



**Department of Energy**

Washington, DC 20585

QA: QA

OCT 04 2002


T. W. Doering  
Bechtel SAIC Company, LLC  
1180 Town Center Drive, M/S 423  
Las Vegas, NV 89144

**VERIFICATION OF CORRECTIVE ACTION AND CLOSURE OF DEFICIENCY REPORT  
(DR) BSC(O)-02-D-123 RESULTING FROM THE OFFICE OF QUALITY ASSURANCE  
(OQA) AUDIT BSC-ARC-02-09**

The OQA staff has evaluated the corrective action of DR BSC(O)-02-D-123 and determined the results to be satisfactory. As a result, the DR is considered closed.

Disposition of this DR has resulted in no residual impact.

If you have any questions, please contact either James Blaylock at (702) 794-1420 or Christian M. Palay at (702) 794-1486.



Ram B. Murthy, Acting Director  
Office of Quality Assurance

OQA:JB-1880

Enclosure:  
DR BSC(O)-02-D-123

NM 5507  
WM-11



T. W. Doering

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OCT 04 2002

cc w/encl:

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Robert Latta, NRC, Las Vegas, NV  
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OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT  
U.S. DEPARTMENT OF ENERGY WASHINGTON, D.C

8  Deficiency Report  
 Corrective Action Report  
No BSC(0)-02-D-123  
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DEFICIENCY REPORT/CORRECTIVE ACTION REPORT

1. Controlling Document (Document ID and Revision or Date)  
AP-SIII.3Q, Revision 1, ICN 1

2 Related Report No  
BSC-ARC-02-09

3 Responsible Organization  
BSC Science & Engineering Testing

4. Discussed With  
Asha Kalia

5 Requirement  
AP-SIII.3Q Section 5.1.1 h) states "If data are Qualified, Acquired, or Developed, on (or after) 06/30/1999, and are not TPO, develop a Record Road Map (form AP-3.15Q.2) in accordance with AP-3.15Q, *Managing Technical Product Inputs*. Once the Record Road Map is completed, retain for processing of applicable records in accordance with Section 6.0."

6 Description of Condition  
Contrary to the above requirement, there is no objective evidence that Record Road Maps were generated and submitted to the Records Processing Center (RPC) for the following Data Tracking Numbers (DTN)  
1. MO0109EBSCT3CD.010  
2. MO0201THERMGRT.000  
3. MO0201EBSTCRST.014.

Has work been stopped?  Yes  No

7 Initiator  
Christian M. Palay

9 Does a stop work condition exist?  
 Yes  No  N/A  
If Yes, Check One  A  B  C  D

Printed Name Signature Date

10 Recommended Actions  
None.

11. QA Review  
Christian M Palay

12 Response Due Date  
10 Working days after issuance

Printed Name Signature Date

13. QAM Issuance Approval  
Ram B. Murthy

14 Corrective Actions Verified/Closure  
Christian Palay

15 QAM/Closure Approval  
James Blyskal for

Printed Name Signature Date

14 Corrective Actions Verified/Closure  
Christian Palay

15 QAM/Closure Approval  
RAM B. MURTHY

QAR Printed Name Signature Date

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2. Check if Amended

3. Extended Processing  
 No  Yes (if yes, submit  
Extended Processing request )

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DEFICIENCY REPORT/CORRECTIVE ACTION REPORT INITIAL RESPONSE

4. Immediate Actions Necessary to Bring the Process Under Control: (If none, provide justification statement)  
The submittal of all data to TDMS and all supporting records packages to the RPC for the EBS Geoenigneeng Testing Department will be coordinated and controlled through a single person.

Date when process will meet requirements: 05-23-02

5. Immediate Remedial Actions Completed:  
None.

6. Plan for Determining the Extent of Condition:  
1 A survey of records for all data processed by the person who submitted the data sets identified in the original deficiency report will be reviewed for missing Records Road Maps.  
2 A sample of other data submittals by the EBS Geoenigneeng Testing Department will be reviewed for missing Records Road Maps. Sampling will be done in accordance with EPRI NP-7218 (Guideline for the Utilization of Sampling Plans for Commercial-Grade Item Acceptance).

7. Due Date Submittal of Completed Response

7/26/2002

8 Response by: (Responsible Manager) *RET for SF3 BSC OR*

Tom Doering  
Printed Name *Dennis Thomas* Signature *[Signature]* Date *6/21/02*

9. QAR Evaluation:  Accept  Partially Accept  Reject

10. QAM Concurrence.

*Christian Palay*  
Printed Name *Chris Palay* Signature *[Signature]* Date *6-24-02*

*RAM MURPHY*  
Printed Name *Lance Blaylock, Jr* Signature *[Signature]* Date *6/21/02*

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2. Check if Amended   
Check if also Initial Response

3. Extended Processing  
 No  Yes (if yes, submit  
Extended Processing request.)

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**DEFICIENCY REPORT/CORRECTIVE ACTION REPORT COMPLETE RESPONSE**

4. Extent of Condition: (Amended response will be required if all Extent of Condition Investigations are not complete and documented herein)

The records packages for the twelve (12) data sets submitted by the subject individual were reviewed to verify if a Record Road Map (RRM) was completed for each package. Of the twelve (12), two (2) were classified as "Preliminary/Unqualified" and, as such, did not need RRM's. Of the remaining ten (10), all were found to be out-of-compliance with the RRM requirement. The twelve (12) data sets are identified on the continuation page.

A 100% check was done on all of the other DTN submittals processed by the EBS/Geoengineering Testing Department since the requirement was put into effect (18 in total). None were found to be out-of-compliance with respect to the records road map submittal requirements.

5. Impact: (Provide an impact statement relative to waste isolation and safety, and impact to other work, if any)

Four (4) DTNs were reclassified as "Preliminary/Unqualified" (see #4, 5, 7, and 12 on the continuation page). For three (3) of the DTNs there was found to be no impact as a result of this reclassification, and, therefore, RRM's are no longer needed for these three (3) DTNs. For one (1) DTN (MO0109EBSTCQST.011) it was found that another DTN (SN0112T0812301.001) was impacted as a result of the reclassification. Therefore, it was determined that the RRM will be completed in order to reclassify the DTN back to "Q Final." Once the DTN (MO0109EBSTCQST.011) is reclassified back to "Q Final" and the RRM is completed and submitted to records, there will be no residual impact.

With respect to the remaining six (6) DTNs for which RRM's were already developed and submitted to Records, there is no impact to data, waste isolation and safety, or other work.

6. Remedial Actions: (Document all actions necessary to address the results of the Extent of Condition)

Four (4) DTNs were reclassified as "Preliminary/Unqualified" (see #4, 5, 7, and 12 on the continuation page). One of the four (4) (MO0109EBSTCQST.011) will be reclassified back to "Q Final." This will include the completion and submittal of a RRM.

RRM's were generated for the remaining six (6) DTNs classified as "Q Final". These were submitted to records and linked to this deficiency report.

7.  Root Cause (For a significant CAQ, attached results of formal root cause determination prepared in accordance with AP-16 4Q)  
 Apparent Cause

The apparent cause is the misunderstanding of the procedural requirements by one individual.

8. Action to Preclude Recurrence: (Address those actions necessary to prevent the identified cause from recurring)

The individual will be required to read the AP-SIII 3Q procedure and sign a document to verify that this was done. The individual will also be required to attend AP-3.15Q training. It should be noted that AP-SIII.3Q contains the RRM requirement while AP-3.15Q contains the guidance for developing such documentation.

9. Due Date for Completion of Corrective Action:

9/3/02

10. Responsible Manager:

Tom Doering

Printed Name

Signature

Date

11. QAR Evaluation:  Accept  Partially Accept  Reject  
 Re-evaluated for significance

Printed Name

Signature

Date

12. QAM Concurrence

RAM MURTHY

Signature

Date

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**CONDITION ADVERSE TO QUALITY CONTINUATION PAGE**

**CONTINUED FROM BLOCK 4:**

1. EBS THERMAL/HYDRAULIC/CHEMICAL COLUMN TEST NO. 3 CALCULATED HEAT REMOVAL DATA FROM NOVEMBER 17, 2000 TO JANUARY 12, 2001  
DTN: MO0109EBSCT3HD.008 – RRM COMPLETED 7/25/2002
2. AVERAGE EMISSIVITY MEASUREMENTS OF MATERIALS USED AT DIFFERENT TEMPERATURES IN QUARTER SCALE TESTS.  
DTN: MO0109EBSAEQST.009 – RRM COMPLETED 7/25/2002
3. EBS SYSTEM THERMAL/HYDRAULIC/CHEMICAL COLUMN NO. 3 CARBON DIOXIDE MEASUREMENT RESULTS.  
DTN: MO0109EBSCT3CD.010 – RRM COMPLETED 7/25/2002
4. EBS THERMAL CONDUCTIVITY, THERMAL DIFFUSIVITY, AND SPECIFIC HEAT CAPACITY MEASUREMENTS OF MATERIALS USED IN QUARTER SCALE TESTS.  
DTN: MO0109EBSTCQST.011 – Reclassified as Preliminary/Unqualified – Impact to DTN: SN0112T0812301.001 as a result of reclassification. Will be reclassified back to "Q Final". RRM will need to be completed prior to closure of this DR.
5. EBS INPUT AND OUTPUT FILES FOR EBST COLUMN TEST # 1. PREDICTIVE ANALYSIS.  
DTN: MO0110EBSTIOPA.012 – Reclassified as Preliminary/Unqualified - NO RRM REQUIRED
6. PREDICTED TEMPERATURE OF ROCK FROM THERMAL CONDUCTIVITY MEASUREMENTS.  
DTN: ~~MO0201EBSTRTCM.0013~~ - Preliminary/Unqualified - NO RRM REQUIRED  
*[MO0201EBSTRTCM.0013] c.p. 9-19-02*
7. THERMAL CONDUCTIVITY OF REPOSITORY BLOCK SAMPLES AT VARIOUS TEMPERATURES.  
DTN: MO0201EBSTRST.014 – Reclassified as Preliminary/Unqualified - NO RRM REQUIRED
8. HYDRAULIC CONDUCTIVITY OF GROUT SAMPLES.  
DTN: MO0203EBSTHCGS.015 – RRM COMPLETED 7/25/2002
9. COMPACTION AND TRIAXIAL COMPACTION TESTS OF SOIL SAMPLES.  
DTN: MO0203EBSCTCTS.016 – RRM COMPLETED 7/25/2002
10. PHYSICAL AND MECHANICAL PROPERTIES OF GROUT.  
DTN: MO0204EBSPYMPG.017 – RRM COMPLETED 7/25/2002
11. FRAN RIDGE BORROW LAB TESTING.  
DTN: MO0206EBSFRBLT.018 - Preliminary/Unqualified - NO RRM REQUIRED
12. THERMAL PROPERTIES OF GROUT SAMPLES  
DTN: MO0201THERMGRT.000 – Reclassified as Preliminary/Unqualified - NO RRM REQUIRED

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**CONDITION ADVERSE TO QUALITY CONTINUATION PAGE**

**VERIFICATION OF CORRECTIVE ACTIONS FOR DEFICIENCY REPORT (DR) BSC(O)-02-D-123**

**Block 4. Immediate Actions Necessary to Bring Process Under Control:**

For immediate actions to preclude recurrence, the initial response (signed by Responsible Manager on 6/20/02) committed the Engineered Barrier System (EBS) Geoengineering Testing Department to designate a single point of contact to coordinate and control the submittal of the department's data to the Technical Data Management System (TDMS). The department Manager announced the department's single TDMS submittal point of contact via an electronic message to the EBS Geoengineering Testing Department Staff. This immediate action was verified via a review of a hard copy of the electronic mail and confirmed by the Quality Assurance Representative (QAR) that the message was sent to the entire department along with key staff who had previously worked under the Science and Engineering Testing Department. The Science and Engineering Testing Department was reorganized into smaller separate departments. This action was verified as satisfactory.

Additionally, the QAR verified the commitments in the complete response (signed by the Responsible Manager on 8/14/02). The following are the results of the verification.

**Block 6. Remedial Actions:**

Remedial actions were specific to the timing of the submission of data to the TDMS. If the extent of condition identified a DTN for data that was previously submitted as "Q Final", the DTN was reclassified "Preliminary/Unqualified". An impact investigation per AP-2.14Q, "Review of Technical Products and Data," was initiated on the reclassified DTNs to determine if any downstream products (e.g. technical products, data, etc.) were impacted as result of the reclassification. If the extent of condition identified a DTN for data that was in the process of being submitted as "Q Final", the the EBS Geoengineering Testing Department's single point of contact for data submittals would ensure the creation of a records road map per AP-3.15Q, "Managing Technical Product Inputs."

The extent of condition identified four previously submitted "Q Final" DTNs that required reclassification to "Preliminary/Unqualified". These DTNs are listed as follows:

1. MO0109EBSTCQST.011
2. MO0110EBSTCQST.012
3. MO0110EBSTCRST.014
4. MO0201THERMGRT.000

When the impact investigation per AP-2.14Q for the four reclassified DTNs were completed, MO0109EBSTCQST.011 was found to impact SN0112T0812301.001, which uses MO0109EBSTCQST.011 as a source DTN. As this was unacceptable to BSC, a record road map was generated for MO0109EBSTCQST.011. The QAR has verified the reclassification to "Preliminary/Unqualified" of the remaining three DTNs (items 2 though 4 referenced above) by inspecting the on-line entries from the Automated Technical Data Tracking in the TDMS. The QAR has also confirmed completion of the record road map for MO0109EBSTCQST.011 and its submission to the RPC.

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**CONDITION ADVERSE TO QUALITY CONTINUATION PAGE**

In addition to the four previously submitted DTNs, the extent of condition investigation revealed six in process DTNs requiring record road maps. The QAR has verified the completion of the record road maps for the six DTNs listed as follows:

1. MO0109EBSCT3HD.008
2. MO0109EBSAEQST.009
3. MO0109EBSAEQST.010
4. MO0203EBSTHCGS.015
5. MO0203EBSCTCTS.016
6. MO0204EBSPYMPG.017

The QAR has verified that the record road maps for the above referenced DTNs were submitted to the RPC.

There were two DTNs identified in the extent of condition that did not have record road maps; however, these DTNs were originally submitted as "Preliminary/Unqualified", therefore did not require record road maps. The verification of remedial actions is satisfactory.

**Block 7. Action to Preclude Recurrence: (Address those actions necessary to prevent the identified cause from recurring)**

The cause of this deficiency was stated as a misunderstanding of the procedural requirements by one individual and the action to preclude recurrence of this misunderstanding was to train that individual. The individual in question was trained to AP-3.15Q, the governing procedure for record road maps. In addition to that formal classroom training, the individual read AP-SIII.3Q, "*Submittal and Incorporation of Data To The Technical Data Management System*", the procedure requiring the completion of record road maps for final qualified data.

The QAR has verified the individual's attendance of the AP-3.15 classroom training via the Training Server Database. The QAR has also confirmed the individual's completion of the reading assignment of AP-SIII.3Q from reviewing a signed hardcopy of the e-mail sent to the responsible manager. The verification of the action to preclude recurrence of this deficiency was found to be satisfactory.

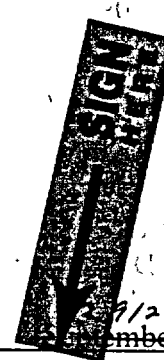
Based on the objective evidence evaluated, the QAR recommends closure of this DR.

Christian Palay

QAR Printed Name

*William J. Glasser for 9/24/02*

QAR Signature



9/24/02  
September 18, 2002

Date