



Department of Energy
Office of Civilian Radioactive Waste Management QA: L
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OCT 03 1994

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ISSUANCE OF SURVEILLANCE RECORD YMP-SR-94-060 RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION (YMQAD) SURVEILLANCE OF THE CIVILIAN RADIOACTIVE WASTE MANAGEMENT SYSTEM MANAGEMENT AND OPERATING CONTRACTOR (CRWMS M&O) READINESS REVIEW OF THE EXPLORATORY STUDIES FACILITY (ESF) USING THE TUNNEL BORING MACHINE (TBM) (SCP: N/A)

Enclosed is the record of Surveillance YMP-SR-94-060 conducted by the YMQAD at the CRWMS M&O facilities at the Yucca Mountain Site, Nevada, July 18 through 22, 1994.

The purpose of the surveillance was to verify that CRWMS M&O performed the readiness review for the start of the ESF using the TBM in accordance with Quality Assurance Procedure QAP-2-6, Revision 2, Readiness Review, and to verify that the adequacy and implementation of the readiness review process meets the requirements of the Quality Assurance Requirements and Description Document DOE/RW-0333P, Revision 0.

No Corrective Action Requests were issued as a result of this surveillance. This surveillance is considered completed and closed as of the date of this letter. A response to this surveillance record and any documented recommendations is not required.

If you have any questions, please contact either Robert B. Constable at 794-7945 or Daniel A. Klimas 794-7696.

Richard E. Spence, Acting Director
Yucca Mountain Quality Assurance Division

YMQAD:RBC-4953

Enclosure:
Surveillance Record YMP-SR-94-060

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OFFICE OF
RADIOACTIVE WASTE MANAGEMENT
U.S. DEPARTMENT OF ENERGY
WASHINGTON, D.C.

QUALITY ASSURANCE SURVEILLANCE RECORD

SURVEILLANCE DATA

¹ORGANIZATION/LOCATION:
Civilian Radioactive Waste
Management (CRWMS)
/Management &
Operating(M&O) Contractor,
Nevada Test Site

²SUBJECT:
Operational Readiness Review for the
Tunnel Boring Machine (TBM)

³DATE: 7/14/94

⁴SURVEILLANCE OBJECTIVE:

To observe the Operational Readiness Review by the M&O for the start of the ESF using the TBM.

⁵SURVEILLANCE SCOPE:

To evaluate the adequacy of program and procedural compliance and the effectiveness of the M&O Operational Readiness Review for the start of Exploratory Studies Facility (ESF) activities using the TBM.

⁶SURVEILLANCE TEAM:
Team Leader:

Dan Klimas
Additional Team Members:

Don Harris
James Blaylock

⁷PREPARED BY:

Daniel Klimas 7-13-94
Surveillance Team Leader Date

⁸CONCURRENCE:

N/A
QA Division Director Date

SURVEILLANCE RESULTS

⁹BASIS OF EVALUATION/DESCRIPTION OF OBSERVATIONS:

See pages 2, 3, & 4

¹⁰SURVEILLANCE CONCLUSIONS:

See page 5

¹¹COMPLETED BY:

Daniel Klimas 9/29/94
Surveillance Team Leader Date

¹²APPROVED BY:

Don B. Conde 9.29.94.
QA Division Director Date

BLOCK 9 (Continued) BASIS OF EVALUATION/DESCRIPTION OF OBSERVATIONS

The purpose of this surveillance was to evaluate the adequacy of program and procedural compliance and the effectiveness of the Readiness Review conducted by the Management and Operating (M&O) Contractor for the start of construction of the Exploratory Studies Facility (ESF) using the Tunnel Boring Machine (TBM). The surveillance consisted of observing the Readiness Review Team's performance of implementing the Readiness Review Plan-of-Action Revision 2, and the Implementation Plan. Also evaluated was adequacy of compliance with the Office of Civilian Radioactive Waste Management (OCRWM) Quality Assurance Requirements and Description (QARD) and M&O procedure QAP-2-6 "Readiness Review".

The purpose of the Readiness Review as stated in the Readiness Review Implementation Plan was to evaluate whether all required preparations had been accomplished for the safe and successful operation of the TBM to be used in the ESF. Additionally, the stated objectives were to determine whether objective evidence exists that:

- 1) Work activity prerequisites have been satisfied.
- 2) Adequate numbers of personnel have been suitably trained and qualified.
- 3) Detailed implementing documents and management controls are available and approved.

The following personnel participated in the Readiness Review:

Colin A. Heath	Readiness Review Team Leader, M&O
John B. Blyer	Readiness Review Team, M&O
S. Thomas Freeman	Readiness Review Team, M&O
Jefferson R. McCleary	Readiness Review Team, M&O
Carl C. Pierce Jr.	Readiness Review Team, TRW Environmental Safety Systems, Inc. (TESS)
Elmer J. Sowder	Readiness Review Team, Reynolds Electrical and Engineering Company, Inc. (REECo)
Maxwell B. Blanchard	Oversight Team, Yucca Mountain Site Characterization Office (YMSCO)
John Robeson	Oversight Team, NVO
Dick P. Morrisette	Oversight Team, Science Applications International Corporation (SAIC)
Robert V. Barton	Oversight Team, YMSCO
Russ B. Baumeister	Oversight Team, YMSCO
Bill Boyle	Oversight Team, YMSCO
Hemi Kalia	Oversight Team, Los Alamos National Laboratory

Dan A. Klimas

Surveillance Team Leader, Yucca Mountain
Quality Assurance Division
(YMQAD)/Quality Assurance Technical
Support Services (QATSS)
Surveillance Team, YMQAD/QATSS
Surveillance Team, YMQAD

Donald J. Harris
Jim Blaylock

The following observations are provided relative to the adequacy and effectiveness of the Readiness Review process:

As part of the surveillance, the Readiness Review Implementation Plan and attribute list was reviewed for adequacy. The attribute list is found in Appendix A of the Implementation Plan and associated with Criteria Review and Approach Documents (CRADS) for evaluating specific core requirements. The approach to performing the Readiness Review as described by the Implementation Plan was to view the readiness in four phases. Phase 1; Start-up Testing Phase, Phase 2; Operation of the TBM after the tail shield clears the Starter Tunnel, Phase 3; Operation of the TBM and conduct of scientific investigations following installation of the mapping platform components and Phase 4; The operational phase begins when all components of the TBM and its direct support systems, including the muck conveyor systems in and outside the tunnel are in place and fully functional. Initially, the attribute list failed to identify all the required preparations and prerequisites for each affected organization and functional area and was not structured to allow a systematic method for evaluating the readiness for a specific phase. The Readiness Review Team's approach for the conduct of the Readiness Review was to obtain information about what requirements and prerequisites were needed to initiate ESF operations and TBM start-up based upon asking the affected organizations doing the work rather than examining source documents for this information. This would not assure that all requirements and prerequisites were evaluated to determine readiness to proceed.

The following are examples of where the surveillance team considered that the Readiness Review was neither fully effective in accomplishing the stated objectives, nor in verifying objective evidence exists to evaluate whether work prerequisites and requirements have been satisfied:

The Implementation Plan and attribute list lacked depth below the attributes to guide the Readiness Review team through the interviews in a systematic way that would assure traceability of the requirements being flowed down to the actual work activity and implementing documents. All work activity prerequisites and requirements should have been included in the attribute list prior to initiation of the Readiness Review.

Although the Implementation Plan's objective was to determine that individuals were suitably trained, the attribute questions did not contain the depth or the line of questioning needed to determine if the training was in deed suitable and effective for the process, operation or activity. No attempt was made to determine if an adequate level of understanding and comprehension had been achieved.

Although the Readiness Review team did verify that procedures and management controls were or were not available and approved, the schedule dictated that at best, only a cursory review of documents was performed.

Additionally, there were several contributing factors that resulted in the Readiness Review, as performed, not providing the level of detail and examination of objective evidence necessary to recommend or conclude that the start of ESF activities using the TBM are in an operational state of readiness to proceed.

The time taken to perform the Readiness Review seemed to be insufficient and it was stated in the entrance meeting that the Readiness Review would be completed by Friday, July 22, 1994 whether or not the Readiness Review team had covered the breadth that was expected by the observers. The time scheduled for conducting the Readiness Review was inadequate for the Readiness Review team to cover the full breadth for evaluating the entire integrated systems for the start of ESF activities using the TBM.

It did not appear that adequate resources were considered in the planning stages for the conduct of the Readiness Review. Additional team members were needed to cover the full breadth of a Readiness Review of this magnitude and importance.

The Readiness Review team did not demonstrate a thorough understanding of the YMSCO affected organizational responsibilities, the work authorization process, or responsibilities and work scopes.

The Readiness Review team did not include representation from the quality assurance organization. By having this type of individual, a better understanding of the scope of pre-planning efforts and the level of detail needed could have been included in the pre-planning stages.

BLOCK 10 (Continued) SURVEILLANCE CONCLUSIONS

To the extent the Readiness Review has been completed, the surveillance team, has determined that conduct of the Readiness Review was accomplished in accordance with QARD and M&O procedural requirements. However, the surveillance team considers that the Readiness Review was not fully effective in accomplishing stated objectives of the Readiness Review Implementation Plan, nor in verifying that objective evidence existed to evaluate whether work prerequisites and requirements were evaluated

From the initiation of the Readiness Review, there was an apparent difference of understanding as to the scope of the Readiness Review and the breadth and depth that was expected by YMSCO to thoroughly evaluate all requirements and prerequisites for full operation of the ESF. The original Readiness Review Plan-of-Action submitted by CRWMS M&O for YMSCO review focused mainly upon operation of the TBM and not a complete readiness for full ESF operations. Although the Readiness Review Team was responsive to YMSCO comments on the Plan-of-Action and incorporated additional attributes in the Implementation Plan, it is the Surveillance Team's opinion that the Readiness Review as performed did not achieve the level of detail necessary to support the recommendation that full operation of the ESF using the TBM is in a state of readiness to proceed.

RECOMMENDATIONS

1. It is recommended that DOE management independently review and determine readiness for ESF TBM operation.
2. It is recommended that prior to Phase 4 of ESF operation, a second Readiness Review or equivalent review be performed that from the outset, thoroughly evaluates compliance with requirements and completion of prerequisites for full ESF operation.