



Department of Energy
Office of Civilian Radioactive Waste Management
Yucca Mountain Site Characterization Office
P.O. Box 98608
Las Vegas, NV 89193-8608

JUN 05 1995

Daniel L. Koss
Technical Project Officer
for Yucca Mountain
Site Characterization Project
Reynolds Electrical & Engineering Co., Inc.
P.O. Box 98521
Las Vegas, NV 89193-8521

ISSUANCE OF SURVEILLANCE RECORD YMP-SR-95-025 RESULTING FROM
YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION'S (YMQAD) SURVEILLANCE
OF REYNOLDS ELECTRICAL & ENGINEERING CO., INC. (REECO)
KIEWIT/PARSONS BRINCKERHOFF (KIEWIT/PB) (SCPB: N/A)

Enclosed is the record of Surveillance YMP-SR-95-025 conducted by
the YMQAD at the REECO/Kiewit/PB facilities in Las Vegas and the
Yucca Mountain, Nevada, site from March 31 through April 10,
1995.

The purpose of the surveillance was to verify that construction
water usage in the Exploratory Studies Facility is controlled as
required by applicable specification and procedure.

One Corrective Action Request (CAR) YM-95-038 was issued as a
result of this surveillance. Response to the CAR, which was
transmitted via separate letter, is due by the date indicated
in Block 13 of the CAR.

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; however, the
open CAR will continue to be tracked until it is closed to the
satisfaction of the quality assurance representative and the
Director, YMQAD.

If you have any questions, please contact either Robert B.
Constable at (702) 794-7945 or Robert L. Holliday at (702)
295-7992.

Richard E. Spence, Director
Yucca Mountain Quality Assurance Division

YMQAD:RBC-3400

Enclosure:
Surveillance Record YMP-SR-95-025

YMP-5

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PDR WASTE
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WM-11

JUN 05 1995

Daniel L. Koss

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cc w/encl:

D. A. Dreyfus, HQ (RW-1) FORS
R. W. Clark, HQ (RW-3.1) FORS
C. J. Henkel, NEI, Washington, DC
W. L. Belke, NRC, Las Vegas, NV
~~J. G. Spraul, NRC, Washington, DC~~
R. R. Loux, NWPO, Carson City, NV
Cyril Schank, Churchill County Commission, Fallon, NV
D. A. Bechtel, Clark County Comprehensive, Las Vegas, NV
J. D. Hoffman, Esmeralda County, Goldfield, NV
Eureka County Board of Commissioners,
Yucca Mountain Information Office, Eureka, NV
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Jason Pitts, Lincoln County, Pioche, NV
V. E. Poe, Mineral County, Hawthorne, NV
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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:
 Reynolds Electrical and
 Engineering Company, Inc.
 (REECO)/Kiewit/Parsons
 Brinkerhoff (Kiewit/PB) Yucca
 Mountain Site

²SUBJECT:
 Construction Water Usage - Exploratory
 Studies Facility (ESF)

³DATE: 4/10/95

⁴SURVEILLANCE OBJECTIVE:
 Verify that construction water usage in the ESF is controlled as required by applicable specification and procedure.

⁵SURVEILLANCE SCOPE:
 Construction water usage in the ESF.

⁶SURVEILLANCE TEAM:
 Team Leader:

Robert L. Holliday

Additional Team Members:

Raul A. Hinojosa

⁷PREPARED BY:

Robert L. Holliday for
Robert L. Holliday

Surveillance Team Leader

3-31-95
 Date

⁸CONCURRENCE:

N/A

QA Division Director

Date

SURVEILLANCE RESULTS

⁹BASIS OF EVALUATION/DESCRIPTION OF OBSERVATIONS:

See Page 2

¹⁰SURVEILLANCE CONCLUSIONS:

See Pages 2 through 4

¹¹COMPLETED BY:

Robert L. Holliday for
ROBERT L. HOLLIDAY

Surveillance Team Leader

6-1-95
 Date

¹²APPROVED BY:

Robert L. Contable for
Robert L. Contable for

QA Division Director

6-1-95
 Date

(Block 9 Continued) BASIS OF EVALUATION/DESCRIPTION OF OBSERVATIONS:

A surveillance was performed of Kiewit/PB and REECo from March 31 to April 10, 1995. The purpose of the surveillance was to evaluate and verify acceptability of activities involved in the control, documentation and accountability of water usage within the ESF during subsurface construction.

The surveillance consisted of direct observation of Lithium Bromide tracer solution preparation; review of specifications, plans, procedures and documentation for water usage within the ESF and personnel interviews with REECo and Kiewit/PB personnel.

Specifically the following documents were reviewed and utilized for this surveillance:

- Management and Operating Contractor (M&O) Product Integrity Assessment
- REECo Deficiency Notice (DN) 95-043
- YMP/91-23, Tracers, Fluids and Materials Management Plan, Revision 2
- Specification BAB000000-01717-6300-01501, Revision 3, "Subsurface General Construction"
- REECo procedure TC-586-SP-0001, Revision 2, "Sampling Lithium Bromide Tracer Water"
- REECo procedure TC-581-SR-0009, Revision 2, "Water Use, Control and Accountability for Underground Construction"
- REECo procedure TC-581-SP-0001, Revision 2, "Water Use, Control and Accountability"
- REECo Inspection Checklist QC-0436, Form 0013, Revision 5
- Kiewit/PB Spill Response Plan, Revision 0
- Kiewit/PB Procedure TCP-2.7, Revision 3, "Water Use and Control-Subsurface"
- YMP/CM-0019, Revision 1, "Exploratory Studies Facility Design Requirements" (ESFDR)

The following in-process activities were monitored:

- The filling of the Lithium Bromide mixing tank with 8,000 gallons of water.
- The addition of the Lithium Bromide solution.
- The taking of the sample to be sent to the Material Testing Laboratory for evaluation.
- The water tank system for usage in the ESF and the methodology for verifying actual quantities used.
- The water distribution system within the ESF.

Block 10 Continued) SURVEILLANCE CONCLUSIONS:

Based on interviews, visual observation of equipment and review of documentation two deficiencies were identified which resulted in the issuance of one Corrective Action Request (CAR) relative to REECo and Kiewit/PBs scope of responsibilities. In addition, one Nonconformance Report (NCR) was generated during the course of this surveillance:

(Block 10 Continued) SURVEILLANCE CONCLUSIONS:

Deficiencies:

- **CAR YM-95-038 was issued to document that REECo and Kiewit/PB were not adhering to the following requirement of Exploratory Studies Facility Design Requirements (ESFDR), YMP/CM-0019, Revision 1. ESFDR Section 3.2.2.1 J.6 states: "Management of water entering the ESF shall include quantity, location, and water balance inflow versus outflow," Section 3.2.2.2.2 M states in part: "The water system shall ensure that all of the water flows are measured to document total amounts of water used for various operations...."**

Contrary to the above, the actual water usage amounts within the ESF have not been accurately reported or recorded by the constructor. The quantities of water used within the ESF has not been accurately reported based on two areas of noncompliance: 1) NCR Yucca Mountain Site Characterization Office (YMSCO) 95-0111, documents that meters used for the water distribution system were not calibrated; and 2) DN 95-043, documents that water usage meters were not installed as required by specifications. Based on this, the water balance inflow versus outflow cannot be stated as required by the ESFDR. Although two deficiency documents (the NCR and DN) document the calibration deficiency and the lack of required water metering, neither document calls out for the evaluation of data submitted in accordance with the Tracers, Fluids and Materials (TFM) Management Plan.

- **Specification BAB000000-01717-6300-01501, Revision 3, requires that water be metered from the conveyor dust control headers and for water discharged outside the tunnel. However, neither the conveyor dust control headers nor the water discharge lines had meters for determining water usage and discharge. In discussions with REECo and Kiewit/PB QA it was found that a previously issued DN 95-043 addressed the fact that the conveyor dust control headers were not metered as required by the specification. However, the deficiency notice did not address the fact that the water discharge line was not metered. During these discussions it was agreed by Yucca Mountain Quality Assurance Division (YMQAD), REECo and Kiewit/PB to allow the REECo DN to address the subject of the water discharge line not being metered. Based on this, the resolution of this deficiency will be resolved within REECo DN 95-043.**

Nonconformance Report:

- **NCR YMSCO 95-0111, was generated during the course of this surveillance and documents that the water meters on the receiving line of the mixing tank for tracer water and the holding tanks discharge into the ESF have not been calibrated.**

This condition was evaluated during the course of this surveillance for further corrective action (such as a CAR). However, based on interviews with REECo and Kiewit/PB personnel, observation of their construction activities and past history; this condition was determined to be isolated in nature and requires no further corrective action than that initiated by NCR YMSCO 95-0111.

(Block 10 Continued) SURVEILLANCE CONCLUSIONS:

RECOMMENDATIONS:

Based on the results of this surveillance the following recommendation are offered for consideration:

Specification BAB000000-01717-6300-01501, Revision 03, Subsection 3.01 P states in part:

"QA Control: The amount of construction water lost in TS North Ramp and associated alcoves shall not exceed 22m³ averaged over 3 linear meters. For excavations...."

It is not clear whether this limit applies as an absolute limit at any given point of the North Ramp Tunnel, or as stated during interviews with Kiewit/PB, as an average use for the whole tunnel. If this is an absolute limit at any given point, then it stands to reason that the constructor must keep track of the water usage by tunnel location i.e., location 4+15 m X amount of water was used. It is recommended the specification should be revised to clarify the intent and meaning of this subsection.

STATEMENT OF OVERALL ACCEPTABILITY

The activities surveilled by this surveillance with the exception of the items cited in NCR YMSCO 95-0111, REECo DN 95-043 and CAR YM-95-038 were found to be in accordance with procedural and specification requirements and are considered acceptable.

The following individuals were contacted during the course of this surveillance:

Augustin Passalacqua - M&O/Morrison Knudson
Jon D. Christensen - Kiewit/PB
Steve Schuerman - Kiewit/PB
Mark Ramsey - Kiewit/PB
Mick Mueller - Kiewit/PB
Freddie Beason - M&O
Bobby Kehrman - REECo
Bobby Vigil - REECo
Evert Mouser - REECo
William Glasser - REECo
Bob Rommell - REECo
Kanti Patel - REECo
Howard Cox - Kiewit/PB
Carol Rixford - Kiewit/PB
Conrad A. Fischer - Kiewit/PB
Steven S. Ricks - REECo