**Department of Energy**
Yucca Mountain Project Office
P. O. Box 98608
Las Vegas, NV 89193-8608

WBS 1.2.9.3
QA

OCT 16 1990

Thomas E. Blejwas
Acting Technical Project Officer
for Yucca Mountain Project
Sandia National Laboratories
P.O. Box 5800
Organization 6310
Albuquerque, NM 87185

CLOSURE OF STANDARD DEFICIENCY REPORT (SDR) 173, REVISION 0, RESULTING FROM YUCCA MOUNTAIN PROJECT OFFICE QUALITY ASSURANCE (QA) AUDIT 88-06 OF SANDIA NATIONAL LABORATORIES

SDR 173, Revision 0, has been closed based on satisfactory verification of completed corrective actions. A copy of the SDR is enclosed for your files.

If you have any questions, please contact Catherine E. Hampton at (702) 794-7973 or FTS 544-7973 or Richard L. Maudlin at (702) 794-7290 or FTS 544-7290 of the Yucca Mountain Project QA staff.

N Ubeture for
Donald G. Horton, Director
Quality Assurance
Yucca Mountain Project Office

QA:CEH-215

Enclosure:
SDR 173, Revision 0

cc w/encl: 1/H3
K. R. Hooks, NRC, Washington, DC
S. W. Zimmerman, NWPO, Carson City, NV
R. R. Richards, SNL, 6319, Albuquerque, NM

cc w/o encl:
J. H. Hines, OQD, AL
J. W. Gilray, NRC, Las Vegas, NV
R. L. Maudlin, MACTEC, Las Vegas, NV
N. J. Brogan, SAIC, Las Vegas, NV, 517/T-08

9011090087 901016
PDR WASTE
WM-11 PDC
YMP-5

ADD: B. Belke

102.7
WM-11
NH03

# WMPO STANDARD DEFICIENCY REPORT

N-QA-038
3/87

OCR

**Completed by Originating QA Organization**

1 Date 8/3/88 | 2 Severity Level ☐ 1 ☒ 2 ☐ 3 | Page 1 of 3

| 3 Discovered During | 3a Identified By | 3b Branch Chief Concurrence Date | 4 SDR No. |
|---|---|---|---|
| WMPO Audit 88-06 | W. Sublette | N/A | 173 Rev. 0 |

| 5 Organization | 6 Person(s) Contacted | 7 Response Due Date is 20 Working Days from Date of Transmittal |
|---|---|---|
| SNL | F. Nimick & R. Price | |

8 Requirement (Audit Checklist Reference, if Applicable)
SNL QAP 2-3, "Quality Assurance Level Assignment and Work Plans," Rev. A, Para. 4.5.1, states in part "Each technical task or PCA shall be given a QA level assignment of either QA Level I, QA Level II, or QA Level III. If an

9 Deficiency
A. Contrary to the above, SNL has performed QA Level III scoping work in activities identified in the Laboratory Properties (WBS 1.2.4.2.1.3.S) Modified Work Plan as QA Level I.

10 Recommended Action(s): ☒ Remedial ☒ Investigative ☒ Corrective

1. Initiate appropriate actions to have the draft Modified Work Plan approved and issued.

**Aprvl.**

| 11 QAE/Lead Auditor Date | 12 Branch Manager Date | 13 Project Quality Mgr. Date |
|---|---|---|
| L. Gerard Hegney 8-11-88 | AUG 11 1988 | James Blaylock 8/15/88 |

**Completed by Organization in Block 5**

14 Remedial/Investigative Action(s)

15 Effective Date 11/15/88

Deficiency A: The actions we have taken essentially correspond to the suggested actions [nos. 1 and 2 in Section 10, Recommended Action(s)].
Remedial: The original draft of the 1986 Modified Work Plan for Laboratory Properties (WBS 124213) included the activities in question (A.6, A.7, A.8 and A.9) (cont'd.)

16 Cause of the Condition & Corrective Action to Prevent Recurrence

17 Effective Date N/A

The cause of this deficiency was poor coordination and lack of understanding concerning QA Level assignment between YMPO and SNL. Those misunderstandings no longer exist; no additional corrective action is needed.

18 Signature/Date
Thomas Hunter 10/8/88

**Comp. by Orig. QA Org.**

| | | QAE/Lead Auditor/Date | Branch Manager/Date |
|---|---|---|---|
| 19 Response | ☒ Accept ☐ Amended ☐ Reject ☐ Response | L. Hegney 11-2-88 | 4 Nov 88 |
| 20 Amended Response | ☐ Accept ☐ Reject | N/A | N/A |
| 21 Verification | ☒ Satisfactory ☐ Unsatisfactory | 10/09/90 | 10-9-90 |

22 Remarks Extension Request, dtd 10/26/89 - Price to Hunter
accept Extension, YMP:JB-685, dtd 11/8/89
RESPONSE ACCEPTANCE LETTER - YMP:WBM-722 dtd. 11-23-88
SEE LETTER YMP:RBC-2196 FOR UNACCEPTABLE VERIFICATION DTD. 3-1-90
Response 3/12/90 - Print Hunter - acceptance 3/30/90 - YMP:CEH-2552

| 23 QA CLOSURE | QAE/Lead Auditor/Date | Branch Manager/Date | PQM/Date |
|---|---|---|---|
| | 10/04/90 | N/A | 10490 |

ENCLOSURE

8 Requirement (continued)

item or task is assigned a QA level without further subdivision, all of its subparts will have the same QA level unless an exemption is specifically documented and justified as exempt." (Refer to audit checklist Item No. T-122.)

9 Deficiency (continued)

The QA Level III scoping work was performed in the following activities:

1. A.6 - Mechanical properties of welded, devitrified Topopah Spring Member at high temperature and/or low strain rates.

2. A.7 - Anisotropy of mechanical properties of welded, devitrified Topopah Spring Member.

3. A.8 - Tensile strength of welded, devitrified Topopah Spring Member.

4. A.9 - Mechanical properties of fractures in welded, devitrified Topopah Spring Member.

Note: It was observed during the audit that SNL has a draft revision to the Laboratory Properties Modified Work Plan which does contain QA Level III Quality Assurance Level Assignment Sheets for the scoping work in the above activities.

B) Contrary to the above, Design Investigation Memo (DIM) NO. 37 is identified as QA level III. However, the Modified Work Plan "Preclosure Safety Analysis" Revision B which governs the work in the DIM is currently at QA level II.

10 Recommended Actions (continued)

2. Investigate to determine if the performance of scoping work at QA Level III has any adverse impact on the QA Level I work activities (i.e., data collection).

3. Revise DIM 37 to indicate the appropriate QA level.

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14 Remedial/Investigative Action(s) (cont'd.)

as QA Level 3; however, during the WMPO review of the Work Plan the QA Level of all activities in that plan were reviewed to 1 (at WMPO's verbal request). This change was made with the implicit assumption that QA Level 3 scoping work could be conducted under an activity with an overall QA Level of 1.

The Work Plan that is presently in the review process (and is expected to be approved by 10/15/88) includes subtasks for the scoping work in question at a QA Level of 3.

14 Remedial/Investigative Action(s) (cont'd.)

Investigative: Activities A.6, A.7, A.8, and A.9 have been (and are being) performed at QA Level 3; however, there have been no adverse effects on the proposed QA Level 1 work. On the contrary, these scoping activities were planned in order to prepare for the QA Level 1 testing by developing appropriate procedures and techniques.

Deficiency B: The Modified Work Plan (Preclosure Safety Analysis) covering DIM 37 has defined this work as QA Level 3; however, Al Stevens has stated that this is a mistake and has defined the following activities:

Remedial: DIM 37 will be revised to reflect a QA Level of 2 (Al Stevens, 11/15/88).

Investigative: There have been no adverse effects, because all of the DIM 37 activities performed to date have been found to meet the criteria for a QA Level 2.

22 Remarks

Extension Request, Hunter to Horton, 5-4-90 - Reject, YMP:CEH-3613, 6-12-90

REVIEWED GRADING REPORT FOR WP 1232713 A+B (LABORATORY DETERMINATION OF THE MECHANICAL PROPERTIES OF INTACT ROCK). THIS VERIFICATION WAS DONE PER THE RELEASE PROVIDED BY: TOM HUNTER TO D. HORTON DATED 5/4/90. QRB ACCEPTANCE OF WA WAS DOCUMENTED 08/28/90 VIA QA GRADING REPORT.

10/04/90

Sandia National Laboratories
Albuquerque, New Mexico 87185

March 12, 1990

WBS: 1293
QA

QA RECEIVED
MAR 15 1990

Donald G. Horton, Director
Quality Assurance Division
Yucca Mountain Project Office
U.S. Department of Energy
Nevada Operations Office
P.O. Box 98518
Las Vegas, NV 89193-8518

REQUEST FOR EXTENSION OF DUE DATE - SDR 173

Dear Mr. Horton:

I am requesting an additional extension in the due date for completion of our actions in response to SDR 173. Please change the due date to May 1, 1990.

The deficiencies in SDR 173 pertain to the lack of approved QA Level III Quality Assurance Level Assignment Sheets for the performance of QA Level III scoping work under WBS 124213. Since the original date of the SDR, this WBS element has been divided into four elements (1232711, 1232712, 1232713, and 1232714). The Activities cited in the SDR fall under the latter two WBS elements. The work plan and appropriate QALAs for WBS 1232714 were submitted to the Project Office in late December 1989. The documents for WBS 1232713 are in our internal review process and will be submitted for Project Office approval immediately after the new procedures for grading (AP 5.28Q) and determining the importance with respect to safety and waste isolation (AP 6.17Q) become effective. I hope that you will accept this as rationale for the requested adjustment in the SDR due date.

If you have any questions, please contact either Bob Richards (FTS 844-1280), Les Shephard (844-3604), or me (844-8980).

Sincerely,

Ronald H. Price

Ronald H. Price
Geoscience Assessment and Validation
Division 6315

Copy to:

| | |
|---|---|
| YMPO | J. Blaylock |
| SAIC | N. J. Brogan |
| SAIC | J. Heaney |
| 6310 | T. O. Hunter |
| 6310 | R. R. Richards |
| 6310 | R. M. Baehr |
| 6315 | L. E. Shephard |
| 6315 | F. B. Nimick |
| 6315 | R. H. Price |
| 6310 | 94/1293/VER/1.0/YMPO-88/Q1 |
| 6310 | YMP CRF |
| 6310 | Action Item 1171 |

AMENDED RESPONSE FOR YMPO SDR #173

RECOMMENDATION: Based on the current AP(Q) changes to grading packages and the deletion of QA Levels, it is recommended that this SDR be closed with the amended response given below.

JUSTIFICATION: Other than the issuance of Work Plan #1232713, all corrective actions are complete for this SDR. Issuance of Work Plan #1232713 and its grading package are in-process and are being tracked by SNL CAR #89-1.

14. REMEDIAL/INVESTIGATIVE ACTION(S): Response to be amended as follows:

Deficiency A - Remedial: One of two Work Plans is approved (WP 1232714) and has been submitted to YMPO for concurrence. The other Work Plan (1232713) is being processed, reviews are partially completed and the grading package is being redone to comply with AP-5.28Q. SNL CAR #89-1 is tracking the review and approval of all FY90 Work Plans (including WP 1232713) and their respective Grading Packages; and subsequent issuance to YMPO for concurrence.

Attachments:

Approved cover sheet for Work Plan WP 1232714,
Unapproved (in-process) cover sheet for Work Plan WP 1232713, and
Corrective Action Report #89-1.

Ltr dtd 5/4/90
Hunter to Hanton