



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

March 18, 1999

MEMORANDUM TO: John T. Greeves, Director  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

FROM: Ken Hooks  
Uranium Recovery Branch *Ken Hooks*  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

SUBJECT: HIGH-LEVEL WASTE QUALITY ASSURANCE TASK FORCE

Attached for your information are summaries of meetings between members of the U.S. Nuclear Regulatory Commission, Office of Nuclear Material Safety and Safeguards, High-Level Waste (HLW) Quality Assurance (QA) Task Force and personnel of the U.S. Department of Energy (DOE) and its Management and Operating Contractor (M&O) for the Yucca Mountain Site Characterization Project. These meetings, on January 25 and 26, and February 16 and 17, 1999, were held in conjunction with the activities of the NRC's On-Site Representatives (OR) Office in Las Vegas, Nevada, and were considered to be Appendix 7 meetings under the NRC/DOE Procedural Agreement.

Prior to these meetings, the members of the HLW QA Task Force reviewed documents concerning the HLW QA program and held discussions with NRC technical reviewers and QA specialists who had participated in NRC observations of DOE QA audits and review of DOE technical and QA documents. The meetings were held to further understand the problems which had been identified with the QA program and the steps that DOE and the M&O are taking to identify the root causes of the problems and implement corrective actions to resolve the current problems and preclude recurrence of such problems in the future.

As stated in the attached meeting summaries, the HLW QA Task Force members believe that DOE and the M&O are making a considerable effort to correct past problems and strengthen the QA program to prevent future problems. The schedules established by the M&O and DOE are very ambitious; although those items and events scheduled prior to February 17, 1999, appear to have been accomplished, there were indications that future schedule dates may be slipped or inadequate products produced to meet schedule dates. The HLW QA Task Force members believe that it will not be possible to properly evaluate the success of the DOE "recovery" program until sufficient time has passed for proper evaluation of root causes, definition of appropriate corrective actions, and implementation of the corrective actions.

Attachments: As stated

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Enclosure

**HIGH-LEVEL WASTE QUALITY ASSURANCE TASK FORCE  
SUMMARY OF MEETINGS ON JANUARY 25 & 26, 1999**

On January 25, 1999, I (Ken Hooks) visited the NRC's On-Site Representatives (OR) office in Las Vegas, Nevada. Accompanied by Bill Belke, one of the two NRC OR's, and another member of the recently formed High-Level Waste (HLW) Quality Assurance (QA) Task Force, I met with the DOE and M&O personnel listed in Attachment 1 to discuss the general status of the QA program and steps being taken to correct currently identified problems. As previously evaluated, based on the December 9, 1998, NRC/DOE QA/Management Meeting and various OR reports and NRC Observation Audit Reports, the QA program and QA organization are adequate, and have done an adequate job of identifying problems. However, the line organizations (M&O, Los Alamos National Laboratory, etc.) have done an inadequate job of implementing QA program requirements, and of performing timely and effective corrective actions once problems have been identified by the QA staff. A number of new or improved programs to correct or prevent future problems are underway, but most of them are either at the planning stage or have not been implemented for a sufficient period of time to judge their effectiveness. Many of the problems involving data qualification, scientific notebooks, computer models, purchasing, etc., appear to be recurrent problems which have existed for a long period of time in various aspects of the program. Since there have been previous "get well" or "recovery" programs in QA, it will be necessary to wait for sufficient implementation of the corrective actions (summer or fall 1999?) to judge whether the programs are effective.

On the morning of January 26, 1999, Bill Belke and I attended, with John Greeves, the Appendix 7 meeting which John Greeves requested with DOE to discuss the status of the QA program and the proposed corrective actions. DOE appeared to me to agree that the primary cause of the QA problems was inadequate line management implementation of the QA program. The M&O appears to now be taking the QA problems seriously and is promising effective corrective action. The M&O was still working on root causes versus apparent root causes, so that appropriate corrective actions could be determined. A copy of DOE's January 25, 1999, letter, "Management Plan and Response to Corrective Action Requests (CAR) and Status of Implementation of Corrective Actions," enclosing the M&O's management plan, was given to John Greeves at the meeting. Mr. Greeves told DOE of the recent formation of the HLW QA Task Force, and said that the NRC must see substantial improvement by the Site Recommendation date. My impression from the meeting was that both DOE and the M&O were assuming, in order to meet very ambitious schedules, that the reviews being done will show that data, computer models, etc., are essentially correct, and it was just the paperwork which was inadequate. Regardless, the schedules will be very difficult to meet.

In the afternoon, Bill Belke and I attended the Nuclear Waste Technical Review Board (NWTRB) meeting, and I met Dr. Jeffrey Wong, the NWTRB member who is responsible for tracking QA issues. I briefly discussed with Dr. Wong the formation and purpose of the HLW QA Task Force.

Attachment

PERSONNEL INTERVIEWED JANUARY 25, 1999

Edward Opelski	QATSS/MACTEC
William Glasser	QATSS/MACTEC
Charles Warren	QATSS/MACTEC
Henry Green	QATSS/SAIC
Cynthia Humphries-Alder	QATSS/SAIC
John Martin	QATSS/SAIC
Richard Spence	DOE/YMSCO
Ram Murthy	DOE/YMSCO

DOE/NRC Appendix 7 QA Meeting  
January 26, 1999

Attendance

Name	Organization	Telephone Number
April Hill	DOE/YMP/OLRC	702 794-5578
Bob Clark	DOE OQA	702 794-5583
Jean Younker	M+O	702 295 5497
Jack Bailey	M+O	702 295-4251
Susan Zimmerman	State of Nevada	775-687-3744
E.V. TIESENHAUSEN	CLARK COUNTY	702 455-5184
V. F. Forii	DOE/YMP/OPS	702-794-1470
NICK STELLAVATO	Nyp Co.	702-727-7727
Dick Spence	DOE/YMP/OPE	702-794-1455
William Brocavm	DOE/YMP/OLRC	702-794-1359
DONALD G. HORTON	DOE/YMP/PMD	702-794-1301
JOHN GRIEVES		
Kenneth R. Hooks	NRC	(301) 415-7777
Bill BELKE	NRC	702-794-5047
RAM B. MURPHY	DOE/RW-3	702-794-5549
Stan Echols	WINSTON & STRAWN	202 371 5777
Raymond Mele	MTS/BAH	702-794-5579
ALBERT C WILLIAMS	DOE OQA	(702) 794-5580
Marty Bryan	M+O Licensing	(702) 295-6751



## UPDATE ON HLW QA TASK FORCE

On February 16 and 17, 1999, Tom Trbovich (representing the Center for Nuclear Waste Regulatory Analyses) and I (John Spraul) were at the Las Vegas offices of the NRC, DOE, and DOE's M&O contractor for the Yucca Mountain Project. Bill Belke from the NRC's Las Vegas office and Englebrecht von Tiesenhausen representing Clark County, Nevada, were present at these meetings, and Susan Zimmermann representing the State of Nevada was with us on February 16. Attachment 1 is a list of the other persons that met with us. The purpose of these meetings was to gain insight (in addition to that gained by Ken Hooks during his January 25 visit to Las Vegas - see his e-mail of February 1) regarding the status and projected acceptability of the management plan and response to corrective action requests and status of implementation of corrective actions ("the plan").<sup>1</sup>

We spent February 16 and the morning of February 17 in meetings with DOE and DOE contractor personnel (M&O and USGS) directly involved in developing and implementing the plan. We generally followed the jointly developed agenda (Attachment 2). Attachment 1a lists DOE and DOE contractor personnel who participated in these meetings.

We devoted most of the afternoon of February 17 to meeting with other DOE and DOE contractor personnel involved in implementing the plan and assessing their opinions regarding the plan. Attachment 1b lists the personnel that we met with that afternoon. Before leaving on the afternoon of February 17, we met with those listed in Attachment 1c and reported our thoughts (not an NRC position) regarding the results of the meetings.

DOE noted two inconsistencies in the plan. That is, Items 2.2.4<sup>2</sup> and 6.2.2<sup>1</sup> (with scheduled completion dates<sup>1</sup> of May 3, 1999) cannot be completed until Items 2.2.3 and 6.2.1 respectively (with scheduled completion dates of October 29, 1999) have been completed. After our meetings we learned that, by direction of the acting M&O General Manager, efforts are underway to accelerate completion of Items 2.2.3 and 6.2.1.

Based on our February 16 and 17, 1999, discussions with involved DOE and M&O personnel and our review of objective evidence supplied by them, we believe:

1. The plan was on schedule at the time of our visit. That is, activities with scheduled due dates prior to February 15, 1999 had been completed prior to our meetings.
2. The schedule for activities with due dates after February 15, 1999, appears to be "meetable" except for items 2.2.4 and 6.2.2 (noted in the paragraph above and quoted in Footnotes 2 and 3 respectively). We believe items 2.2.4 and 6.2.2 will not be completed by their scheduled completion date of May 3, 1999.

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<sup>1</sup>DOE (Dyer) letter to NRC (Greeves), *Management Plan and Response to Corrective Action Requests (CAR) and Status of Implementation of Corrective Actions*, dated January 25, 1999.

<sup>2</sup>2.2.4 - If the results of 2.2.3 identify issues requiring further evaluation (e.g., software issue, model issue, procurement deficiencies), the issues will be identified in the appropriate tracking systems(s) such as the TDMS, Software Management System (SMS) and TBV system. The TBV number will remain open until required actions are complete. Any data having open issues and/or a TBV number will be corrected or qualified using approved alternate methods according to the revised YAP SIII.1Q, *Qualification of Unqualified Data (made effective November 18, 1998)*. For those data having no open issues after completion, the TBV number will be closed.

<sup>3</sup>6.2.2 - Based on the results of action 6.2.1 to determine extent, if the software qualification is confirmed with no outstanding issues requiring further evaluation/action the TBV number will be closed. If the results identify issues requiring further actions, such as CAR LVMO-98-C-002 data evaluation or user manual preparation, the issues and TBV number will be identified in the SMS until resolved.

<sup>4</sup>The scheduled completion dates in the Footnote 1 reference are the dates that the M&O has scheduled to complete the indicated activity/action and, if required, report the results to DOE. They are not the dates that DOE will report activity/action completion to the NRC.

3. The plan was on track at the time of our visit. That is, the plan appears to be pointed toward successful issue resolution, and successful issue resolution should provide confidence that site characterization will provide data, procurement controls, software configuration management, and model development of acceptable quality.

4. Successful implementation of the plan requires a very ambitious effort with relatively much to be done in a relatively short time. Continued attention to implementation of the plan by DOE and DOE contractor management could lead to its successful completion.

5. A goal of the Yucca Mountain Project management that is not specifically identified in the plan is effective implementation of the remaining requirements of DOE's *Quality Assurance Requirements and Description document (QARD)*. The culture change that the Yucca Mountain Project is striving for as part of the plan plus added management attention to all QARD requirements should help in reaching that goal.

Earlier in the history of the Yucca Mountain Project, the system for design that produced an unacceptable 2C design package was modified to the extent that subsequent design packages (as well as the reworked 2C design package) were generally acceptable with relatively little rework required. The plan is designed to reflect the lessons learned from the corrective actions taken regarding the 2C design package and should result in acceptable data, procurement controls, software configuration management, and model development leading to an acceptable license application.

ATTACHMENT 1.

OTHER ATTENDEES AT FEBRUARY 16 AND 17, 1999, MEETINGS

a. February 16 and February 17 a. m.

Bob Andrews	M&O/PA	Don Horton	DOE/PMD
David Calloway	M&O/CM	Robert Keele	M&O
Bob Clark	DOE/OQA	Mike Lugo	M&O/TRW
Robert Craig	USGS	Larry McGrath	M&O
Jim Gardiner	DOE/CAB	Ed Miller	M&O
April Gill	DOE/YMP	John Peters	M&O
Terry Grant	M&O/NEPO	Alden Segrest	M&O/PA
Hank Greene	OQA/QATSS	R. E. Spence	DOE/YMP
Bob Habbe	DOE/OQA	Ron Stevens	M&O/Lic.
Larry Hayes	M&O/NEPO	J Charles Warren	OQA/QATSS
Rob Henderson	M&O	Jean Younker	M&O

b. February 17 p.m.

Kal Bhattacharyya	M&O/MK	Dan McKenzie	M&O/MK
Richard Craun	DOE/Eng	Ed Opelski	DOE/Eng
Catherine Hampton	DOE/QA	Abe VanLuik	DOE/PA

c. February 17 Wrap-up

Jack Bailey	M&O	Alden Segrest	M&O/PA
Steve Brocoum	DOE	R. E. Spence	DOE/YMP
Bob Clark	DOE/OQA	Dan Wilkins	M&O
Mike Lugo	M&O/	Jean Younker	M&O



## ATTACHMENT 2

### AGENDA

#### Tuesday, 2/16/99: NRC Office, Room 501, Hillshire Building, Las Vegas, NV

7:45-9:00	QA Program Overview	R. Clark
9:00-11:30	CAR Integration - Corrective Action Board	R. Keele J. Younker J. Gardiner
11:30 - 12:30	Lunch	
12:30 - 2:00	CAR LVMO-98-C-006 - Software Configuration Management	D. Calloway
2:00 - 3:30	CAR LVMO-98-C-010 - Control of Model Development	R. Andrews A. Segrest A. VanLuik

#### Wednesday, 2/17/99: NRC Office, Room 501, Hillshire Building, Las Vegas, NV

8:00 - 8:30	Office of Project Execution Assistant Manager	R. Spence
8:30 - 10:00	CAR LVMO-98-C-002 - Data Quality	R. Craig T. Grant
10:00 - 12:00	VAR VAMO-98-C-005 - Procurement Controls	R. Henderson L. Mcgrath R Craig B. Habbe
12:00 - 1:00		
1:00 - 3:30	Meet with other DOE and DOE contractor personnel	
3:30 - 4:00	Wrap-up	S. Brocoum R. Spence R. Clark D. Wilkins J. Bailey J. younker