBS/Element	% Threshold			Minimum value		
		Cost/Schedule incremental	Cost/Schedule cumulative	ACV	Cost/Schedule incremental	Cost/Schedule cumulative	ACV
TAC	Site Char (05.01)	10%	10%	10%	\$10K	\$ 25K	\$ 50K
	RAP (05.03)	10%	10%	10%	\$10K	\$ 25K	\$ 50K
	SCD (05.05)	10%	10%	10%	\$10K	\$ 25K	\$ 50K
	NEPA (15.03)	10%	10%	10%	\$10K	\$ 25K	\$ 50K
M-K Fery	Site Design (10.02)	10%	10%	10%	\$10K	\$ 25K	\$ 50K
	VP Design (10.04)	10%	10%	10%	\$10K	\$ 25K	\$ 50K
	Site Remedial Action (30.02)	10%	10%	10%	\$50K	\$100K	\$250K
	VP Remedial Action (30.04)	10%	10%	10%	\$25K	\$ 50K	\$125K
GJPO	VP Design (10.04)	10%	10%	10%	\$10K	\$ 25K	\$ 50K
	VP Remedial Action (30.04)	10%	10%	10%	\$25K	\$ 50K	\$125K
ORNL	VP I/E Recommendation (05.01)	10%	10%	10%	\$10K	\$ 25K	\$ 50K
Utah	Site Remedial Action (30.02)	10%	10%	10%	\$50K	\$100K	\$250K

Note:
 % Schedule Variance = SV/BCWS
 % Cost Variance = CV/BCWP
 % At Completion Variance = ACV/BAC

o Contingency Analysis

The Project environment makes it mandatory that contingency planning, control, and application be integrated with the on-going funding process (see Funds Management Subsystem, Section 7.0). The Project Office and the PIC Group periodically assess risk, evaluate various cost control procedures and options, and determine the potential impact of revised workload, cost estimates, and schedules on the Project baselines. Based on this overall analysis effort, and the identified risk factors, the contingency usage and amount is identified. After approval by the Project Manager, contingency is applied to the appropriate PWBS elements by participant and the participant cost and schedule baselines are revised accordingly.

11.0 CHANGE CONTROL SUBSYSTEM

11.1 BACKGROUND AND PURPOSE

The UMTRA Project operates in a dynamic environment with considerable cost, schedule, and performance vulnerabilities. In order to manage to the TEC and to ensure Project Control of the change process, the Project Office operates a formal Change Control Subsystem.

11.2 SCOPE

The Change Control Subsystem monitors changes to the Project cost, schedule, and technical baselines and the supporting participant baselines thereto. Changes are made to the baselines by submittal of a Change Request to the CCB for review and approval. The CCB recommends disposition of the Change Request to the Project Manager, who makes the final approval/disapproval decision. The Contracting Officer is advised, if contractual modifications are required. The participants are formally advised of the Change Request status by the PIC Group.

11.3 DESCRIPTION

Each participant is required to maintain an internal change control process system and hold regular monthly meetings to identify potential changes to their baselines. Such changes are also evaluated at the monthly IPMS Schedule Coordination meeting. In addition, a Trend Report is issued monthly that identifies which cost and schedule thresholds have been exceeded and are required to be addressed by the Project participant. The intent is to determine those items for submittal to CCB and to obtain other participants' input.

11.4 IMPLEMENTATION

The Change Control Board Subsystem operates through the Project CCB based on pre-established thresholds. The CCB Charter/thresholds and Project Change Control Procedure are contained in Appendices 3 and 4, respectively.

APPENDIX 1
DEFINITIONS

DEFINITIONS

The following definitions provide the standard terminology used in the IPMS. The consistent use of this terminology is essential to assuring data integrity and communicability.

Actual Cost of Work Performed (ACWP)

The costs actually incurred (including accruals) by a Project participant in the relevant time period. ACWP is the actual value of work performed (actual unit costs times the actual units of product delivered). These costs should reconcile with the participant's cost ledgers audited by the Government.

Accrued Cost

The cost of work in process in the relevant time period associated with the consumption of labor and other direct resources (including subcontracts) without regard to the date of payment.

At Completion Variance (ACV)

The difference between BAC and EAC for the relevant time period (BAC - EAC). At any point in time, it represents a forecast of cost (BAC) overrun or underrun.

Budget at Completion (BAC)

The sum of all budgets allocated by a Project participant to the relevant time period. It consists of the Project Office approved PMB and Management Reserve budget.

Budget Authority (BA)

Authority (i.e., the authorized FY appropriation) provided to the Project Office to enter into obligations that will result in current or future FY expenditures involving Project funds. For a Project participant, it is that portion of the Project Office's BA authorized to the participant, via a contract modification or Financial Plan change, for purposes of entering into obligations.

Budgeted Cost for Work Performed (BCWP)

A Project participant's determination of the sum of the budgets for completed work packages and completed portions of open work packages, plus the appropriate portion of the budget for level of effort (LOE) and apportioned effort for the relevant time period. BCWP is the budgeted unit cost times the actual units of product delivered.

Budgeted Cost for Work Scheduled (BCWS)

The sum of the Project participant's budgets for work packages and planning packages, scheduled to be accomplished (including in-process work packages), plus the LOE and apportioned effort budgeted for the relevant time period. BCWS is the budgeted unit cost times the estimated units of products to be delivered).

Budget Outlay (BO)

Authority provided to the Project Office to incur cost against an obligation. For a Project participant, the BO is the cost ceiling estimated to be incurred for the current FY. The BO is contained in the participant's Cost Plan approved by the Project Office. The FY BO for the Project Office or participant may include both prior FY uncosted obligations plus the current FY BA. The BO cannot exceed the sum of the two, but it can be less in total.

Contract Work Breakdown Structure (CWBS)

A Project participant's extension of the PWBS to the level appropriate to the definition of their authorized work. This extension is made to the cost account level.

Cost and Schedule Control Systems Criteria (CSCSC)

DOE-established characteristics that a participant's management control system must possess to assure effective planning and control of authorized work, costs, and schedule. Implementation of the criteria is tailored to the participant's role on the Project.

Cost Account

The level where a single CWBS element and a single participant's organization come together to form a natural management control point. The performance data generated at this level are summarized upward to the Project level through the CWBS and PWBS.

Cost Variance (CV)

The difference between BCWP and ACWO for the relevant time period ($BCWP - ACWP$). At any point in time it shows whether the work actually performed has cost most or less than the value earned for the same work.

Earned Value

Synonymous with Budgeted Cost for Work Performed.

Estimate At Completion (EAC)

The ACWP plus the estimate of cost to be incurred (including accruals) for authorized work remaining for the relevant time period.

Expenditures

An expenditure takes place when a Project Office obligation is paid (i.e., checks issued or cash disbursed). For a Project participant, an expenditure occurs when an invoice is paid. During a fiscal year, expenditures for the Project may be for payment of obligations incurred in prior FYs (prior-year expenditures) or in the same FY. Expenditures, therefore, result in part from unexpended balances of prior-year BA and in part from BA provided for the FY in which the money is spent.

Integrated Project Management System (IPMS)

The Project management system based on the CSCSC characteristics of each participant's management control system. The IPMS is operated by the Project Office with assistance from the Technical Assistance Contractor. It provides a uniform structure for budgeting, planning, and controlling Project work and reporting its performance based on Project participant's inputs.

Integrated Project Management System Description, UMTRA-DOE/AL-400126

The manual that describes the procedures pertinent to IPMS operation.

Management Plan

The plan prepared by Project participants in response to Project Office direction that describes the management procedures, scope of work, costs, and schedules for the authorized work for the relevant time period. The cost and schedule data are presented in the form of Cost and Milestone Plans.

Management Reserve Budget

The portion of the BAC withheld for participant management control purposes rather than designated for accomplishment of a specific task or set of tasks. It is not part of the PMB.

Participant Management Control System

The system operated by a Project participant in compliance with the modified implementation of the CSCSC which are used to: (1) plan and control the cost and scheduling of the authorized work; and (2) report performance against the plan to the Project Office.

Performance Measurement Baseline (PMB)

The time-phased cost plan for the relevant time period against which Project participant performance is measured. It is formed by the budgets assigned to scheduled cost accounts. It is equal to the BAC less the Management Reserve budget.

Project Charter (MSA-143), UMTRA-DOE/AL-400124.0167

The document that delineates the respective responsibilities and authorities of HQ DOE and Albuquerque Operations (AL) with respect to the UMTRA Project and defines the terms and conditions for Management of the Project by AL.

Project Management Plan, UMTRA-DOE/AL-400125

The plan that describes how the Project is planned and managed and how the various systems are integrated for control purposes.

Project Manager's Progress Report (PMPR)

The quarterly report required of a DOE Major System Acquisition, such as the UMTRA Project. It is prepared for HQ DOE and AL and presents summary funding, cost, schedule, and technical status on a quarterly, FY, and cumulative basis.

Project Plan (MSA-143), UMTRA-DOE/AL-400124.0167

The plan that serves as the overall Project baseline and includes: specific cost, technical, and performance objectives; major milestones; resources estimates; acquisition strategy; environmental, health, and safety requirements; and Project schedules.

Project Progress Report (PPR)

The monthly report prepared for the UMTRA Project Manager (with a copy to the UMTRA Program Office) that presents Project participant funding, cost, and schedule status on a cumulative fiscal year and total Project basis.

Project Schedule and Cost Estimate Report, UMTRA-DOE/AL-400127.0166

This annual report supports the "Project Plan" cost and schedule objectives, provides the uniform basis for planning and managing the Project, and presents Project and site cost estimates and schedule planning to Project completion.

Project Work Breakdown Structure (PWBS)

The uniform structure which establishes the common framework for Project execution and control and for reporting Project and Site cost, schedule, and technical performance.

Relevant Time Period

The period under consideration (month, cumulative to date, or future) for a selected reporting element (site, WBS level, WBS element, Project, Task Agreement, or Contract) for performance measurement or planning purposes.

Schedule Variance (SV)

The difference between BCWP and BCWS for the relevant time period (BCWP - BCWS). At any point in time it represents the difference between the (budgeted) value of work actually performed (accomplished) and that scheduled to be accomplished.

Site Progress Report (SPR)

The monthly report prepared for the Project Office Operations Group (with distribution to the UMTRA Project Office and involved Project participants) that presents processing site cost and schedule status on a monthly and cumulative fiscal year basis.

Status Report

The monthly report prepared by a Project participant that provides the base status data incorporated into the PPR, VPPR, and SPR.

Uncosted Obligations

That amount of obligational authority which remains uncosted at FY-end (i.e., obligational authority which has not incurred cost and/or accruals during that FY) and is carried over into the next FY's Cost Plan.

Vicinity Property Progress Report (VPPR)

The monthly report prepared for the Project Office Operations Group (with distribution to the UMTRA Project Office, DOE GRJ Project Office, NRC, and involved Project participants) that presents vicinity properties status on a monthly and cumulative fiscal year basis.

WBS Dictionary

The WBS Dictionary lists and defines the UMTRA Project WBS elements. The PWBS Dictionary is a consolidation of each participant's WBS Dictionary.

APPENDIX 2
ACRONYMS AND ABBREVIATIONS

APPENDIX 3
CHANGE CONTROL BOARD CHARTER

ACRONYMS AND ABBREVIATIONS

Act	Uranium Mill Tailings Radiation Control Act of 1978
ACV	At Completion Variance
ACWP	Actual Cost of Work Performed
AL	Albuquerque Operations Office
BA	Budget Authority
BAC	Budget At Completion
BCWS	Budgeted Cost for Work Scheduled
BCWP	Budgeted Cost for Work Performed
BO	Budget Outlay
BRMD	Budget and Resources Management Division
BY	Budget Year
CCB	Change Control Board
COR	Contracting Officer's Representative
CSCSC	Cost and Schedule Control Systems Criteria
CV	Cost Variance
CWBS	Contract Work Breakdown Structure
DOE	Department of Energy
EAC	Estimate at Completion
FY	Fiscal Year
HQ	Headquarters
ID-GJAO	Idaho Operations - Grand Junction Projects Office
IPMS	Integrated Project Management System
IRB	Internal Review Board
MSA	Major System Acquisition
OMB	Office of Management and Budget
PIC	Project Integration and Control
PMB	Performance Measurement Baseline

PMPR	Project Manager's Progress Report
PPR	Project Progress Report
PSCE	Project Schedule and Cost Estimate
PWBS	Project Work Breakdown Structure
RAC	Remedial Action Contractor
SPR	Site Progress Report
TAC	Technical Assistance Contractor
TEC	Total Estimated Cost
URS	Uniform Reporting System
UMTRA	Uranium Mill Tailings Remedial Action
VPPR	Vicinity Properties Progress Report
WBS	Work Breakdown Structure

Change Control Board Charter

1. The UMTRA Change Control Board (CCB) serves as a review body for yearly "Performance Measurement Baseline" (PMB) planning, as well as for review and control of changes to the Project's cost, schedule, and technical performance baseline. The UMTRA CCB shall be responsible for evaluating changes which significantly impact the Project's baselines.
2. The Operations Group Leader, TAC Assistant Project Manager/Sites, and MK-F Operations Manager shall identify, during their monthly IPMS Schedule coordination meeting, which changes merit presentation to the CCB. They shall assure that any proposed Change Request: (1) exceeds the established thresholds (see Attachment); and (2) merits consideration of the CCB, because all alternatives for alleviating the need for a change have been evaluated. The Operations Group Leader shall identify the individual (e.g., Site Engineer, TAC Site Manager, RAC Site Manager) responsible for preparing the Change Request and shall submit the Request to the CCB within 20 days after the meeting.

3. The CCB shall consist of the following members:

Voting Members

Deputy Project Manager - Chairperson
Project Support Group Leader
TAC Project Manager
MK-F Project Manager

Other

ORNL Assistant Project Manager^a
Grand Junction Projects Office Representative^a

Non-Voting Member

CCB Advisor - TAC Project Integration and Control Manager or designee

4. The CCB shall evaluate Change Requests based on one or more of the following considerations:
 - o Requirement - whether, or to what degree, the proposed change is necessary.
 - o Improvement - whether the proposed submittal warrants a baseline change, even though not technically required.
 - o Impact - the effect of the proposed change on the baselines, other participants, the public, and the like.
 - o Alternatives - any other means to affect the proposed change.
-

Change Control Board Charter (Continued)

Based on its evaluation, the CCB shall vote on the preliminary disposition of each Change Request and recommend either approval, disapproval, or return for more data. The results shall be documented on the CCB Action Notices by the CCB Chairperson and forwarded to the UMTRA Project Manager, along with the Change Request, for final disposition. The UMTRA Project Manager has the management prerogative to approve any, all, or part of any Change Request at his discretion.

5. The CCB will meet at the UMTRA Project Office in Albuquerque upon call of the Chairperson. If an emergency requires decision on a change before a meeting can be convened, a telephone conference of CCB members shall be substituted.
 6. The CCB Chairperson shall approve the agenda for each CCB meeting. The approved agenda and copies of each Change Request/CCB Action Notice to be considered at the meeting shall be made available to the Board members at least one week before the scheduled meeting. Board members shall review the Change Requests in advance and provide any preliminary comments to the Chairperson.
 7. CCB meetings shall be scheduled and controlled by the Chairperson. Only CCB members and Change Request presenters shall discuss the proposed change unless others are authorized by the Chairperson. The Change Request shall be presented by a representative of the Project participant other than a CCB member. The presenter shall assure that supporting detail accompanies the Change Request when presented.
 8. Administrative duties of CCB activities shall be performed by the CCB Advisor who shall be responsible for:
 - o Preparation and distribution of CCB meeting agenda.
 - o Tracking and recording the status of Change Requests being prepared, updated, or revised and the implementation of those approved.
 - o Scheduling the meetings, and arranging for a meeting room with Chairperson approval, notifying CCB members and presenters of the meeting date and place.
 - o Ensuring all participants' Change Requests are made available to Board members one week prior to the meeting.
 - o Logging all Change Requests received.
 - o Providing for preparation of documentation and correspondence required to finalize processing of Change Requests (e.g., recommendations to UMTRA Project Manager, letters to participants).
 - o Analyzing cumulative effects of changes and maintaining the Project PMB.
 - o Supporting the CCB, as required, in administering CCB activities.
-

Change Control Board Charter (Concluded)

9. No CCB action can in any manner or degree modify or otherwise affect the terms of a contract. The Contracting Officer is the only person authorized to execute modifications on behalf of the Government which result in any changes to any of the requirements under a contract. All CCB actions approved by the UMTRA Project Manager, the Contracting Officer's Representative (COR), will be implemented as technical direction. If any CCB action impacts the scope of the respective contract, the CCB can recommend adoption to the UMTRA Project Manager, as the COR, who will refer the matter to the Contracting Officer.
-

^a Shall attend the meetings and vote only on Change Requests concerning their scopes of work.

ATTACHMENT

page 1 of 2

CCB COST, SCHEDULE, TECHNICAL THRESHOLDS

DATE:03/13/87

	ACTIVITY	TIME FRAME	COST THRESHOLD (3)		SCHEDULE THRESHOLD	TECHNICAL THRESHOLD
			PERCENTAGE	MINIMUM	MINIMUM	MINIMUM
DOE						
	SITE CERTIFICATION (15-04)	PROJECT (1)			3 MONTHS	
	SITE ACQUISITION (15-25)	FISCAL YEAR PROJECT			2 MONTHS 3 MONTHS	
	GWP CERTIFICATION (15-04)	PROJECT (2)			1 MONTH	

CONTRACTOR

TAC						
	TASK ACTIVITY (WBS-3)	FISCAL YEAR (2) PROJECT (2)	10% 5%	\$200,000 \$500,000		
	SITE ACTIVITY (WBS-4)	FISCAL YEAR PROJECT	10% 5%	\$50,000 \$100,000	3 MONTHS 1 MONTH	Refer to Site Technical Baseline

ORNL						
	ALL (15-05-01)	FISCAL YEAR (1)			3 MONTHS	IGRJ 10% I/E RECOMMEND OTHER SITES 25%
		FISCAL YEAR (2) PROJECT (2)	10% 5%	\$100,000 \$200,000	1 MONTH	

FOOTNOTES:()

- (1) All Thresholds pertain to each site individually.
- (2) Thresholds apply to all sites combined.
- (3) All cost variances must exceed both the percentage and the minimum value to apply.

ATTACHMENT (Concluded)
CCB COST, SCHEDULE, TECHNICAL THRESHOLDS

page 2 of 2

DATE: 03/13/87

CONTRACTOR	ACTIVITY	TIME FRAME	COST THRESHOLD (3)		SCHEDULE THRESHOLD	TECHNICAL THRESHOLD
			PERCENTAGE	MINIMUM	MINIMUM	MINIMUM
M-K	VP ENGINEERING (1) (15-10-04)	FISCAL YEAR (1)	20%	\$50,000	3 MONTHS	
		PROJECT (1)	20%	\$70,000	3 MONTHS	
		FISCAL YEAR (2)	10%	\$200,000	N/A	20% REA SUB
		PROJECT (2)	5%	\$200,000	1 MONTH	10% REA SUB
	SITE ENGINEERING (1) (15-10-02)	FISCAL YEAR (1)	10%	\$50,000	3 MONTHS	Refer to Site Technical Baseline
		PROJECT (1)	10%	\$60,000	3 MONTHS	
		FISCAL YEAR (2)	5%	\$300,000	N/A	
		PROJECT (2)	5%	\$500,000	1 MONTH	
	REMEDIAL ACTION (1) (15-30-02)	FISCAL YEAR (1)	10%	\$500,000	3 MONTHS	Refer to Site Technical Baseline
		PROJECT (1)	5%	\$700,000	3 MONTHS	
		FISCAL YEAR (2)	2.5%	\$1,000,000	N/A	
		PROJECT (2)	1%	\$2,000,000	1 MONTH	
	VP REMEDIAL ACTION (1) (15-30-04)	FISCAL YEAR (1)	20%	\$50,000	3 MONTHS	
		PROJECT (1)	15%	\$75,000	3 MONTHS	
		FISCAL YEAR (2)	10%	\$200,000	N/A	10% RA COMP
		PROJECT (2)	5%	\$500,000	1 MONTH	10% RA COMP
	ALBO PROJECT OFFICE (15-10-30)	FISCAL YEAR (2)	10%	\$200,000	N/A	
		PROJECT (2)	3%	\$800,000	N/A	
UNC (4)	VP ENGINEERING (15-10-04)	FISCAL YEAR (2)	5%	\$400,000	3 MONTHS	10% REA SUB
		PROJECT (2)	3%	\$800,000	1 MONTH	10% REA SUB
	VP REMEDIAL ACTION (15-30-04)	FISCAL YEAR (2)	5%	\$1,000,000	3 MONTHS	10% RA COMP
		PROJECT (2)	3%	\$3,000,000	1 MONTH	10% RA COMP

FOOTNOTES:()

- (1) All Thresholds pertain to each site individually.
- (2) Thresholds apply to all sites combined.
- (3) All cost variances must exceed both the percentage and the minimum value to apply.
- (4) Combined EDG & GRJ.

APPENDIX 4
PROJECT CHANGE CONTROL PROCEDURE

Project Change Control Procedure

PROJECT CHANGE CONTROL

A. PURPOSE

To prescribe procedures for the operation of the UMTRA Project Change Control Subsystem.

B. SCOPE

This procedure is applicable to all UMTRA Project Office and Project participants.

C. REFERENCES AND/OR FORMS

1. UMTRA Project Change Request (Attachment 1).
2. Change Control Board Action Notice (Attachment 2).
3. Change Control Board Change Request Log (Attachment 3).

D. RESPONSIBILITIES

1. The Project Manager is responsible for operation of the Project Change Control process.
2. The Deputy Project Manager shall serve as the CCB Chairperson and is responsible for conducting the CCB meetings.
3. The Project Control Group Leader shall serve as a CCB Member.
4. The Operation Group Leader is responsible for conducting the monthly IPMS Schedule Coordination Meeting and identifying potential Change Requests for CCB action.
5. The Site Engineers shall review and sign-off on Change Requests.
6. The Technical Assistance Contractor's Project and Integration Control (PIC) Group shall assist the Project Office in carrying out its change control activities and shall appoint a CCB Advisor to provide administrative support to the CCB.
7. Project participants shall operate internal change control systems and provide input into the Project Change Control process.

E. PROCEDURE

1. Project Manager

- a. Assures that the CCB Charter and related thresholds are kept up-to-date.
-

Project Change Control Procedure (Continued)

- b. Appoints the CCB Chairperson and the permanent CCB members.
 - c. Approves or rejects Change Requests recommended by the CCB and submitted by the CCB Chairman.
 - d. Re-directs effort for in-scope approved Change Requests and refers out-of-scope approved Change Requests to the Contracting Officer for processing.
2. CCB Chairperson
- a. Assures that participants prepare and implement supplementing change control procedures that support this procedure and forwards copies to the CCB Advisor for the CCB file.
 - b. Directs CCB Advisor in change control process activities.
 - c. Conducts the meeting and forwards CCB recommended Change Control Board Action Notices, along with the related Change Requests to the Project Manager for final disposition.
 - d. Recommends to the Project Manager any proposed revisions to the CCB Charter or thresholds.
 - e. Conducts periodic risk assessments to establish current site risk profile.
3. Operations Group Leader
- a. Conducts monthly IPMS Schedule Coordination Meeting, in conjunction with TAC Assistant Project Manager/Sites, MK-F Operations Manager, and PIC Group Scheduler, that covers: IPMS Schedule update; problem identification; schedule trends; recovery plans; and potential Change Requests.
 - b. Determines, based on the meeting, if a Change Request should be prepared, and if so, which participant should prepare the Change Request.
 - c. Follows up on Change Requests to assure their completion in 14 days and submits them to the CCB Advisor.
4. Participants
- a. Provide CCB members and attend CCB meetings.
 - b. Update internal Work Package Schedules prior to IPMS Schedule Coordination Meetings.
 - c. Identify internal trends, review those identified in the monthly Trend Report, assign a Change Request Preparer to prepare a Change Request for those trends that exceed the thresholds.
-

Project Change Control Procedure (Continued)

- d. Review monthly their fiscal year and life cycles Estimates at Completion, revise as necessary, and incorporate in the monthly IPMS Report.
 - e. Present the proposed Change Request at the IPMS Schedule Coordination Meeting.
 - f. Prepare Change Request per direction of the Operations Group Leader, as a result of the IPMS Schedule Coordination Meeting, and assure their submittal within 14 days.
 - g. Implement approved in-scope changes (out-of-scope per Contracting Officer direction), revise Cost Plans accordingly, and report the changes in monthly IPMS Report.
5. Change Request Preparer
- a. Completes Change Request and forwards copies to Site Engineer for review and sign-off.
 - b. Submits Change Request to Operations Group Leader for IPMS Coordination Schedule Review Meeting within 14 days.
 - c. Revises Change Request, if necessary, and presents the Change Request to the CCB.
 - d. Coordinates approved change implementation with CCB Advisor.
6. Site Engineer
- a. Interfaces with Change Request Preparer, reviews and signs off on Change Requests prior to CCB meeting for sites responsible.
 - b. Attends CCB meetings for sites responsible and provides input, as requested, on the Change Requests.
7. CCB Advisor
- a. Establishes and maintains, per CCB Chairperson direction:
 - The costs, schedule, and technical baselines that establish the basis for Change Request submittals.
 - The cost, schedule, and technical thresholds that, when exceeded, require a Change Request submittal.
 - The Change Request Log, which records status of Change Requests.
 - The monthly Trend Report, which incorporates approved changes to each participants' Cost Plan and identifies WBS elements that have exceeded the CCB cost and schedule thresholds.
-

Project Change Control Procedure (Concluded)

- b. Receives Change Requests from the Operations Group Leader and logs them.
- c. Schedules CCB meetings and prepares an agenda for the CCB Chairperson's review and approval.
- d. Distributes the meeting announcement, agenda, and proposed Change Requests to CCB members.
- e. Records the meeting, including Project Manager disposition, and distributes the minutes to all concerned within seven working days after the meeting.
- f. Incorporates the Change Request disposition into the Change Request Log, arranges for revision of the Cost Plan as appropriate, and assures that the Trend Report and participant IPMS Reports reflect the approved change.
- g. Maintains the CCB working files and assures that Project Document Control receives copies of all files.

8. Contracting Officer

Initiates the contract modification process for those approved changes deemed to be out-of-scope.

ATTACHMENT 1
UMTRA PROJECT CHANGE REQUEST

Page ____ of ____

PARTICIPANT _____	CHANGE: _____	NUMBER _____
WBS ELEMENT(S) _____	BUDGET _____	ISSUE DATE _____
SITE(S) _____	SCHEDULE _____	URGENCY: HIGH
FISCAL YEAR(S) _____	TECHNICAL _____	MEDIUM LOW

DESCRIPTION

IMPACT

(Include discussion of impacts on other participants, source of budget, funding requirements, etc.)

ALTERNATIVES

CORRECTIVE ACTION REQUIRED

DOE Site Engineer

Date

Change Request Preparer

Date

ATTACHMENT 2
CHANGE CONTROL BOARD
ACTION NOTICE

RECOMMENDATION

Chairperson, Change Control Board

ACTION

UMTRA Project Manager

CONCURRENCE

Contracting Officer

ATTACHMENT 3

Date

CHANGE CONTROL BOARD CHANGE REQUEST LOG

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Change Request Number	Date Submitted	Contractor	Site	Cost Impact ----- Hours \$1000	Sched Impact (Months)	Status	Date Processed
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END

DATE FILMED

02 / 06 / 91