



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

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MEMORANDUM

DATE: February 13, 1989

FOR: John J. Linehan, Director, Repository Licensing Project
Directorate, Division of High-Level Waste Management,
M/S 4-H-3

FROM: John W. Gilray, Sr. OR YMP

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

The following report pertains to QA activities associated with the Yucca Mountain Project for the month of January 1989. In the future this report will also address activities pertaining to waste packaging and surface facilities.

I. QUALITY ASSURANCE

A. Project QA has reviewed and approved F&S's, H&N's and REECO's QA Program Plans (QAPPs) and is expected to complete its review and approval of LANL's, LLNL's, SNL's and USGA's QAPPs in February. The more detailed QA Administrative

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Procedures (QAAPs) for these participants are under review by the project QA organization and the schedule for their completion is addressed in enclosure 1. Priority is being given to the review of F&S's and H&N's procedures since they are the main participants in performing the ESF Title II design. YMPD recognizes that they must receive NRC's approval of the participants' QAPP prior to the gold star qualification audit.

Additional QA recommended actions have been identified by the Project QA organization (letter, J. Blaylock to E. Wilmot, enclosure 2) to be completed prior to the start of ESF Title II activities. YMPD management is working with the QA organization to discuss and determine which recommended actions can be deferred and accomplished after the start of ESF Title II design work. There is however, agreement that the QA project organization will complete the following actions prior to allowing a participant to start ESF Title II work:

◆◆ The review for acceptability of the participants' QAPP's and the necessary QAAPs.

◆◆ The acceptable closeout and verification of the participants' Standard Deficiency Reports (SDRs) that could impact on ESF Title II activity.

◆◆ The verification that the appropriate QA and technical personnel at each participant organization are properly trained and qualified.

YMPD is temporarily increasing their QA work force by approximately 25 in order to accomplish these actions and is developing a schedule identifying a timetable for conducting these activities relative to each participant. This could delay the start of ESF Title II activity by at least a month. This office will be monitoring this work closely and will keep the

headquarters office informed of the status and any problems associated with accomplishing this work.

B. STATUS OF SDRS

The status of SDRs issued and closed-out for YMPO and the participants are as follows. Also included is the identification of those SDRs that need to be resolved and closed-out prior to the start of ESF Title II activity.

	SDRs Issued	SDRs Closed*	SDRs Open	Open SDRs To Be Resolved Prior Participant Start of Title II**
YMPO	30	9	21	15
F&S	33	24	9	9
H&N	27	15	12	10
LANL	41	13	28	4
LLNL	31	2	29	0
REEC _o	15	7	8	2
SAIC	25	8	17	9
SNL	24	8	16	12
USGS	36	4	32	1

* 24 of the closed SDRs need to be verified by YMPO to determine if the participants' corrective actions have been completed.

** The DR office will evaluate YMPO's criteria for determining which SDRs need to be resolved prior to the start of ESF Title II work and determine if the selection is appropriate.

C. YMPO DESIGN ACCEPTABILITY ANALYSIS

‡ This office observed the OCRWM/YMPO surveillances of the ESF Title I Design Acceptability Analysis (DAA) in order to evaluate the effectiveness of the surveillance team, the DAA process and controls applied.

‡ The surveillances were conducted in an effective manner, however they would have been more comprehensive if the DAA process had progressed further thus allowing more of the DAA results, conclusions and recommendations to be available to the surveillance team. This was the opinion of the surveillance team also.

‡ The surveillance team concluded that the overall DAA process appeared to be conducted in a disciplined manner in accordance with the Technical Assessment Review plan with the exception of the evaluation for reasonableness of data and the lack of document control and review of the technical review plan. This latter issue along with the lack of the QA organization formal involvement in the DAA process led the observer to conclude that the YMPO QA Program (88-9, Rev 2) was not appropriately applied in accordance with the agreement between NRC and DOE headquarters.

‡ It was observed that the analysis of Part 60 criteria beyond the three major issues raised by NRC did not appear to meet the NRC/OCRWM agreement in that there was not sufficient assessment and development of performance criteria. The staff may want to confirm this in their review of the DAA report.

‡ The assignment of a QA level III to the calculation of groundwater travel times was of a concern to the observer in that this activity appeared to be of sufficient importance to be a QA

level I rating. The staff may want to assess the acceptability of the QA level assignment in the review of the DAA report.

A report was prepared by the OR office and submitted to J. Linehan, February 8, 1989, describing in more detail the results of the observations of these two surveillances.

Through discussions with DAA team members it was confirmed that there were no team members that have written a dissenting letter expressing concern toward the method, conduct or results of the DAA. There was however a discussion on the merits of discussing the calculations and data relating to underground flow water in the report. Since the data could not be sufficiently supported it was determined not to include this data in the report. We understand a discussion explaining this will be included in the DAA report.

D. MISCELLANEOUS

† The schedule for conducting those audits (Gold Star Audits) to determine if the YMPO, DOE headquarters, and participants' QA programs are fully qualified is addressed in enclosure 3.

† This office will be receiving and maintaining controlled up-to-date copies of YMPO's and participants' QA program plans and implementing procedures for review and for future reference.

II. WASTE PACKAGES AND SURFACE FACILITIES

At the direction of headquarters this office is becoming more active in the technical areas of the Yucca Mountain project. As a consequence I will be the OR contact for receiving headquarter's questions, actions or concerns pertaining to the waste packaging and surface facility activities at the YMPO.

During February I will be meeting with the YMPD principal parties responsible for directing technical and QA activities relative to waste packaging and surface facilities and with those individuals responsible for developing study plans and schedules. Important issues such a status, schedules, and problem areas resulting from these meetings will be highlighted and reported in the weekly telecons with headquarters and in the monthly reports. Also this office will be contacting the H.W section leaders responsible for waste packaging and surface facilities to clarify this activity and to gain headquarter's understanding of their major concerns and needs relative to these two technical areas including the identification of particular issues where this office can be of assistance in pursuing with YMPD.

III. ACTION ITEMS FOR FEBRUARY

♦ Determine status of the Singer allegations and the extent the final report will be made available to DOE Hqts and NRC. This office will also review and comment on the final report.

♦ Review YMPD's criteria for determining which SDRs need to be resolved by the participants prior to the start of Title II and to evaluate these SDRs to determine if the selection is appropriate.

♦ Meet with YMPD to discuss the improved QA controls for computer software.

♦ Contact principal parties at YMPD and NRC regarding the status, schedule, and major problem areas pertaining to waste packaging and surface facilities.

♦ Obtain update F&S QA design procedures for J. Conway.

♦ Report on the schedule for YMPD surveillances of participants' QA programs prior to start of ESF Title II activity and participate as an observer as requested by headquarters.

IV. GENERAL

A. MEETINGS ATTENDED

- ♦ January 4, 5, 6 - meetings at NRC-Hq. Rockville, MD
- ♦ January 12 - meeting with Ed Wilmot, John Linehan present
- ♦ January 13 - meeting with Ted Petrie on Exploratory Shaft (ESF) construction start, John Linehan present
- ♦ January 13 - QA surveillance exit meeting, John Linehan present
- ♦ January 13 - meeting with Jim Blaylock, YMPD QA Manager and Nancy Voltura, John Linehan present
- ♦ January 17 - meeting with Carl Gertz. Discussed his meetings with the USGS management in Reston, VA
- ♦ January 24 - meeting with Ted Petrie, update on ESF construction start
- ♦ January 25 - meeting with Carl Gertz
- ♦ January 31 - January TPO meeting. Meeting with Carl Johnson, State of Nevada in afternoon

cc: With enclosures: K. Stablein, R. E. Adler, J. E. Latz
Without enclosures: C. P. Gertz, R. R. Loux, M. Glora,
D. M. Kunihiro, R. E. Browning, G. Cook,
L. Kovach, S. Gagner, K. Turner,
H. Thompson, H. Denton

Enclosures: 1) QA Program Qualification; 2) YMPD QA Recommendations Prior to Start of ESF Title II Design Activities; 3) QA Program Qualification

QA PROGRAM QUALIFICATION

QAAP - QA ADMINISTRATIVE PROCEDURE

PURPOSE

- PROVIDES THE NECESSARY MANAGEMENT CONTROL OR METHODS USE TO MEET THE REQUIREMENTS OF THE PARTICIPANTS QA PROGRAM PLANS

STATUS	<u>TOTAL</u>	<u>REMAINING</u>	<u>COMPLETE BY</u>
• F&S	65	4	2/28/89
• H&N	40	6	3/17/89
• LANL	39	24	3/10/89
• LLNL	36	36	2/24/89
• REECO	39	28	3/17/89
• SNL	55	14	2/16/89
• USGS	38	15	2/16/89
• YMP	32	10	3/23/89

Enclosure #1

Enclosure # 2



Department of Energy

Nevada Operations Office

P. O. Box 98518

Las Vegas, NV 89193-8518

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"QA"

Edwin L. Wilmot, YMP, NV

**YUCCA MOUNTAIN PROJECT OFFICE (PROJECT OFFICE) QUALITY ASSURANCE (QA)
RECOMMENDATIONS PRIOR TO START OF EXPLORATORY SHAFT FACILITY (ESF) TITLE II
DESIGN ACTIVITIES**

During the past few months, both Project Office and participant staff members have been working long, hard hours in an effort to have design-related plans, procedures and other prerequisites in compliance with Yucca Mountain Project QA Plan/88-9, Revision 2 prior to the start of ESF Title II design. These management-directed tasks have focused on the preparation of plans and procedures, various management assessments, and training activities in order to demonstrate successful implementation of the Project Office QA Program to the Office of Civilian Radioactive Waste Management (OCRWM), U.S. Nuclear Regulatory Commission (NRC), and the State of Nevada.

Within a short time, I, as Project Quality Manager, will be asked as to the degree of confidence I have in proceeding forth with the Title II design effort and whether I believe the effort will be successful. As the Project Quality Manager, my decision must be based on an independent review and evaluation that sufficient management controls have been set in place, whether these controls sufficiently address and meet the Yucca Mountain Project quality and technical requirements, whether project implementation of these controls has been both adequate and in compliance with all relevant requirements, and whether sufficient and accurate documented evidence exists to support the Project Office's implementation of these requirements.

At the present time, I have concluded that while the Project Office may satisfy the Title II Design schedule milestones, we will ultimately not be successful in providing the needed confidence to OCRWM, NRC, and the State of Nevada by demonstrating that the Project Office QA program has been satisfactorily implemented in meeting these milestones.

Within this framework, I am making the following recommendations with respect to actions that are necessary for the Project Office and participants to accomplish prior to proceeding with the start of Title II design. These recommendations are subdivided into two categories: those tasks that are internal to the Project Office; and those tasks that are the responsibility of the participants.

Within the first category of Project Office responsibilities, I make the following recommendations:

1. During the last few months, many needed administrative procedures, quality management procedures, and project plans have been approved for use. Many of these documents, particularly the procedures, have received expedited reviews. With the training and implementation of the documents, we are discovering problems, which can be readily changed using Interim Change Notices. However, what is not occurring is a review of the overall management control systems being established to assure proper integration of the appropriate individual elements of each of these documents. EG: AP-6.8Q - Flow Chart

2. With schedule pressures on the project staff, training has not received proper emphasis. Many of the necessary project documents are initial issue; as such, we should be sensitive to the need for formal, documented training. Taking the alternate approach of "read and sign" for most of the initial-issue documents leads to the perception that training does not receive proper emphasis. Ultimately, the individuals who implement a procedure must share a common understanding and must give uniform responses when describing similar responsibilities. The proper type of training helps achieve this understanding and promotes uniform implementation.
3. Documentation of staff qualifications and proficiency to accomplish quality related activities must be completed. This is vital if we are to be successful in defending the credibility of the Project Office in directing project activities and in implementing Project Office tasks.
4. Open Project Office Standard Deficiency Reports (SDRs) need to be completed and either closed or awaiting QA verification, if the deficiency involves successful implementation of a Project Office procedure. (See enclosure 1)
5. The major change from Project Office QA Plan 88-9, Revision 1 to Revision 2, involved changes to Appendix H, Computer Software. The Project Office provided an acceptable alternative to Appendix H—the participants have the option of adopting the Software Committee version to meet Appendix H requirements in their respective Quality Assurance Program Plan (QAPP). This version, however, still has open comments which require resolution. Resolution of these comments must occur prior to Project Office approval of the participants' QAPP. (Reference letter No. YMP:JB-1060, Blaylock to Distribution).
6. One participant, MAC Technical Services (MACTEC), is still not described in either the Yucca Mountain Project QA Plan or QAPP. However, MACTEC has been performing quality-related activities, i.e: preparation of quality-related procedures; conducting reviews of quality-affecting documents; preparing quality level assignments; design requirement development activities related to ESF Construction Task Force - Management Center 3; management readiness assessments; etc. Consequently, these individuals need to be trained and qualified. In addition, a review of the quality-related activities which they have been involved in is needed due to the above deficiency. (Reference SDR 285 enclosure 2).
7. The Project Office has been directed by the U.S. Department of Energy/Headquarters (HQ) to use draft unapproved documents for ESF design activities. These documents need the requisite approvals. Likewise, any project originated documents awaiting HQ approval need to be formally approved for project use. (Reference letter YMP:NAV:JB-1450, Blaylock to Wilmot, dated January 12, 1989).

8. The NRC expressed a desire to perform their own independent review (assessment, audit, or surveillance) of the Design Acceptability Analysis (DAA). Since NRC review of the SCP hinges on the acceptability of the DAA report, all issues associated with the DAA Final Report need to be addressed in a timely fashion. (i.e.: Completing SDRs resulting from surveillances YMF-SR-89-003 and 004; review and address NRC and State of Nevada comments of the DAA Plan, etc.).
9. ESF Construction Start - Management Center 3 - Since the focus of the responsibilities within this group deals with a large number of distinct yet interrelated activities, a review of the controls for development and implementation of the following tasks needs to be conducted by Project Office QA:
 - (a) Implementation of approved procedures which address NUREG-1318 and will result in the following:
 - o List of items important to safety.
 - o List of items important to waste-isolation.
 - o List of quality activities.
 - o Quality level assignments.
 - o Results of QA grading process.
 - (b) Implementation of approved procedures or plans which are being used for:
 - o Preparation of Reference Information Base (RIB) data for initiation of Title II design.
 - o RIB "Certification" Plan.
 - o Documentation to support RIB data verification.
 - o Conducting RIB data confirmation.
 - (c) Implementation of approved procedures or plans which are being used to:
 - o Develop overall approach and methodology for design requirements development and control.
 - o Track the Analysis and use of 10 CFR 60 Flowdown Requirements to System Design Review Document (SDRD); identify the controls in place for the use of Draft Appendix E document prior to final HQ approval/issuance for use. (Reference recommendation 7 above).

- (d) Implementation of approved procedures or plans which are being used to:
 - o Analyze and compile testing input requirements.
 - o Prepare draft test input for SDRD, Appendix B, and the related draft Engineering Change Request(s) (ECR).
 - o Prepare draft IDS input for SDRD, Appendix B, and the related draft ECR(s).
 - o Prepare draft SDRD, Appendix C, and the related draft ECR(s).
 - o Identify and document Integrated Data System (IDS) design requirements to the design organizations.

- (e) Implementation of approved procedures or plans which are being used for:
 - o Analysis and compilation of performance assessment (PA) input requirements to include functional breakdown, functional allocation, functional criteria, allocation of criteria to subsystems in the SDRD, identification and coordination of performance assessment interfaces with other interfaces, performance assessment interface appendix to the SDRD, the draft ECR(s) for the PA appendix and the final PA appendix with the ECR(s).

- (f) Implementation of approved procedures or plans which are being used for:
 - o Analysis and compilation of the repository interface input requirements to include the ESF/Repository interface drawing.
 - o Any repository/ESF design integration requirements and related drawings, specifications, etc.

- (g) Implementation of approved procedures or plans which are being used for:
 - o Functional analysis to allocate requirements to design features and determine specific design requirements and any revisions.
 - o Integration of sets of requirements allocated to features and integrated set of rationale.
 - o Development of a master requirements list for major interfaces.

- (h) Implementation of approved procedures and plans which are being used for:
- o Modifying and compiling the A/E Basis for Design Documents (H&N and F&S).
 - o Review of SDRD.
 - o Review of RIB.
 - o Review of Basis for Design documents (H&N and F&S).

10. Resolution and closure of the results of the Project Office management's Readiness Assessment Review conducted in August-1988 needs to be completed.
11. Project Office QA will either provide ongoing surveillances of all the activities identified above to verify satisfactory resolution of the pertinent issues; or, Project Office QA needs to be actively included in the task to provide independent verification of the activity as it progresses.

The following recommendations relate to activities performed by the participants:

1. The Title II design process explicitly excludes Lawrence Livermore National Laboratory (LLNL), yet LLNL is included within Work Breakdown Structure elements 1.2.6.9, ESF Testing; 1.2.6.9.1.L, ESF Test Plan; 1.2.6.9.2.5.L, Engineered Barrier Design Testing. If LLNL has even a single Exploratory Shaft test, they need to be included in the design process with respect to design input.
2. The participant SDRs need the same attention described in Recommendation 4 above and in Enclosure 1.
3. Reynolds Electrical & Engineering Co., Inc. (REECO), comments on the Title I Design Report, should be resolved in accordance with Quality Management Procedure 06-03. (Reference: Letter, Pritchett to Carter, dated January 13, 1989).
4. REECO procurement procedures need to be reviewed for compliance to QA requirements prior to placement of any long-lead procurements for ESF-related items.
5. The planned qualification and training activities need to be completed as described for the Project Office.
6. The Project Office QA needs to conduct a surveillance of each participant once that organization's management has completed its own internal surveillance/review and indicates its readiness to proceed.

The recommendations identified above constitute prudent management actions to be completed prior to initiation of Title II design. Consequently, I urge careful consideration of actions to address and resolve these recommendations, not withstanding the current schedule constraints. Project management's completion of each of these activities, supported by satisfactory, independent review by Project Office QA, will provide the objective evidence needed such that I can make a positive statement with strong conviction and a clear conscience as to the readiness of the Yucca Mountain Project to proceed with Title II design.

James Blaylock

James Blaylock

Project Quality Manager

Yucca Mountain Project Office

YMP:JB-1615

Enclosures:

1. List of Open SDRs, w/encl.
2. SDR 285, Rev. 0, w/encls.

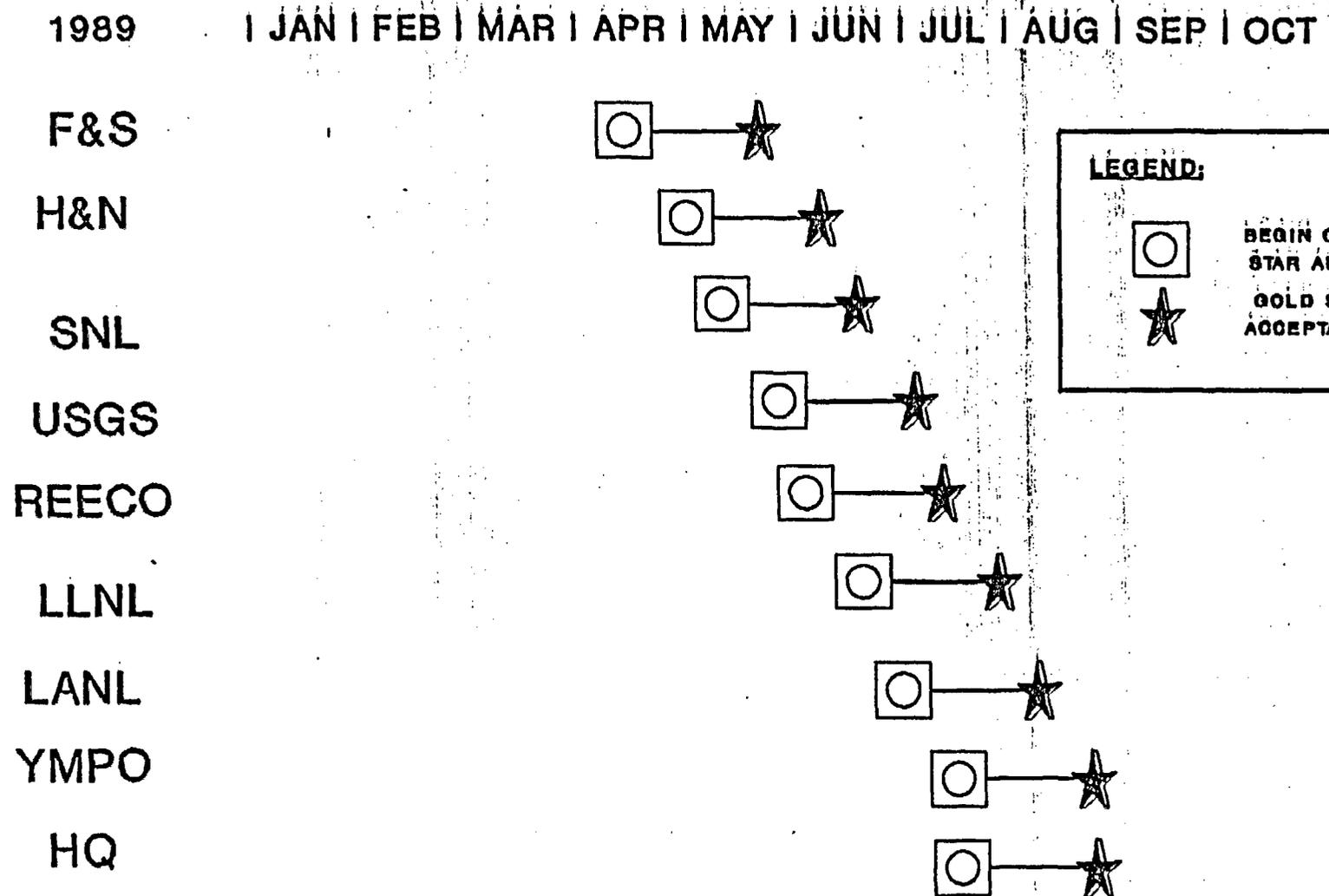
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Enclosure 3.

QA PROGRAM QUALIFICATION

REVISED "GOLD STAR" - PRELIMINARY 31 JAN 89



LEGEND:

□	BEGIN GOLD STAR AUDIT
★	GOLD STAR ACCEPTANCE

