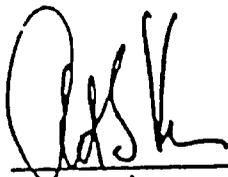


READINESS REVIEW PLAN
FOR
CIVILIAN RADIOACTIVE WASTE MANAGEMENT SYSTEM
M&O CONTRACTOR

ADVANCED CONCEPTUAL DESIGN
FOR
ENGINEERED BARRIER SYSTEM/WASTE PACKAGE
AND
REPOSITORY

SEPTEMBER 4, 1992



Approved
Readiness Review Team Leader

Approved
Readiness Review Board Chairman

1. INTRODUCTION AND OVERVIEW

This Readiness Review Plan has been prepared on behalf of the Chairman, CRWMS Mined Geologic Disposal System (MGDS) Design Readiness Review Board, in accordance with QAP-2-6, Readiness Review. The Chairman is acting under the authority of the General Manager, CRWMS M&O, to conduct this assessment of the readiness of the MGDS Design activities to include Engineered Barrier System/Waste Package (EBS/WP), and Repository Advanced Conceptual Design (ACD) programs. This review will evaluate all requirements identified for work to be performed under the M&O program in accordance with tasking received from Yucca Mountain Project Office (YMPO), Office of Civilian Radioactive Waste Management (OCRWM), Department of Energy in the two design activities to be reviewed. The M&O Contract Statement of Work defined a transition phase which covered a period of approximately 20 months from contract award to completion of phase-in of work from existing contractors. During the transition phase, the M&O organized, staffed, developed/implemented management control systems and a Quality Assurance Program, trained personnel and completed the QA readiness process required to begin work. The completion of the M&O management control system has been impacted by the OCRWM Management System Improvement Strategy (MSIS), in which the M&O has been a major participant. That strategy included a complete review of the hierarchy of management control documents as well as the relationship of OCRWM and M&O documents. The resulting structure is displayed as Attachment I. Although the structure is now defined, there are two additional primary documents that should provide criteria for the review, i.e., the OCRWM Program Management System Manual (PMSM) and the joint OCRWM/M&O Systems Engineering Management Plan (SEMP), both of which are still in the development and/or approval process. This review will therefore use draft versions of those documents if the approval process is still not complete by the time of the review.

2. SCOPE

The scope of this review is to evaluate the readiness of the M&O Nevada Site to execute its full responsibilities for the design of the Engineered Barrier System/Waste Package, and the Repository Advanced Conceptual Design, and to accomplish its assigned work tasks required to be performed under the M&O Program. A successful QA Readiness Review of the Nevada Site was conducted in December, 1991. Only those QA areas which resulted in Open Items and QA requirements impacted by subsequent M&O procedural changes and/or additions will be re-evaluated during this review. In addition, this review will evaluate all requirements identified in the scope of work with the exception of Management Controls which were reviewed as part of the M&O Management Controls Readiness Review. Open items resulting from that review will also be stasured.

The scope of work is as assigned by OCRWM in accordance with DOE Order 5700.7B, Work Authorization System, and in support of the Yucca Mountain Project Office. OCRWM participation will include observers with the Readiness Review Team as well as members on the Readiness Review Board.

Although the activities being reviewed may or may not be quality affecting, this review will utilize the successful model from the previous QA Readiness Reviews. Therefore, this review will verify the readiness to perform tasks which are within the scope of the following DOE Quality Assurance Requirements Document (QARD) basic requirements:

- | | | |
|----------------|---|---------------------------------------|
| Requirement 1 | - | Organization |
| Requirement 2 | - | Quality Assurance Program |
| Requirement 3 | - | Design Control |
| Requirement 5 | - | Instructions, Procedures and Drawings |
| Requirement 6 | - | Document Control |
| Requirement 16 | - | Corrective Action |
| Requirement 17 | - | Quality Assurance Records |
| Requirement 18 | - | Audits |
| Requirement 19 | - | Computer Software |

The Attribute Lists for these areas will be based at a minimum on the requirements derived from the scope of work utilizing OCRWM QARD criteria, the OCRWM Systems Engineering Management Plan (SEMP) and the OCRWM Program Management System Manual (PMSM).

2.1 TASK ASSIGNMENTS

The tasks assigned to the M&O are defined in accordance with the Program Work Breakdown Structure (Attachment II), the respective scopes of work and applicable Task Directives, as promulgated to the M&O by the YMPO.

3. OBJECTIVES

The following objectives are established for this review:

- Verify readiness to accomplish tasks to be performed under the M&O program considering the following readiness review criteria:
 - Work activity prerequisites have been satisfied
 - Detailed implementing documents are available and approved
 - Adequate numbers of personnel in each required discipline have been suitably trained and qualified.
- Hold Points and Open Items identified during the Nevada Site Readiness Review held in December 1991, will be reviewed for proper closure.

4. REFERENCE DOCUMENTS

The following references will provide the basis for this review:

- Contract Statement of Work, dated January 18, 1991.
- ASME, NQA-1-1989 Edition, Quality Assurance Program Requirements for Nuclear Facilities.

- Yucca Mountain Project, Project Management Plan, Revision 2.
- Quality Assurance Requirements Document for the Civilian Radioactive Waste Management Program. (QARD), DOE/RW-0214, Revision 4.
- CRWMS M&O Quality Assurance Program Description (QAPD), Revision 2.
- CRWMS M&O Quality Administrative Procedure, QAP-2-6, Readiness Review, Revision 1.
- DOE Order 4700.1, Project Management System.
- DOE Order 5700.7B, Work Authorization System.
- OCRWM Program Management System Manual (PMSM). (DRAFT)
- M&O Management Plan dated June 2, 1992.
- OCRWM/M&O Systems Engineering Management Plan (SEMP). (DRAFT)
- M&O Quality Administrative Procedures

5. READINESS REVIEW GUIDELINES

The M&O General Manager directed this review on August 26, 1992 and provided guidelines for conducting the review (Attachment III). The review is scheduled for September 16, 1992. As noted in his direction, Readiness Reviews of the Nevada site along with QA program audits are to be reviewed and evaluated as part of this review.

6. READINESS REVIEW BASELINE

System requirements, technical studies, and design work are in support of the YMPO and are a subset of, and work to, YMPO management plans, baselines and Technical Directives. The following are the applicable baseline documents for this review:

- M&O Statement of Work dated January 18, 1991
- OCRWM PMSM (DRAFT)
- OCRWM/M&O SEMP (DRAFT)
- M&O Management Plan
- YMPO Technical Directives

7. READINESS REVIEW SCHEDULE, PARTICIPANTS AND PROCESS

7.1 SCHEDULE

- 7.1.1 • Activate Readiness Review Team - August 7
- Publish Readiness Review Plan - August 20
- Develop Attributes Lists - August 20-27
- Conduct Readiness Review - September 16
- Complete Readiness Review Report - September 29
- Present Readiness Review Report to Readiness Review Board - September 30
- General Manager's Decision - September 30

7.2.1 To provide a meaningful review of the determinations of the Readiness Review Team, the M&O General Manager has appointed a Review Board Chairman external to the M&O. This person, Nat Trembath, is a former senior executive at the Group level within TRW who brings an extensive background in program management with particular emphasis on the systems engineering approach in support of government projects. The remainder of the Board is comprised of senior executives within the program who bring a wealth of experience within their own relative areas of expertise, and DOE members representing OCRWM interests. The M&O Board members received training on the OCRWM QARD, the M&O QAPD and QAP-2-6, Readiness Review. The DOE members are provided copies of the M&O QAPD and QAP-2-6 for reading. This training has been documented in accordance with QAP-2-1, Indoctrination and Training.

Board Members are:

Nat Trembath - Chairman
Ray Godman
Art Greenberg
Dale Foust
Jim Brackett
Tom Colandrea
DOE Member

7.2.2 The General Manager has appointed the Chief Engineer, Art Kubo, as the Readiness Review Team Leader who has, in turn appointed the following individuals to the Readiness Review Team with responsibilities as indicated:

- Tom Faries - Team Coordinator
- Bob Morgan - Team Consultant
- Dave Evans - ADP; Facilities and Equipment - Chuck Tankersley
- Jim Tierney - QA
- Shem Blackley - Design Controls
- Wally Houston - Design Controls
- Dick Parker - Construction Management
- Mike Stern - Regulatory and Licensing
- Hank Sindt - Project Management
- DOE Observers

The qualifications and training of the M&O team members are documented in accordance with QAP-2-1, Indoctrination and Training and QAP-2-2, Verification of Personnel Qualifications.

- 7.2.3 OCRWM will designate members on the Readiness Review Board and observers of the Readiness Review Team to facilitate timely authorization for the M&O to commence work at the completion of the review. The responsibility for the adequacy of the Board and Team to fulfill the objectives of the review and the requirements of QAP-2-6, however, remains with the M&O.

7.3 PROCESS

The review will be conducted in accordance with the process defined in QAP-2-6, Readiness Review, utilizing the flow chart included herein as Attachment IV.

- 7.3.1 Upon approval of this plan by the Readiness Review Board Chairman, the Readiness Review Team will develop the Attribute List using Requirements Lists prepared by each respective Design function utilizing the form shown as Attachment VI; the scope of work as defined by the Work Authorization System; the criteria contained in the OCRWM QARD; the OCRWM/M&O SEMP and the OCRWM PMSM.

- 7.3.2 The Readiness Review Team Leader will approve the Attribute List.

- 7.3.3 Prior to the beginning of the review, individual members of the team will complete the review of documents and procedures in support of the objectives of the review.

- 7.3.4 The review will commence with an introduction by the Readiness Review Team Leader. This presentation will address the following:

- Readiness requirements
- M&O Readiness strategy
- Assumptions of the review
- Roles and responsibilities of the review participants.

- 7.3.5 The EBS/WP Advanced Conceptual Design manager will then present the following information:

- Organization
- Scope of Work Plan
- List of activities to be performed under the M&O program
- Requirements List, with emphasis on incomplete elements, if any
- Process used to identify requirements
- Implementation for the M&O scope of work
- Determination of staffing requirements and qualifications of personnel and

- 7.3.6 The Repository Advanced Conceptual Design manager will then offer a presentation utilizing the format outlined in 7.3.5 above.

- 7.3.7 Upon completion of the site presentations, the review team will conduct the Readiness Review and complete the Attribute List through reference to presentations referring to previously reviewed documents and records, and by

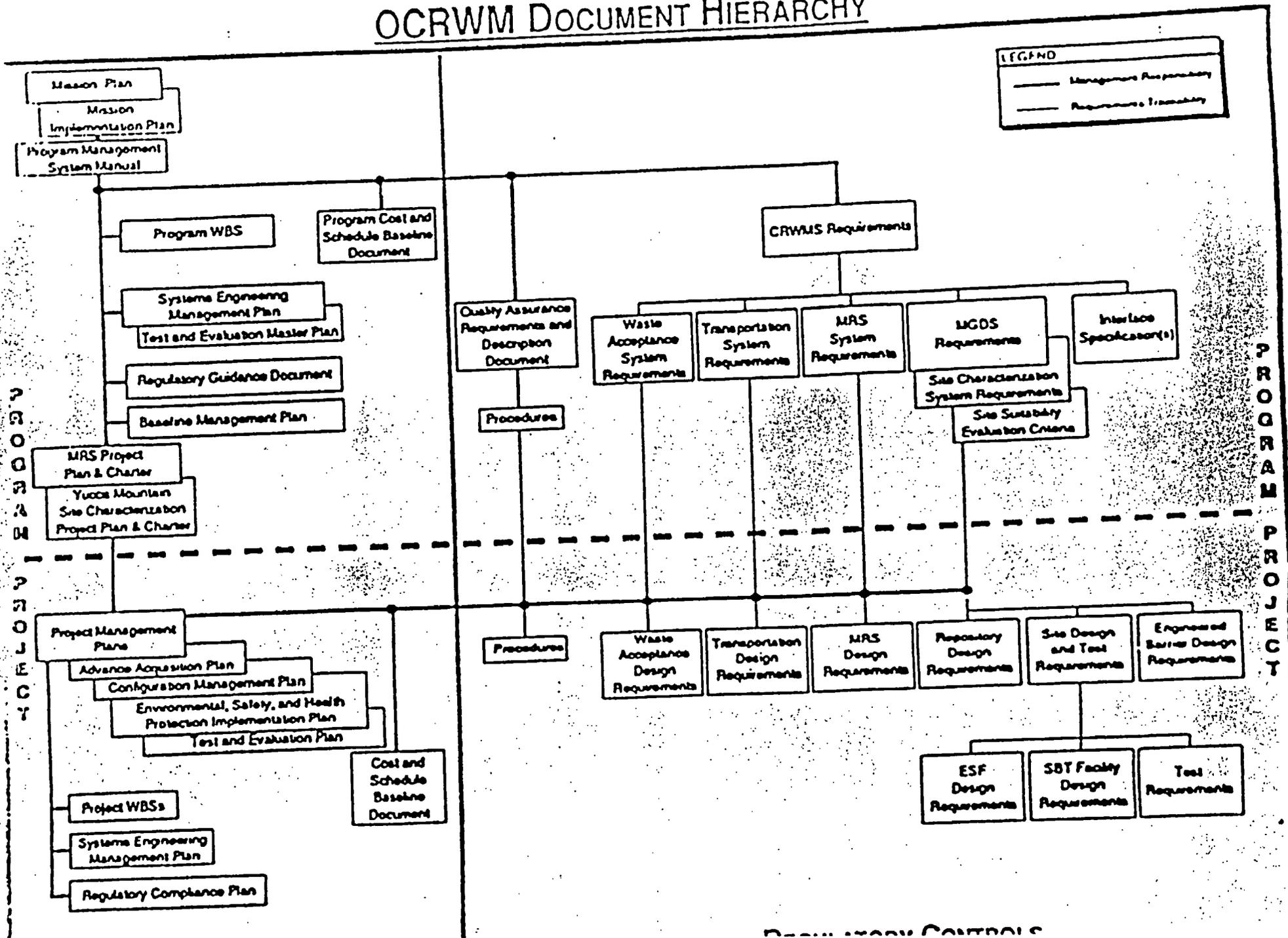
individual or group discussions with site personnel. The sample matrix shown in Attachment V will be completed to identify the tasks to be performed under the M&O program and to verify the prerequisites for these tasks.

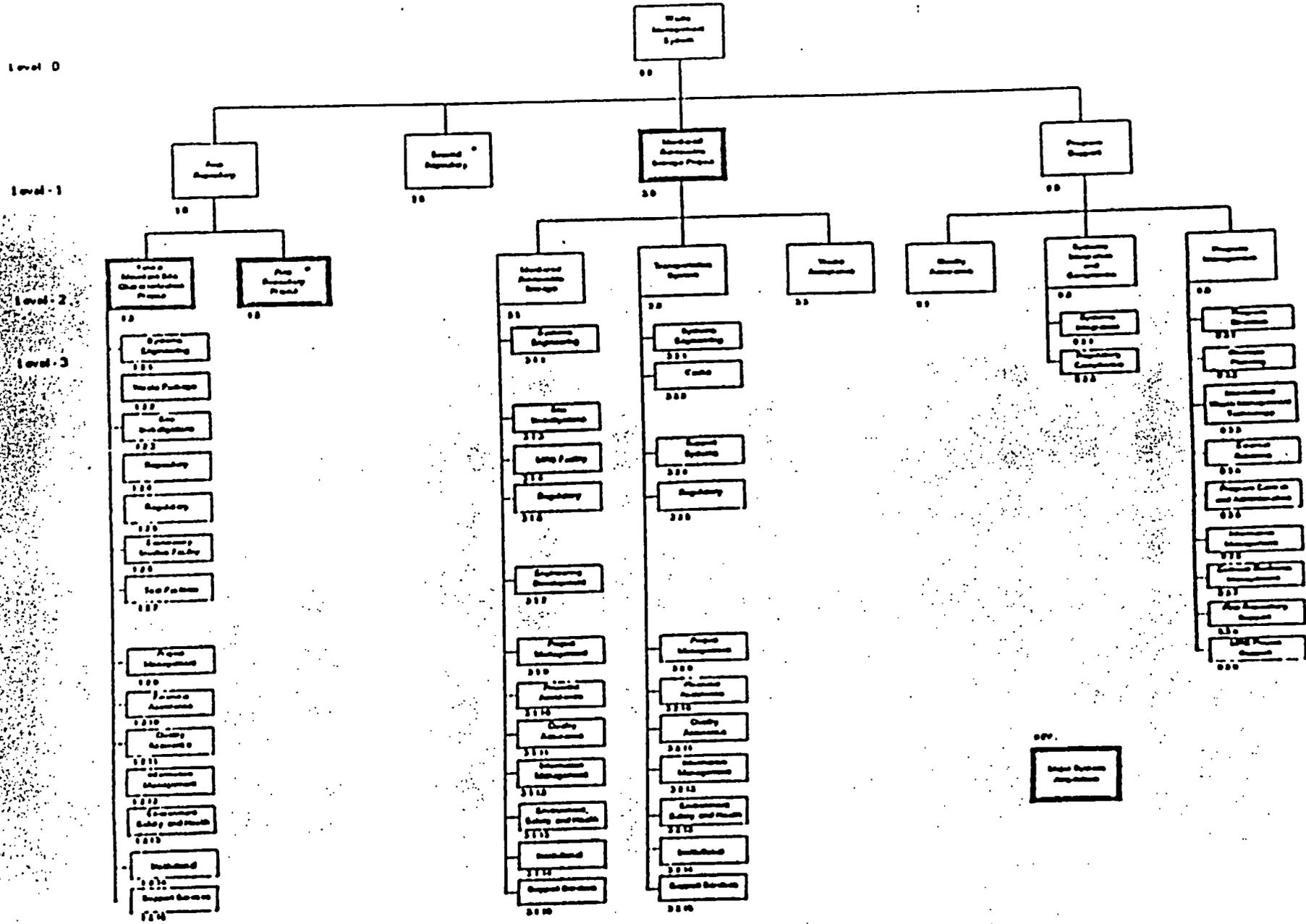
- 7.3.8 Observers shall only interact with members of the Readiness Review Team. Any questions, other than minor clarifications, shall be presented to a team member utilizing the Observer Question Form (Attachment VI). Documents, files and procedures may be reviewed in conjunction with a team member during the review; however, copies will not be provided.
- 7.3.9 Upon completion of the Attribute List, the Review Team will prepare a report and a summary presentation for delivery by the Readiness Review Team Leader to the Readiness Review Board on September 30, 1992. The report will include a review of any Open Item Reports generated during the review, actions required to close the Open Item Report and its impact on readiness. Any recommended hold Points will be clearly identified. The report to the Board will conclude with an overall recommendation for the Board's consideration regarding readiness to proceed within the defined scope of work in each case.
- 7.3.10 The Readiness Review Board will accept the report as written or direct changes to incorporate the Board's determination of the adequacy of the Review and their recommendations to the General Manager regarding readiness. A summary of the Board's recommendations will be provided to the General Manager.
- 7.3.11 The General Manager will consider the report of the Readiness Review Board and announce his determination to OCRWM by September 30, 1992.

8. ATTACHMENTS

- 8.1 ATTACHMENT I - CRWMS Document Hierarchy
- 8.2 ATTACHMENT II - Program Work Breakdown Structure
- 8.3 ATTACHMENT III - Readiness Review IOC dated August 26, 1992
- 8.4 ATTACHMENT IV - Readiness Review Process Flow Chart
- 8.5 ATTACHMENT V - Task Matrix
- 8.6 ATTACHMENT VI - Requirements List
- 8.7 ATTACHMENT VII - Observer Question Form
- 8.8 ATTACHMENT VIII - MGDS M&O Readiness Review Milestone Chart

OCRWM DOCUMENT HIERARCHY



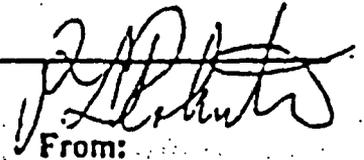


Waste Future Element

Figure 1- Program Work Breakdown Structure

Interoffice Correspondence
TRW Environmental Safety System Inc.

TRW



Subject:
Readiness Review

Date:
August 26, 1992
VA.SS.TAF.8/92.001

From:
R. L. Robertson

To:
Distribution

cc:
N. Trembath

Location/Phone
TES1/8588
(703) 204-8600

In accordance with the provisions contained in the CRWMS M&O QAPD, dated June 14, 1991, and QAP-2-6 (Rev. 1), Readiness Review, dated July 15, 1992, I am directing a series of Readiness Reviews as follows:

<u>Review</u>	<u>Location</u>	<u>Date</u>
Exploratory Studies Facility (ESF) Title II Design	Las Vegas	September 14, 1992
Monitored Retrievable Storage/ Safety Analysis Review	Charlotte	October 1, 1992
Repository Advanced Conceptual Design	Las Vegas	October 13, 1992
Engineered Barrier System/ Waste Package	Las Vegas	October 13, 1992

The reviews will address all activities, both QA and non-QA, necessary to execute work responsibilities in each respective area. I have appointed Nat Trembath to serve as Chairman of the Readiness Review Board and Art Kubo as the Review Team Leader. Enclosed is a list of participants.

The review will verify satisfaction of all M&O work activity prerequisites: verify that detailed implementing documents are available and approved; and that adequate members of personnel in each required discipline have been suitably trained and qualified. The findings of Readiness Reviews at both the Nevada Site and MRS as well as the M&O Readiness Reviews (both QA and Management Controls), along with other QA program audits and surveillances, are to be reviewed and evaluated as part of these Readiness Reviews. Particular attention will be paid to the status of Open Items identified during previous respective Readiness Reviews.

Interoffice Correspondence
TRW Environmental Safety System Inc.



August 26, 1992
VA.SS.TAF.8/92.001
Page Two

The Readiness Review Team Leader is responsible for determining the prerequisites for readiness in accordance with QAP-2-6, Rev. 1, and consistent with the defined scope of work.

TAF:cm

Enclosures

1. M&O Readiness Reviews Participants
2. ESF Design RR Schedule
3. MRS/SAR Readiness Review Schedule
4. EBS/WP ACD and Repository ACD Readiness Review Schedule

Distribution:

R. J. Brackett
J. O. Cowles
L. D. Foust
R. W. Godman
A. B. Greenberg
A. S. Kubo
R. J. White
R. G. Vawter

Enclosure 1

M&O Readiness Reviews
September/October 1992
List of Participants

Readiness Review Team

Art Kubo
Tom Faries
Dave Evans
R.J. Parker
Hank Sindt
Shem Blackley
Wally Houston
Charles Tankersley
Jim Tierney
Mike Stern
DOE Observers

Team Leader
Team Coordinator

Readiness Review Board

Nat Trembath
Ray Godman
Art Greenberg
Jim Brackett
Dale Foust
DOE Member

Chairman

**M&O Readiness Review
Exploratory Studies Facility
Title II Design**

Develop Readiness Review Plan August 26, 1992

Readiness Review Board Chairman Approve Plan .. August 31, 1992

Develop Attribute Lists August 18-27, 1992

Conduct Readiness Review September 14, 1992

Develop Readiness Review Report September 18-23, 1992

Readiness Review Board Meeting September 24, 1992

General Manager Decision September 30, 1992

**M&O Readiness Review
Monitored Retrievable Storage/
Safety Analysis Review Design**

Develop Readiness Review Plan August 26, 1992

Readiness Review Board Chairman Approve Plan August 31, 1992

Develop Attribute Lists September 10-25, 1992

Conduct Readiness Review October 1, 1992

Develop Readiness Review Report October 2-21, 1992

Readiness Review Board Meeting October 22, 1992

General Manager Decision October 30, 1992

**M&O Readiness Review
Engineered Barrier System/Waste Package ACD
Repository ACD**

- Develop Readiness Review Plan August 26, 1992
- Readiness Review Board Chairman Approve Plan August 31, 1992
- Develop Attribute Lists August 18-27, 1992
- Conduct Readiness Review October 13, 1992
- Develop Readiness Review Report October 14-21, 1992
- Readiness Review Board Meeting October 22, 1992
- General Manager Decision October 30, 1992

CRWMS READINESS REVIEW REQUIREMENTS MATRIX

ACTIVITY _____

WBS NUMBER _____

REQUIREMENT CATEGORY	DOCUMENT/ DESCRIPTION	QAW Y/N	CLASSIFICATION M&O QAP 1-3	DATE APPROVED FOR USE	REQUIRE BY - DATE
DOCUMENTATION					
SCHEDULES					
FUNDING AUTHORIZATIONS					

TASK MATRIX

Sequence Number	WNS	Activity Description	QAW		Non QAW	Criteria No.	Responsible Manager	Personnel
			M&O	OCRWM				

Attachment

OBSERVER QUESTION FORM

Readiness Review

Observer Question

Observer Name

Agency Represented

Question (Please be as specific as possible, citing reference if available)

Readiness Review Team Reply

Approved:

Readiness Review Team Leader