



UNITED STATES
NUCLEAR REGULATORY COMMISSION
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M E M O R A N D U M

DATE: June 15, 1989

FOR: John J. Linehan, Director, Repository Licensing and
Quality Assurance Project Directorate (HLPD), Division
of High-Level Waste Management

FROM: John W. *JWG* Gilray, Sr. DR - YMP

SUBJECT: YMP Site Report for the month of May, 1989

The following report pertains to the QA, waste package and surface facility activities associated with the Yucca Mountain Project for the above-referenced time period.

I. QUALITY ASSURANCE

A. RESTRUCTURE OF YMP QA ORGANIZATION

May 25, 1989, C. Gertz, Project Manager, YMPD, announced that Ed Wilmot who was previously C. Gertz's Deputy will be Acting Quality Assurance Director for the YMPD until the advertised position announcement for the Quality Assurance Director is filled. Ed Wilmot has the full time responsibility

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for the development and implementation of the YMP QA program with no other responsibilities associated with C. Gertz's office. The Program Control Branch and the Verification Branch report to the Acting QA Director. Experienced Senior QA personnel from Management Analysis Corporation, and Scientific Application International Corporation have been assigned to assist and support the YMP QA organization in a major QA improvement program. The priorities of this improvement program include the preparation for a fully qualified QA program within the YMP; the development of improved procedures for quality level classification and for controlling software programs; the development of an effective QA organization unit with specific delegated assignments, authorities and milestones; and the establishment of a management process to assure the objectives of the improved QA program are achieved.

I am encouraged by the recent developments within the YMP QA organization but a close review of the definition and implementation of the QA improvement program will be necessary within the next several months in order to determine the overall effect this reorganization and improvement plan has on the quality of the YMP activities.

B. Quality Assurance Level Assignments (QALAs)

All 9 QALAs which are all level I QA, have been approved and released by the YMP which will allow F&S and H&N to continue ESF Title II design work. However, due to the difficulties in developing these QALAs and the need to improve the procedures in determining quality classification a number of issues and comments are unresolved which are identified in a Standard Deficiency Report. The disposition of this report may result in the development of simplified procedures replacing the present procedures. The YMPO would like to discuss with NRC the proposed revised method in classifying quality levels and to gain a clearer understanding of NRC's interpretation of some of the statements in NUREG 1318. However, YMP is experiencing resistance by DOE headquarters in having such a meeting or discussion.

It appears that DOE headquarters wants the responsibility for interpreting NRC requirements, i.e., specifically NUREG 1318, for YMP. The OR office will continue to monitor this overall activity closely and keep the NRC QA office informed.

C. Status of Participants QA Programs and Audits

- ◆ As a result of YMP audits, H&N, F&S, and LLNL QA programs have been found acceptable with the exception of the QA software programs which are under development and review.
- ◆ Audits of Sandia and Los Alamos QA programs are tentatively scheduled for July 17 and August 14, respectively.
- ◆ Since REECO and USGS are involved in upgrading their QA program and procedures and in training and qualifying personnel to the improved QA procedures the audit dates are not established yet.
- ◆ Considerable upgrading of the YMP QA program procedures is underway and the training and qualification of YMP personnel will have to be accomplished before they are ready for an audit.

D. Miscellaneous

SDRD The YMP and participants' TAR-06-03 review comments on the SDRD Rev. 0 are being resolved. However DOE headquarter's comments require resolution prior to revising the SDRD. The resolution of the DOE comments and revision to the SDRD is expected by August.

DAA Comments to the DAA Implementation Plan are being resolved resulting in a revision to the implementation plan. The technical staff responsible for the DAA will participate in the

design verification of the implementation of the DAA recommendations.

Prototype Drilling The YMP has not reached a decision on the Quality level classification of the feasibility studies for the prototype dry air core drilling which will eventually be used in drilling multipurpose boreholes and UZ holes. YMP 88-9 QA program controls will be applied to the development of the procedures and drilling of the multipurpose boreholes and UZ holes. Once the procedures are developed and approved they will be sent to NRC for a 60 day review prior to the start of core drilling.

QA Software Programs The YMPD and participants continue in their efforts to develop meaningful QA software programs.

Allegation The YMP has not completed their report on the results of investigating the Singer allegation. This is a low priority action.

II. SURFACE FACILITIES

H&N continues the ESF Title II design analysis on the initial site preparation design package for the auxiliary pads and access roads. The H&N Engineering Design Plan and the Basis for Design Document are being reviewed by the YMP. The schedule for the completion of this review is keyed to the 50% completion of the design package which is presently scheduled for August. H&N expects to start the design analysis on the 2nd design package, the main pad, in August.

F&S is expected to start on the design of the ESF Title II head frame/collar the week of June 19 as a result of the YMP release of the QALAs.

III. Waste Package

YMP, with NRC and the State of Nevada as observers, conducted an audit of the LLNL QA program to determine if their upgraded program meets the YMP 88-9 Rev. 2 QA Program. The audit team concluded that LLNL QA program satisfactorily meets the 88-9 QA program with the exception of QA control for software programs. As a result of this audit the LLNL self-imposed stop work order is expected to be lifted. The first order of activity by LLNL will be to reclassify the quality level assignments in accordance with the new proposed quality level procedures and to conduct with the YMPD readiness reviews of major LLNL planned activities to assure the necessary QA and technical prerequisites have been met before starting work.

Presently LLNL intends to issue the following 4 waste package study plans, of which 3 are presently under development.

1. A study plan to characterize chemical and mineralogical changes in the postemplacement environment consistent with Section 8.3.4.2.4.1 of the SCP. The objective of this study is to establish the compositional features of water that may contact the waste packages. This plan is being developed.

2. A study plan to determine the hydrologic properties of waste package environment consistent with Section 8.3.4.2.4.2 of the SCP. The objectives of this study are to establish the hydrologic properties of the near-field repository rock and the effect of thermal perturbation on these hydrologic properties, over the range of anticipated postemplacement conditions. This plan is being developed.

3. A study plan to establish the mechanical attributes of the waste package environment host rock consistent with section 8.3.4.2.4.3 of the SCP. This plan is being developed.

4. A study plan to perform engineer barrier system field tests consistent with section 8.3.4.2.4.4 of the SCP. This will involve the validation of laboratory tests through in situ field tests in the repository horizon of the exploratory shaft facilities to establish the applicability of the laboratory studies to the repository block. The preparation of this study plan is tentatively scheduled for fiscal year 1991.

The YMP and LLNL rationale for determining whether a study plan is required is based on the condition that the SCP activity must be directly related to site characterization. For those SCP activities not directly related to site characterization LLNL will develop Scientific Investigation Plans (SIPs). These plans are not intended to be sent to NRC for review and comment. At present there are 12 SIPs. This OR office will conduct a brief review of these SIPs and report on the scope, objectives, and status of each of these SIPs in the next monthly report. Examples of activities to be incorporated in SIPs are spent fuel characterization, which includes distribution of radio nuclides, and metal barrier degradation which would involve corrosion studies. From the Study plans and SIPs LLNL will develop more detailed implementing instructions called either Activity Plans or Technical Implementing Procedures. These documents are also not intended to be formally submitted to NRC for LLNL wants the flexibility to make timely controlled changes to these documents without lengthy reviews by outside organizations such as YMP and NRC.

Through discussions with YMP and SAIC I have gained an understanding of the work assignments delegated to LLNL and to their major contractors Argonne, B&W and Pacific Northwest Laboratories. In next month's report I will list these work assignments and try to key them to the particular sections of the SCP. Also a status of each assignment will be provided.

IV. ACTION ITEMS:

- Monitor the revision of the DAA Implementation Plan and the implementation of the DAA recommendations.

- ◆ Monitor the resolution of YMP, DOE Hqts and participants' formal comments to the SDRD Rev. 0 and the status of incorporating these comments in SDRD Rev. 1. Review how SDRD Rev. 1 will be reviewed and acted on by those parties that have already generated design information from SDRD Rev. 0 to assure the necessary changes, analyses and documented actions are planned and acted on.
- ◆ Monitor the experimental prototype air core dry drilling activity; particularly the quality level assignments placed on various phases of this activity.
- ◆ Monitor the YMP strategy in revising and improving the system for classifying quality levels of items and activities and in the grading of QA controls.
- ◆ Monitor the development of the QA software program procedures for each participant.
- ◆ Develop a listing of LLNL waste package activities, key these activities to the SCP and report on the status of these activities in the next monthly report.
- ◆ Review the existing LLNL's SIPs for the waste package project and report on the scope, objectives and status of these SIPs in the next monthly report.
- ◆ Monitor the ESF-Title II design and engineering activities within YMP, F&S and H&N.
- ◆ Review the progress of implementing the YMP QA program improvement plan under the new leadership of the Acting QA Director.

cc: K. Stablein, R. E. Adler, J. E. Latz, J. E. Kennedy,
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