



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

DATE: March 16, 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, *JWG* Sr. DR - YMP

SUBJECT: YMP Site Report for the month of February, 1989, and
through to March 10, 1989

The following report pertains to the QA, waste package and surface facility activities associated with the Yucca Mountain Project for the month of February.

I. QUALITY ASSURANCE

A. DOE Headquarters surveillance of YMP's implementation of the QAP-88-9 Rev. 2 and the Project's readiness to start Title II design of the ESF was conducted by a team of four QA specialists and four technical specialists from March 7 to March 9, 1989. The surveillance team identified the following as proposed significant deficiencies.

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1. There was insufficient documented evidence to determine adequacy and acceptability of technical process and technical basis for generating baseline documents (i.e., Systems Requirements document/YMP-MGDS; SDRD; and lower tier baseline documents.

2. Formal procedures were found lacking in describing technical and QA preparation, review and approval of technical documents. The team believes that lower tier technical documents should be reviewed against the next higher tier technical document for adequate and accurate inclusion of requirements and controls from this higher tier document.

3. The current hierarchy of baseline documents are not consistent with 88-3, "Systems Engineering Management Plan".

4. Organizational interfaces and interactions between different participating organizations (subcontractors) are not clearly described in procedures.

OR comments on this surveillance:

1. The DOE surveillance team found similar procedural deficiencies at DOE headquarters in their preparation of the top tier General Requirements document.

2. The team did not identify any technical deficiencies in the baseline documents both at headquarters and projects.

3. The team findings of the Projects procedural deficiencies were previously known to the project management and reported to DOE headquarters but were not recorded on Standard Deficiency Reports.

B. Status of QA Project's Surveillance of Participants

Fenix & Scisson, Inc. (F&S), Holmes and Narver, Inc. (H&N), Lawrence Livermore (LLNL), Los Alamos (LANL), and Sandia (SNL): All QA and design procedures necessary to start ESF Title II have been reviewed by QA projects and found acceptable except for some procedural corrections that are underway for H&N, LANL, and SNL. The surveillance of training records, and qualification of personnel and the verification of proper close-out of pertinent corrective actions and standard deficiency reports have been completed and found acceptable.

The surveillance of the U.S. Geological Survey (USGS) QA and design procedures, the training and qualification of personnel and the verification of proper close-out of pertinent corrective actions and standard deficiency reports is presently underway and a similar surveillance of Reynolds Electric and Engineering Co., Inc. (REECO) is scheduled for the week of March 20, 1989.

The OR has periodically observed these surveillances and found they were being conducted in an acceptable manner using detailed check lists which keys each applicable 88-9 control against an equivalent control in each procedure.

NOTE: The participants QA procedures for computer software programs have not been included in those required to be complete prior to the start of ESF Title II design. Precautions are being taken by QA Projects to assure no software programs are used prior to the project's acceptance of the control procedures. QA Projects are presently reviewing F&S and H&N software procedures and are expected to be approved within two weeks.

C. F&S Gold Star Audit

QA Projects is planning on conducting a QA programmatic audit of F&S April 10 through 14, 1989 to verify that F&S QA Program (implementing procedures) meets the requirements of NNWSI QAP-88-9 Rev. 2 and to verify the adequacy of implementation of the QA Program requirements. No technical work will be audited since no ESF Title II work is in progress. Again QA Project has just completed a 100% review of those F&S QA and design procedures necessary to start ESF Title II to assure they meet NNWSI QAP-88-9.

The schedule for conducting other Gold Star audits is addressed in Enclosure 1.

D. Software QA Program

During the observation of YMP-QA audit of F&S last November 7 through 14, 1988, it was reported that commercial grade software programs were used on ESF Title I design activities without proper verification and configuration management controls. This condition was described on WMPO Standard Deficiency Report No. 267 and a response provided to YMP by F&S through their letter of January 23, 1989 (Enclosure 2). Highlights of corrective actions are:

- Identify all computer software used in Title I design
- Identify all output documents utilizing computer software
- Identify programs that will require verification for Title II design
- Verify documentation
- Assess adverse effects

- Correct adverse effects
- If any deficiencies are identified, perform corrective actions as required
- Develop a Configuration Management System for computer software and train the F&S personnel to this program prior to start of Title II engineering

These actions are scheduled to be complete by February 28, 1989. QA Projects intends to verify the proper close-out of these corrective actions. Also as reported earlier QAP Projects is presently reviewing F&S software procedure.

QA Projects is aware of the possibility that other participants may have generated Title I designs and engineering data using commercial or unverified computer software programs and is therefore developing actions to investigate and identify areas of deficiencies.

II. WASTE PACKAGES AND SURFACE FACILITIES

Preliminary discussions were held with YMP personnel regarding the status of programs pertaining to waste packages and surface facilities. The long range planning and schedules have been developed from the work breakdown structure for these two work activities which are presently going through peer reviews prior to release. Additional discussions are planned to identify the ongoing activities pertaining to waste packages and surface facilities including the status of these activities. These activities are now under the responsibility of Leo Little who has just recently been appointed the Director of the Division of Engineering and Development replacing Larry Skousen who recently left YMP.

The waste package testing in G-Tunnel is in the phased power reduction stage. Projects states that the data acquisition from this testing has been encouraging. LLNL has received a request to brief DOE headquarters on waste package isolation impacts.

III. MISCELLANEOUS

- ◆ The results of the investigation pertaining to the Singer allegation are being evaluated by QA Projects. A report of this investigation is expected to be submitted by the QA organization within two months.
- ◆ Copies of QA procedures were submitted to J. Conway per his request.
- ◆ It was decided not to do a review of the F&S QA program and design controls for the start of ESF Title II design work due to the proposed planned Gold Star audit of F&S.

IV. ACTION ITEMS FOR MARCH AND APRIL

- ◆ Conduct a review of the hierarchy of baseline documents necessary to start ESF Title II and the documented QA, management, and process controls used in the preparation, review approval and control of these documents.
- ◆ Continue observing the QA Projects surveillances of the participants.
- ◆ Participate in the QA monthly QA meeting at Las Vegas on March 22, 1989.
- ◆ Attend the ASQC Energy Division on QA For Waste Management From the Project Manager's Perspective, April 2 through 5, 1989.
- ◆ Conduct more in-depth discussions with YMP technical individuals responsible for waste packages and surface facilities regarding status, schedules and any major problem areas pertaining to these two areas of activity.

cc: With enclosures: K. Stablein, R. E. Adler, J. E. Latz,
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Enclosures: (1) QA Program Qualification. (2) Correspondence
pertaining to SDR 267 regarding F&S software QA problem