



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

Reply to:

301 E. Stewart Ave., #203
Las Vegas, NV 89101
Tel: (702) 388-6125

MEMORANDUM

DATE: October 9, 1992

FOR: Joseph Holonich, Director, HLPD

FROM: *John W. Gilray*
John W. Gilray, Sr. OR - YMP

SUBJECT: YMP Site Report

I. QUALITY ASSURANCE

A. QA Status of Yucca Mountain Site Activities

Status of Quality Related Site Characterization Activities

- At the North Portal area 33 test pits have been excavated and investigated for soil and rock properties.
- North Ramp borehole (NRG 1) has been drilled and cored for investigation of soil and rock properties.
- At Midway Valley 28 soil test pits and four trenches (ranging up to 1,100 feet) have been excavated and investigated and gravity and magnetic surveys have been performed.
- Six trenches on quaternary faults have been excavated and investigated for seismic hazards.
- Twelve neutron boreholes have been drilled and cored for Phase I activities.

130095
9210150203 921009
PDR WASTE
WM-11 PDR

102
WM-11
N403
1/0

- Four neutron boreholes have been drilled and cored for Phase II. Drilling and coring neutron Borehole N32 is in progress at approximate depth of 180'.
- Unsaturated zone drilling and coring of UZ 16 borehole with the LM 300 drill rig is in process at approximate depth of 813'.
- Thirty-seven trenches have been excavated and investigated under the Volcanism program.
- YMPO QA On-Site Review

The Yucca Mountain Quality Assurance Division (YMQAD) under Richard Spence, Director, continues to actively monitor and conduct surveillances of on-site activities with a dedicated on-site staff of four QA engineers. At present ten surveillances have been performed resulting in eleven deficiencies which have been reported on Corrective Action Requests. These deficiencies are not significant, however corrective actions are in process especially in the area of record control, field change control and procedural control. The ten surveillances were conducted in the following areas.

<u>Surveillances</u>	<u>Organization</u>
Neutron Access Borehole Coring	USGS/T&MSS
ID and Control of Core Samples	USGS
Neutron Access Borehole Records	RSN-REECo
Staging/Packaging Neutron Access Borehole Samples	YMPO
Field Change Control Process Per AP 3.5Q	YMPO
Records from Implementation of AP 6.4Q	YMPO
Readiness Review for Drillhole UZ-16	YMPO
Handling Borehole Samples per BTP-SMF-008	YMPO
Field Verification per QAP 10-1(y)	RSN
Job Package Records	YMPO

OR-QA Review of On-Site Activities

The OR office monitors the field activities on a regular basis. In this regard I am developing a matrix of Study Plans, Job Packages and Test Plans presently being implemented on-site. From these I intend to interface with the on-site QA personnel to review selected completed work record packages from all involved organizations to determine the extent objective evidence is available demonstrating compliance with the Job Packages and Test Plans. During the month of October and November I intend to review the work packages for Trench T-5 which is adjacent to the north portal. This work is controlled under Job Package 92-05 and Test Planning Package 92-3.

B. Readiness Reviews (YMPO/M&O)

At the request of YMPO the Management and Operating Contractor (M&O) conducted from September 14-18, 1992, an assessment of the readiness of contractors scheduled to participate in and support the construction of the Exploratory Studies Facility (ESF). The contractors include Reynolds Electrical and Engineering Co., Inc. (the constructor); Technical and Management Support Services (for environmental support); Raytheon Services Nevada (for ESF Title I and II Design for Package 1A); and M&O (for construction management support). The start of ESF construction is scheduled for November, 1992. Eleven senior technical managers independent of ESF responsibilities were assigned to perform this readiness review using OCRWM QAAP-2-6, "Quality Assurance Administrative Procedure for Readiness Reviews". The team members' qualifications and training are documented in accordance with QMP-02-01, "Project Office Indoctrination and Qualification Training".

The objective of the readiness review was to verify readiness of contractor participants to assure that (a) work activity prerequisites have been satisfied, (b) detailed implementing documents are available and approved and (c) that adequate numbers of personnel have been suitably trained and qualified. Detailed check lists were utilized throughout this

readiness review which utilized the necessary quality elements in the OCRWM Quality Assurance Program Description Program.

The result of this readiness review is expected to be reported to the YMPO October 27, 1992. I intend to observe this meeting and report the results accordingly.

The readiness Review Team also conducted during this same time frame a readiness review of the M&O to determine their readiness to perform design activities for the ESF and the Advanced Conceptual Design for the Repository and Waste Package. Twenty-two open items and two hold points resulted from this review. Action is underway to resolve the open items.

C. M&O Transition Plans

The M&O contractor continues to assume major responsibility roles for the YMPO. However it is required that the M&O develop a Transition Plan for each additional work assignment that is initiated through YMPO Technical Direction Letters to the M&O. These Transition Plans describe the responsibilities, interfaces, procedural requirements and training and qualification requirements that must be accomplished during the transition phase. The following is a listing of the status of in process and approved transition plans.

<u>PLAN</u>	<u>Status</u>
1. YMP/92-13 REV 1 Site Characterization Program Transition Plan	IN APPROVAL CYCLE
2. YMP/92/20 REV 0 ESF Design Transition Plan	IN APPROVAL CYCLE
3. YMP/92/23 REV 0 Project Control Division Support Transition Plan	IN APPROVAL CYCLE
4. YMP/92-26 REV 0 Technical Data Management Transition Plan	IN APPROVAL CYCLE
5. YMP/92/29 REV 0 Transition Plan for Performance Assessment	IN COMMENT RESOLUTION CYCLE
6. YMP/92-8 REV 0 Plans and Procedures	APPROVED 3-19-92

- | | | |
|-----|---|------------------|
| 7. | YMP/92-12 REV 0 Configuration Management | APPROVED 4-6-92 |
| 8. | YMP/92/13 REV 0 Site Characterization
Program Transition Plan | APPROVED 4-16-92 |
| 9. | YMP/92-14 REV 0 Study Plan Coordination
Transition Plan | APPROVED 4-16-92 |
| 10. | YMP/92-16 REV 0 Project Activity Reports/
Activity Reports to OCRWM | APPROVED 5-29-92 |
| 11. | YMP/92-17 REV 0 Document Control/Document
& Records Center and Central Records
Facility Transition Plan | APPROVED 6-19-92 |
| 12. | YMP/92-18 REV 0 Project Microfilm Center
Transition Plan | APPROVED 5-28-92 |
| 13. | YMP/92-21 REV 0 Software Development Plans | APPROVED 8-13-92 |
| 14. | YMP/92-22 REV 0 Direct Support Records
Planning Transition Plan | APPROVED 8-14-92 |

A representative from the YMPQAD, Sam Horton, monitors the development and implementation of these transition plans on a regular basis. I will also continue to monitor this activity on a regular basis and report results accordingly.

D. Independent Design Verification of ESF Title II Design Package 1A

From August 17 through August 26 I participated as an observer of the YMPO independent Design Verification of the ESF Title II Design Package 1A. This design package addresses design information pertinent to the North portal surface preparation, the North portal and launching chamber, the North portal electrical distribution system, the Tunnel Boring Machine specifications, the topsoil and rock storage area, the storm water runoff control area and the portal/launch chamber rock support system. This package consists of 24 drawings, 37 design analyses, and 5 specifications. The design verification team included six members with expertise in rock mechanics, mining, environmental, regulatory licensing, classification analysis, and QA. The main objective of the verification process was to assure it meets design hierarchy and input requirements

which are addressed in the Raytheon Basis for Design Document. This document contains applicable design requirements, regulations, codes, standards, and design models, methods and parameters necessary for the design organization to implement the applicable requirements in the design process. The verification process was conducted under the Raytheon QA procedural controls in PP-03-04, "Design Verification".

As background information this design package has previously received a 50% management review on February 25, 1992, where 441 comments were initiated and resolved; a 50% independent technical review on March 30, 1992, where 186 comments were initiated and resolved; a 90% management technical review on July 6, 1992, where 535 comments were initiated and resolved and a 90% independent technical review where 618 comments were initiated and resolved.

As a result of this independent verification, approximately 172 comments were initiated and are presently in the process of being resolved. The most substantive comments concerned a) a weakness in the classification analysis, and b) the north portal wall design not meeting environmental guidelines. As a consequence of these comments the design classification analyses were upgraded and the north portal wall was redesigned making it more aesthetically pleasing from a nearby major highway. Upon completion of these changes the independent verification team will reconvene and verify these changes. This is expected to take place the week of October 19, 1992. I will continue to observe this verification process and report the results accordingly.

E. Audit of the YMPO

From September 28, through October 2, 1992, I participated as an observer of the audit of the implementation of Yucca Mountain Site Characterization Project Office (YMPO) QA Program, (QA Audit YMP-92-24) at Las Vegas and the Yucca Mountain site facilities. The audit concentrated on the implementation of the following nine QA program elements: QA Program/Training; Design Control; Procurement Document Control; Plans,

Procedures, Instructions and Drawings; Document Control; Control of Purchased Items and Services; Control of Nonconforming Items, QA Records and Scientific Investigation.

The NRC staff believes this audit to be particularly important and timely since it included the review of (a) configuration management controls, (b) the hierarchy and control of site characterization and design input requirements and (c) the traceability of these hierarchy requirements through the data base and the soon to be released ESF Title II 1A design.

The audit involved the review of program procedures, an assessment of the appropriate YMPO staff understanding of these procedures relative to their assigned responsibilities and the review of records to determine compliance with program requirements.

The audit team identified four potential Corrective Action Requests (CARs) which were not to be significant in terms of the overall acceptability of the YMPO QA program.

In regards to configuration management controls the audit team determined that the six governing program procedures describing how the configuration management process is to be carried out were confusing and contained overlapping controls. Further it was determined that the YMPO staff did not clearly understand how these program controls were to be carried out. While the YMPO recognized the weaknesses of the configuration management process prior to this audit, the audit team confirmed this and emphasized the need for extensive and timely corrective action. The YMPO agreed with these findings and pointed out that major improvements are underway.

The eight other criteria audited were determined to be adequately implemented and controlled by procedures.

In conclusion, the audit was thorough and effective. The auditors were well prepared and demonstrated a sound understanding of the QA and

program procedures used in this audit. The auditors also utilized the prepared check lists effectively.

An NRC observation audit report has been prepared and submitted to the NRC QA office for review and processing.

F. Audit of Savannah River (SR) Defense Waste Processing Division (DWPD)

From September 14-18, 1992, I participated as an observer in the DOE Office of Environmental Restoration and Waste Management Audit (No. 92 EA-SR-AU-04) pertaining to the implementation of SR/DWPD QA Program.

The SR/DWPD is responsible to process high level liquid radioactive waste into a slurry form, melt it, mix it with a glass frit and pour this mixed radioactive waste and frit into stainless steel canisters. These canisters are capped and welded and stored temporarily until a permanent repository is made available.

The objective of this QA Audit was to evaluate the effectiveness of implementing the DOE/DWPD and Westinghouse QA Program and to determine whether it meets the requirements and commitments imposed by the DOE. The audit was conducted under the procedural controls described in DOE/High Level Waste Quality Assurance Program Description (QAPD) (DOE/EM/wo/02 Rev. 2, and DOE/RW-0214 Rev. 4 and ICN 4.1. The auditors were qualified to DOE Standard Practice Procedure 3.03, "Qualification of QA Audit Personnel", which is part of the DOE QAPD.

The audit team identified six deficiencies and thirteen observations, all of which were not considered serious and which could be corrected relatively easy. The quality of the design was determined not be effective since significant remedial actions were underway to bring the design and as built drawings into an acceptable state.

In summary, I found the overall conduct of the audit acceptable and effective in that it fulfilled the required audit scope and objectives described in the audit plan. Further, I agree with the preliminary audit team findings that the implementation of the DWPD QA program was acceptable with the exception of design control.

G. Rewrite Quality Assurance Requirements Document (QARD)

The rewrite of QARD when accepted by the NRC will be imposed on YMPO and all participants and supersede previously accepted QA programs. The QARD has gone through a major comment and resolution process and the final draft is being reviewed by all participants. OCRWM tentatively plans on reviewing this QARD with the NRC QA staff October 28, 1992.

cc: K. Hooks, M/S 4H3; R. Ballard, M/S 4H3, J. Latz, J. Roberts,
C. P. Gertz, R. E. Loux, C. Pflum, G. Cook, D. M. Kunihiro,
D. Weigel, B. Youngblood, J. Linehan, M/S 4H3; H. Denton, M/S 17F2,
R. Bernero, M/S 6A4; H. Thompson, 17G21; S. Gagner, M/S 2G5;
E. O'Donnell, M/S NLS260