



Department of Energy

Washington, DC 20585

QA: L

JUL 01 1997

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ISSUANCE OF SURVEILLANCE RECORD K/PB-SR-97-024 RESULTING FROM THE OFFICE OF QUALITY ASSURANCE (OQA) SURVEILLANCE OF THE KIEWIT/PARSONS BRINCKERHOFF (KIEWIT/PB) AND CIVILIAN RADIOACTIVE WASTE MANAGEMENT SYSTEM MANAGEMENT AND OPERATING CONTRACTOR (CRWMS M&O) - EXPLORATORY STUDIES FACILITY (ESF), FIELD OPERATIONS CENTER (FOC), AND SUMMERLIN OFFICES

Enclosed is the Quality Assurance Surveillance Record K/PB-SR-97-024 conducted by the OQA of the Kiewit/PB and CRWMS M&O - ESF, FOC, and Summerlin Offices on May 5 - 23, 1997.

The purpose of the surveillance was to determine the adequacy and completeness of construction records that serve as objective evidence of work performed, and to review the current record review processes for adequacy and effectiveness in identifying and correcting record discrepancies.

There was one Deficiency Report (DR) and one recommendation issued as a result of the surveillance.

DR YM-97-D-050 addresses technical and administrative/qualitative record discrepancies identified in Kiewit/PB record packages after all Constructor and CRWMS M&O record package reviews were complete. The issue of Constructor/CRWMS M&O record package review adequacy and effectiveness is included as part of this DR.

A recommendation is made regarding the CRWMS M&O Title III Architect/Engineer records package reviews, to include these reviews as part of the Title III acceptance process required for quality affecting systems/facilities.

The surveillance is considered completed and closed as of the date of this letter. A response to this surveillance record is not required; however, the open DR will continue to be tracked until it is closed to the satisfaction of the quality assurance representative and the Director, Office of Quality Assurance.

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PDR



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If you have any questions, please contact either James Blaylock at (702) 794-1420 or Wesley C. Pugmire at (702) 295-5912.


for Donald G. Horton, Director
Office of Quality Assurance

OQA:JB-1808

Enclosure:
Surveillance Record K/PB-SR-97-024

cc w/encl:

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

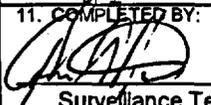
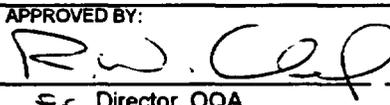
Surveillance No. K/PB-SR-97-024

QUALITY ASSURANCE SURVEILLANCE RECORD

SURVEILLANCE DATA

<p>1. ORGANIZATION/LOCATION: Kiewit/Parsons Brinckerhoff (K/PB) and Civilian Radioactive Waste Management System Management & Operating Contractor (CRWMS M&O) - Exploratory Studies Facility (ESF), Field Operations Center, and Summerlin Offices</p>	<p>2. SUBJECT: Record Packages and Record Package Reviews</p>	<p>3. DATE: May 5 - 23, 1997</p>
<p>4. SURVEILLANCE OBJECTIVE: Determine the adequacy and completeness of construction records that serve as objective evidence of work performed. Review the current record review processes for adequacy and effectiveness in identifying and correcting record discrepancies.</p>		
<p>5. SURVEILLANCE SCOPE: The scope of this surveillance was limited to review of in-process and complete, quality affecting record packages. In-process packages were reviewed for comparison purposes and to determine the state of records prior to performance of Constructor and CRWMS M&O reviews. In-process records were not considered when preparing surveillance conclusions.</p>	<p>6. SURVEILLANCE TEAM: Team Leader: <u>W. C. Pugmire</u> Additional Team Members: <u>C. D. Osborne</u> <u>P. H. Cotter</u></p>	
<p>7. PREPARED BY:  <u>Wesley C. Pugmire</u> Surveillance Team Leader</p>	<p>8. CONCURRENCE: <u>N/A</u> Director, OQA</p>	<p>Date <u>5/27/97</u> Date</p>

SURVEILLANCE RESULTS

<p>9. BASIS OF EVALUATION/DESCRIPTION OF OBSERVATIONS: This surveillance was performed to determine if construction records and record packages, when reviewed both individually and as a whole, provide adequate objective evidence that work was performed in accordance with Project requirements. In addition, an overview of record package reviews was performed to determine the adequacy/effectiveness of reviews in the identification and resolution of record package discrepancies. The combined reviews include qualitative, administrative, and technical considerations such as legible entries, accuracy of data/information recorded, completeness of records, assurance the record format used was appropriate for documenting the work performed, and determining if records are identifiable (traceable) to the items or activities to which they apply.</p> <p>See Pages 2-5</p>	
<p>10. SURVEILLANCE CONCLUSIONS: Based on information gathered during the course of this surveillance, record packages which document quality affecting construction, are unsatisfactory. The Constructor and CRWMS M&O record package reviews are not effective in the identification and resolution of record discrepancies. There was one Deficiency Report (DR) and one recommendation resulting from this surveillance.</p> <p>See Page 5</p>	
<p>11. COMPLETED BY:  <u>Wesley C. Pugmire</u> Surveillance Team Leader</p>	<p>12. APPROVED BY:  <u>R.W. C. [unclear]</u> Director, OQA</p>
<p>Date <u>6/25/97</u> Date</p>	<p>Date <u>6/30/97</u> Date</p>

Block 9 (continued) BASIS FOR EVALUATION/DESCRIPTION OF OBSERVATIONS:

Presently, there are a minimum of four (4) reviews performed on each record package which documents "quality affecting" (Q) construction. The Constructor's Quality Assurance (QA)/Quality Control (QC) organization performs a comprehensive record package review to assure that records meet technical and administrative/qualitative requirements. The Constructor's Record Management organization performs an administrative/qualitative review of records while preparing record packages for submittal to the CRWMS M&O Records Processing Center (RPC). A Title III technical review of packages is accomplished after receipt by the RPC, prior to record imaging. A final administrative/qualitative review is performed by RPC personnel, followed by record imaging and storage.

As previously stated, the Constructor QA/QC record package review is comprehensive and is concerned with all aspects of individual records and record packages normally considered during technical, administrative, and qualitative record reviews. The review is voluntary, as it is not driven by specific design or contractual requirements. All Q records are included in this review, whether originated by QA/QC or by other functional entities within the Constructor's organization. The review process is not performed in accordance with approved procedures or assisted by use of standard review forms or checklists. Deficiency tracking, disposition, and closure is accomplished by use of informal control methods and "desktop" instructions, internal to the Constructor QA/QC organization. However, reviewers do utilize applicable Project design documents to determine technical criteria and a combination of Project and Constructor implementing procedures (e.g., Office of Civilian Radioactive Waste Management AP-17.1Q, Record Source Responsibilities for Inclusionary Records; and K/PB MCP-17.0, Records Management) to determine administrative and qualitative record criteria (i.e., single line-out corrections, initial, and date, legible entries, blanks accounted for, authority for correcting records, etc.).

The QA/QC review is followed by an administrative/qualitative review performed by K/PB Records Management. This review is performed in accordance with the same Project and Constructor implementing procedures identified above, as are the remainder of administrative/qualitative reviews performed. Record discrepancies identified during this review, which require assessment and/or correction, are flagged in the record package which is returned to the Constructor QA/QC for resolution action. Once all discrepancies are resolved, the record package is validated and prepared for submittal to the RPC for further processing and storage.

The CRWMS M&O Title III A/E has implemented a Non-Q, technical review of both Q and Non-Q record packages, to ensure that records are technically adequate and in compliance with applicable Project design documents. The Title III review was inserted between the Constructor's reviews and the final RPC review prior to record imaging. This review is performed on a selected basis (less than 100% of the packages are reviewed) with the sample size adjusted based on the confidence level established by results of previous reviews. Reviews are performed and documented in accordance with DI: BABO00000-01717-5000-00003, Document Review, which includes methods for documenting discrepancies, assigning action to the Constructor for discrepancy resolution, determination of discrepancy status, and closure of discrepancies.

9. Basis of Evaluation/Description of Observations: (continued)

Following Title III review, all construction record packages are forwarded to the RPC through the Document Records Center (DRC) located on-site at the Field Operations Center. The DRC is responsible for interim record storage, record indexing, and record package transfer to the RPC Summerlin offices. Final record package review(s) are performed by CRWMS M&O RPC personnel prior to, and during subsequent record processing operations. These reviews are administrative/qualitative reviews and are performed in accordance with AP17.1Q. Controls are established for documenting, tracking, and resolving record package discrepancies not identified during prior record package reviews. The purpose of the DRC/RPC review is to accept the records package as being complete and accurate as represented by record transmittal documents. After these reviews are complete, the record is "imaged" on CD-ROM medium for long term retention and storage.

The surveillance team reviewed a random selection of "accepted" record packages to provide insight as to the adequacy, accuracy, and completeness of the final record product. The review included the following record packages: WP 2.23.2X and WP 2.23.2Y, Installation of Steel Sets - North Ramp (Sta. 46+00 to 48+00 and 48+00 to 50+00, respectively) and WP 2.20.3D and WP 2.20.3E, TBM Excavation - TS Tunnel Loop (Sta. 6+00 to 8+00 and 8+00 to 10+00, respectively). Other record packages which have not been reviewed and others only partially reviewed were included in this surveillance to provide the team a perspective on the review process or as an alternate reference source for validating data included in related record packages. These packages include WP 2.20.3Y, WP 2.25.4A, WP 2.23.7X. Records from packages, which have not yet been reviewed, are used for illustrative and comparative purposes only and were not the basis of deficiency documents or recommendations resulting from this surveillance.

From the review, the following record discrepancies were identified. Discrepancies are classified and divided as being either technical or administrative/qualitative issues.

Technical Issues

- * Changes/Corrections to Q records without authorization and/or without documenting/ referencing justification for changes/corrections. Organizations signatory (review/ approval/ concurrence) to the changed/corrected documents are not advised of, or signatory to the changes/corrections. Refer to WP 2.23.2Y Inserts B-31, 32, and 33.
- * QC records and Construction records documenting the same work, in different packages (i.e., total count of steel sets installed during shifts) do not match. Refer to WP 2.23.2Y Inserts B-13, 14, and WP 2.20.3Y Inserts B-27, 151*. *(Note: WP 2.20.3Y Insert 151 documents 6 steel sets installed on grave shift 4/25/96, there is no corresponding construction installation or QC inspection/monitoring report in WP 2.23.2Y)
- * QC Reports, which document the same inspection activity, using the same measuring and test equipment, document apparently conflicting results (specifically the hydraulic jacking pressure for a steel set erector was documented as capable of a maximum of 6500 psi on grave

9. Basis of Evaluation/Description of Observations: (continued)

shift and a maximum of 8000 psi on the following day shift). The explanation for the difference is the variable electrical power demands of the tunnel boring machine during excavation causes up to 2000+ psi variance from the electrical pump powering the hydraulic jacks. The issue is that this explanation is not included in or referenced by these reports, leaving the reviewer with the idea that a problem exists. Refer to 2.23.2Y Inserts B-3 and 4.

- * QC Monitoring and Inspection Reports document "N/A" for required daily inspections when other daily inspection points are documented as reviewed. No justification or explanation provided for the N/A entries (N/As in required inspection blocks places K/PB in violation of A/E approved monitoring and inspection plans implemented as a graded approach methodology. Inspection, test, and operating status is in question). Refer to 2.23.2Y Insert B-28.
- * QC Concerns process and forms, which are not Project recognized or regulated, are included in Work Packages as "Q" records. The QC Concerns process is a "screening" tool implemented by K/PB QC management. There are no controls in place for assuring that issues are properly addressed, tracked, and closed, unless transferred to Project recognized processes (i.e., Non-Conformance Report process). Refer to 2.23.2Y Insert B-41.
- * Construction Completion List items signed off by QC as accepted without documenting or referencing objective evidence to support closure. Refer to 2.23.2Y Insert B-43.
- * Design document revision levels/effective dates have been deleted from Work Packages and individual inspection records do not reference design document revision used for acceptance. Refer to 2.23.2Y Insert C-1 and 20.

Qualitative/Administrative Issues

- * Improper corrections made (i.e., typewriter/computer generated "line-outs" and initials/date, writeovers, no initials/date, etc.). Refer to WP 2.23.2Y Insert A-1, B-1, and C-1.
- * QC Manager signature missing from Work Package Traveler signifying monitoring and inspection of work was accomplished as planned. A "delta 1" is included on the QC Managers line item which refers to the "Open Items List". The QC Manager should sign for the work accomplished, excluding work to follow as a result of the open items documented for a particular section of tunnel. Refer to WP 2.23.2Y Insert B-2.
- * Work Package Inventories and included records have information added to previously "N/A" blocks. Refer to WP 2.23.2Y Inserts B-1 and C-1.
- * Work Package Inventories include corrected/changed information, written directly over existing information, making both entries difficult or impossible to discern. Refer to WP 2.23.2Y Insert B-2.

9. Basis of Evaluation/Description of Observations: (continued)

- * Information entered on Work Package Inventories and Authorizations is not consistent (i.e., "date" block completed with revision level in some cases, effective/implemented date in other cases). Refer to WP 2.23.2Y Insert A-3 and 10.
- * K/PB implementing procedures are not clear in identifying who is authorized/qualified to make revisions to inspection reports other than the originator. Refer to examples from Technical Issue No. 1, above.

Based on the type and volume of record package discrepancies noted during the surveillance, the adequacy and effectiveness of current record packages and record package reviews is considered unsatisfactory. This condition is documented by DR YM-97-D-050. Refer to Block 10, Surveillance Conclusions, for additional information.

10. Surveillance Conclusions: (continued)

DR-YM-97-D-050 addresses technical and administrative/qualitative record discrepancies identified in K/PB record packages after all Constructor and CRWMS M&O record package reviews were complete. The issue of Constructor/CRWMS M&O record package review adequacy and effectiveness is included as part of this DR.

Recommendation No. 1 - A recommendation is made regarding the CRWMS M&O Title III A/E record package reviews, to include these reviews as part of the Title III acceptance process required for quality affecting systems/facilities. The record package review process should be upgraded to "Q" and combined with system walk-down verifications. Based on the results of this surveillance, all QA record packages which document ESF construction should be reviewed, as opposed to a "selected" sample, as is presently required by Title III Documentation Instruction (DI) BABOOOOO-01717-5000-0003, Document Review.

In addition, Department of Energy contract DE-AC01-91RW00134, as modified, in conjunction with associated Work Authorization Documents, requires the CRWMS M&O to perform Title III design inspections and provide acceptance for systems and facilities constructed in accordance with approved (Title II) design. Title III inspection and acceptance can only be accomplished by review of the objective evidence available, in this case, the physical systems/facilities (when and where accessible) and construction/installation records of the same. Precedence for this practice is established in commercial nuclear generating facilities where licensing is based in part on Q system records reviews and system walkdown verifications. These reviews provide assurance that systems and components are constructed/installed as designed and will operate as designed.

Personnel Contacted

T. L. Badredine, M&O Records Supervisor
H. R. Cox, K/PB QC Manager
C. R. Garrett, M&O Title III A/E Supervisor
G. Heaney, M&O Title III A/E - Construction Records Review

K. C. Krank, K/PB QC Supervisor
T. L. Mueller, M&O Records Supervisor
C. A. Rixford, K/PB Records Management Supervisor
J. Robinson, M&O Title III A/E - Construction Records Review
S. Shannon, M&O Records
K. K. Spence, K/PB Document Control Supervisor
C. W. Wade, M&O CMO Records Coordinator

Documents Reviewed or Referenced

Project Specifications:

BABOOOOOO-01717-6300-01400, Rev. 02, Constructor QC/QA
BABOOOOOO-01717-6300-01501, Rev. 04, Subsurface General Construction
BABEAOOOO-01717-6300-02313, Rev. 01, Subsurface Drilling and Blasting
BABEEOOOO-01717-6300-02341, Rev. 00, ESF Ground Support - Structural Steel and Acc.

K/PB Record Packages:

2.20.3D - TBM Excavation - North Ramp (Sta. 06+00 to 08+00)
2.20.3E - TBM Excavation - North Ramp (Sta. 08+00 to 10+00)
2.20.3Y* - TBM Excavation - North Ramp (Sta. 48+00 to 50+00)
2.23.2X - Installation of Steel Sets - North Ramp (Sta. 46+00 to 48+00)
2.23.2Y - Installation of Steel Sets - North Ramp (Sta. 48+00 to 50+00)
2.25.4A* - Thermal Test Area Phase I (Alcove No. 5) Excavation and Support
2.23.7X* - Installation of Rockbolts and Accessories (Sta. 46+00 to 48+00)

*These record packages have not been reviewed by K/PB & CRWMS M&O reviewing authorities.

Project Documents/Procedures:

DOE/RW-0333P, Rev. 6, Quality Assurance Requirements and Description
AP-17.1Q, Rev. 0, Record Source Responsibilities for Inclusionary Records

Implementing Procedures:

M&O DI: BABOOOOOO-01717-5000-00003, Rev. 0, Document Review
K/PB MCP-17.0, Rev. 12, Records Management

Other:

Memorandum from H.R. Cox to All QC Personnel dated 01/11/96, subject Identification of Suspected Quality Problems