Department of Energy
Office of Civilian Radioactive Waste Management
Yucca Mountain Site Characterization Office
P.O. Box 98608
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JUN 19 1995

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ISSUANCE OF SURVEILLANCE RECORD YMP-SR-95-034 RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION'S (YMQAD) SURVEILLANCE OF THE CIVILIAN RADIOACTIVE WASTE MANAGEMENT SYSTEM MANAGEMENT AND OPERATING CONTRACTOR (CRWMS M&O) (SCPB: N/A)

Enclosed is the record of Surveillance YMP-SR-95-034 conducted by the YMQAD at the CRWMS M&O facilities in the Bank of America Building, Las Vegas, Nevada, and at the Yucca Mountain Site, May 23-31, 1995.

The purpose of the surveillance was to evaluate the preparation and implementation of "Plans for Continuing Tunnel Boring Machine (TBM) Advance" which documents actions taken to continue TBM operations when adverse ground conditions are encountered.

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 Kristi A. Hodges at 794-7807.

R. E. Spence

Richard E. Spence, Director
Yucca Mountain Quality Assurance Division

YMQAD:RBC-3595

Enclosure:
Surveillance Record
YMP-SR-95-034

YMP-5

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9506290209 950619
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Surveillance No. YMP-SR-95-034

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

QUALITY ASSURANCE SURVEILLANCE RECORD

SURVEILLANCE DATA

[1]ORGANIZATION/LOCATION:	[2]SUBJECT:	[3]DATE: 5/23-31/95
Civilian Radioactive Waste Management (CRWMS), Management and Operating (M&O) Contractor	Plans for Continuing Tunnel Boring Machine (TBM) Advance	

[4]SURVEILLANCE OBJECTIVE: To verify compliance with OCRWM Quality Assurance Requirements and Description (QARD), Rev. 2, Section 5 requirements in the preparation and implementation of Plans for Continuing TBM Advance.

[5]SURVEILLANCE SCOPE: To evaluate the process for documenting Plans for Continuing TBM Advance when adverse ground conditions are encountered and to verify that existing advancement plans comply with the established process.

[6]SURVEILLANCE TEAM:
Team Leader:
Kristi A. Hodges
Additional Team Members:
None

[7]PREPARED BY:	[8]CONCURRENCE:
Kristi A. Hodges 5/23/95	N/A
Surveillance Team Leader Date	QA Division Director Date

SURVEILLANCE RESULTS

[9]BASIS OF EVALUATION/DESCRIPTION OF OBSERVATIONS:
See pages 2 through 4

[10]SURVEILLANCE CONCLUSIONS:
See pages 4 through 5

[11]COMPLETED BY:	[12]APPROVED BY:
Kristi A. Hodges 6-15-95	6.19.95
Surveillance Team Leader Date	QA Division Director Date

EXCLUSIVE

Block 9 (Continued) Basis of Evaluation/Description of Observations:

The purpose of this surveillance was to verify compliance with Office of Civilian Radioactive Waste Management (OCRWM) Quality Assurance Requirements and Description (QARD) DOE/RW 0333P, Rev. 2, Section 5 requirements and effectiveness of the established process for preparation and implementation of Plans for Continuing TBM Advance. The surveillance was performed from May 23 through 31, 1995, at the Yucca Mountain Site and at the Bank of America Building in Las Vegas, NV.

Documents Reviewed

General Specification BAB000000-01717-6300-01501, Rev. 3

Technical Documentation Preparation Plan for Plans For Continuing TBM Advance, Rev. 00, DI: BAB000000-01717-4600-00024, April 03, 1995

Quality Administrative Procedure QAP-3-5, Development of Technical Documents, Rev. 5

Plan for Continuing TBM Advance (Bow Ridge Fault area) - January 31, February 1, February 6, February 13, and March 3, 1995 (No revisions)

Plan for Continuing TBM Advance (Station 05+38 m) - March 30, 1995, Rev. 0; April 3, 1995, Rev. 1; and April 4, 1995, Rev. 2

Plan for Continuing TBM Advance (Station 05+44 m) - April 6, 1995, Rev. 0 and April 14, 1995, Rev. 1

Personnel Contacted

Dana J. Rogers, Architect/Engineer (A/E), Exploratory Studies Facility Design, Subsurface Manager
Joseph W. Willis, M&O Location Quality Assurance (QA) Manager
Howard R. Cox, Kiewit/PB Quality Control Manager
Richard Bennett, M&O QA
Joseph Hayes, M&O QA
Robert L. Howard, M&O Product Integrity

Plans For Continuing TBM Advance Description/Evaluation

TBM advancement plans are generated to document compliance with Specification BAB000000-01717-6300-01501, Rev. 3, Requirement 3.01X. However, no approved method of documenting TBM advancement existed on January 31, 1995, when the TBM crew encountered a void in the Bow Ridge Fault area. At that time Construction and A/E representatives, to the best of their understanding, documented the ground conditions and a proposed plan for continuing TBM

operations in accordance with the specification requirements. Based upon discussions between A/E, Construction, and Yucca Mountain Quality Assurance Division (YMQAD) personnel, a determination was made to write a procedure by which advancement plans are developed, reviewed, and approved. On April 3, 1995, the CRWMS M&O issued a Technical Document Preparation Plan (TDPP), "Plans For Continuing TBM Advance," Rev. 00, DI: BAB000000-01717-4600-00024, which describes the format, content, review, approval, and records requirements for advancement plans.

TDPPs are developed in accordance with and subject to review criteria established in M&O QAP-3-5. Existing plans were reviewed for compliance with the format prescribed in the TDPP, but because initial plans were developed prior to establishing a format, only those developed after April 3, 1995, were verified to meet the format. Plans reviewed during this surveillance adequately reflect the prescribed requirements for format and content.

Because an encountered adverse ground condition may preclude immediate documenting of a plan, the specification and TDPP allow for documenting required actions and subsequent approvals after the actions have occurred. For the most part, actions are completed prior to their documentation, however, for existing plans (all stated as in-process) there is finish work; e.g., additional grouting/cementing of voids, that is to be accomplished before the plans are considered complete. There is a concern that plans will remain in-process while work continues with diminishing priority placed upon completing the remaining actions. It is recommended that these required actions be accomplished to enable completion and expeditious turnover of the records packages (see recommendation #1).

The decision to designate the process in a TDPP rather than a procedure was questioned. However, the OCRWM QARD, Rev. 2, Section 5 does not preclude use of a plan to develop another plan for implementation. Whether the Constructor should have procedures in place to address typical and expected adverse ground conditions was also questioned; but a general consensus is that potential occurrences are numerous and therefore should be handled on an individual basis in accordance with a plan.

Interfaces are established via initial review concurrence by representatives of the specified organizations. Signatures are indicated by the Constructor, M&O A/E, M&O Construction Management Organization (CMO), Test Coordination Office (TCO), M&O Systems Engineering (Determination of Importance {DIE} Group), and M&O QA. There is no concurrence by the DOE required per the specification or TDPP. Although signatures are generally attained after the plan has been accomplished, based upon documentation reviewed, they have been acquired within a short time-frame.

Discussions with M&O QA personnel indicate that an informal review for QA impact occurs prior to its initial review concurrence, although such a concurrence is not required per the specification. Memoranda were reviewed which indicate that DIE evaluations are performed and documented subsequent to plan concurrence, but no positive statements are made within the plans that assure the proposed advancement strategy will have no impact on QA or DIE requirements. Likewise, the TDPP requires that plan input data of indeterminate quality be documented, but no

positive statement is made in resultant plans that suspect data has not been incorporated therein. An assumption is that concurrence alone is adequate to document a preliminary review for impact to a DIE, quality, or data; however, it is recommended that plans reflect positive statements to attest that an evaluation for impact has occurred (see recommendation #2).

Final reviews are performed by the A/E, M&O DIE, and M&O QA when a plan package is compiled and deemed complete. Since the A/E and M&O QA are to review to stringent criteria established in QAP-3-5, it is recommended that plan initiators be aware/reminded of this review criteria to ensure that information included in the package will be acceptable upon final review (see recommendation #3).

The TDPP requires that materials used during plan implementation be identified in the plan, including identification of the appropriate Construction Work Package for submittal of materials used. Tracers, Fluids, and Materials (TFM) terminology is not stated, but according to Construction personnel, recording of TFM usage during plan implementation is consistent with that of normal construction operations. A concern is that no independent verification of TFM usage is performed. It is recommend that the available quality control (QC) function be utilized to verify plan implementation at the appropriate time in the process (see recommendation #4). Further evaluation of this subject will be performed in future YMQAD audits and surveillances.

Block 10 (Continued) Surveillance Conclusions:

Use of an advancement plan does not negate requirements for documenting deviations from specifications. In accordance with the TDPP, evaluations will be performed to identify impacted documents; i.e., specifications and drawings, that require revision. Field Change Requests (Level 2 changes) or Baseline Change Proposals (Level 3 changes) will be generated and referenced in the final record package. Likewise, Nonconformance Reports (NCRs) will be generated and referenced when ground support installed as a result of executing a plan does not meet design requirements. In addition, the Constructor's work package will reflect the use of an advancement plan and any change documents or NCRs. This will ensure consistency between the advancement plan package, Construction work package, and the as-built design.

Based upon the results of this surveillance, Plans for Continuing TBM Advance are considered adequate to document actions taken when adverse ground conditions are encountered. Since all plans generated to date are considered in-process, there is not yet enough information to determine the overall effectiveness of the established process. There were no Corrective Action Requests issued as a result of this surveillance; however, four recommendations for consideration are detailed below.

Recommendations

1. To preclude an indefinite in-process status of existing advancement plans, it is recommended that priority be placed upon completing remaining actions and a method of tracking; e.g., the Kiewit/PB open item list, be utilized to status the remaining actions.

2. Although impact evaluations occur before and after plan completion, it is recommended that the plan reflect positive statements to assure that such an evaluation has been performed and that the proposed strategy does not impact DIE/QA requirements.

3. Because the A/E and M&O QA are to perform a review to the criteria established in QAP-3-5, it is recommended that those who initiate and compile plan packages be aware and reminded of that review criteria. This will ensure that packages submitted for review are acceptable for timely turnover.

4. It is recommended that the available QC function be utilized to verify plan implementation at the appropriate time in the process. This independent verification would verify TFM usage as well as any other applicable inspection attributes.