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

JAN 17 1995

L. Dale Foust
Technical Project Officer
for Yucca Mountain
Site Characterization Project
TRW Environmental Safety Systems, Inc.
Bank of America Center, Suite P-110
101 Convention Center Drive
Las Vegas, NV 89109

EVALUATION OF AMENDED RESPONSES TO CORRECTIVE ACTION REQUEST (CAR) YM-94-065 AND CAR YM-94-072 RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION'S (YMQAD) AUDIT YMP-94-01 OF THE CIVILIAN RADIOACTIVE WASTE MANAGEMENT SYSTEM MANAGEMENT AND OPERATING CONTRACTOR (SCPB: N/A)

The YMQAD staff has evaluated the amended responses to CARs YM-94-065 and YM-94-072. The responses have been determined to be unsatisfactory because of reasons stated in the enclosed CARs.

Amended responses are required to be submitted to this office within ten working days of the date of this letter. Send the original of your responses to Deborah Sult, YMQAD/QATSS, 101 Convention Center Drive, Suite 640, Las Vegas, Nevada 89109. If an extension to the due date is necessary, it must be requested in writing, with appropriate justification, prior to that date.

If you have any questions, please contact either Robert B. Constable at 794-7945 or Richard E. Powe at 794-7749.

R. E. Spence

Richard E. Spence, Director
Yucca Mountain Quality Assurance Division

YMQAD:RBC-1668

Enclosures:
CARs YM-94-065 and
YM-94-072

NH03
WM-11
102.7

YMP-5

9501250444 950117
PDR WASTE
WM-11 PDR

cc w/encls:
T. A. Wood, HQ (RW-14) FORS
J. G. Sprague, NRC, Washington, DC
S. W. Zimmerman, NWPO, Carson City, NV
R. L. Robertson, M&O/TRW, Vienna, VA
R. P. Ruth, M&O/TRW, Las Vegas, NV
Richard Jiu, M&O/Duke, Las Vegas, NV
D. G. Horton, OQA (RW-3) NV
R. M. Nelson, Jr., YMSCO, NV

cc w/o encls:
W. L. Belke, NRC, Las Vegas, NV
D. G. Sult, YMQAD/QATSS, Las Vegas, NV

246126

Read newsletter 4/7/95 THIS IS A RED STAMP

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

8 CAR NO.: YM-94-065
PAGE: 1 OF 2
QA

CORRECTIVE ACTION REQUEST

1 Controlling Document
QAP-3-8, R4, QAP-3-9, R4, QAP-3-10, R4

2 Related Report No.
YMP-94-01

3 Responsible Organization
M&O

4 Discussed With
J. Naff/B. Saunders/A. Segrest/F. A'rth

5 Requirement:

1) QAP-3-8, Paragraph 5.2 requires that specifications shall be checked for completeness and technical adequacy using the topics in Attachment I. QAP-3-9, Paragraph 5.24 requires that design analyses be checked to ensure the necessary detail in accordance with the Design Analysis Outline
(Continued on next page)

6 Adverse Condition:

1) No objective evidence exists for the discipline (structural) checks for Package 2C in the areas of design analysis, specifications and drawings for the identified items. Additionally, it was found that the M&O intends to utilize the relevant Review Summaries as the sole source of documentation to substantiate and validate the corresponding checks/reviews.

2) The checker for the Steel Set and Lagging Design Analysis did not receive a complete design analysis for review. The analysis was delivered to the checker over the period of one week in "pieces" and in various stages of completion. Additionally, the checker informed the audit team that they did not ensure that the design output was reasonable as compared to the inputs and the referenced Design Analysis Outline was not utilized. This checking process was completed 4/1/94.

3) For both the specifications and drawings concerning the structural discipline, it was found that the design analyses had not been completed and/or even checked. The checking process for all documents appears to have taken place at about the same time, with little or no controls applied to the procedure mandated requirements.
(Continued on next page)

9 Does a Significant Condition Adverse to Quality exist? Yes X No ___
If Yes, Check One: [X] A [X] B [ ] C [ ] D [ ] E

10 Does a stop work condition exist?
Yes ___ No X ; If Yes - Attach copy of SWO
If Yes, Check One: [ ] A [ ] B [ ] C

8 Response Due Date:
20 Working days From Issuance

11 Required Actions: [X] Remedial [X] Extent of Deficiency [X] Preclude Recurrence [X] Root Cause Determination

12 Recommended Actions:

1) Review other areas of the 2C Package and assure that checks/reviews were consistent.

2) Assure that the checking process for any ongoing design activities is conducted correctly.

7 Initiator
Richard G. Peck
8-3-94

14 Issuance Approved by:
QADD RC Spence Date 8/5/94

15 Response Accepted
QAR R G Peck Date 8/30/94

16 Response Accepted
QADD [illegible] for Date 9-1-94

17 Amended Response Accepted
QAR Date

18 Amended Response Accepted
QADD Date

19 Corrective Actions Verified
QAR Date

20 Closure Approved by:
QADD Date

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

8 CAR NO.: YM-94-055
PAGE: 2 OF 2
QA

CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)

5 Requirements (continued)

(Attachment 1) and that the design output is reasonable compared to the design input. QAP-3-10, Paragraph 5.2.4 requires that drawings are checked for completeness and technical adequacy utilizing Attachment 1 as appropriate. Additional requirements are detailed in Paragraph 5.2.4b through 5.2.4f to ensure that the relevant design parameters have been incorporated into the drawing, i.e., design inputs, assumptions were adequately described, the appropriate design method was used, and design input and verification requirements for interfacing organizations were specified.

2) QAP-3-9, Paragraph 5.2 requires that the checker shall check the design analysis for completeness and technical adequacy. Also, the checker must utilize the Design Analysis Outline (Attachment 1) to ensure the design analysis has been developed to the necessary detail. The checker must also ensure that the design output is reasonable as compared to the design input.

3) QAP-3-8, Paragraph 5.2.4 requires that the checker use Attachment 1 of the procedure to assure completeness and technical adequacy. Attachment 1 details checkpoints that are directly associated with the corresponding design analysis. QAP-3-10, Paragraph 5.2.4 details steps that require information taken directly from the associated design analysis.

4) QAP-3-9, Paragraph 5.24 requires that the checker document all comments clearly on the check copy.

6 Adverse Condition (continued)

4) The check copy of the electrical cable tray support design analysis was not available for review. The audit team was informed that it was not considered a QA record by the M&O and could therefore be discarded. The audit team is concerned that any OCRWM related documentation that could substantiate the design process, would be considered as disposable.

13 Recommended Action(s) (continued)

3) Re-evaluate procedural requirements detailing how reviews and checks are documented.

RESPONSE TO CAR NO. YM-94-065

ADVERSE CONDITION:

A. Remedial Action: All Items

1. All 2C design products containing errors (or where objective evidence that structural checks were performed does not exist) will be revised and will be rechecked in accordance with current QAPs. Interdiscipline reviews will be conducted as appropriate in accordance with QAP requirements. All Q-related drawings and specifications will be rechecked for errors. A review topic checklist will be filled out for each Q-related product rechecked. These checklists will be objective evidence that the checking process was followed. These checklists will not be QA records.

2. The MGDS Development Manager will issue a memo instructing MGDS that check copies of documents are Federal records and cannot be discarded. The records that were misplaced were for non-Q (electrical) design products.

3. Review with other M&O offices to determine if problem exits will be completed by 9/30/94.

10/29 Alden - 10/31

Item 1 Responsible Individual: Robert Saunders
Date of Completion: 9/30/94 (Anticipated Release of 2C)

Item 2 & 3 Responsible Individual: Alden Segrest
Date of Completion: 9/30/94

Investigation: All Items

1. Preliminary copies of Design Analysis (structural) were used by checkers to verify Design Inputs to Drawings and Specifications during the design process. The Design Analysis Cover Sheet was not signed by the Department Manager and therefore was not complete.

2. Six non-Q check copies of 2C Design Analysis (structural) were misplaced and assumed to be discarded. The note in Paragraph 5.2 of the current QAP's indicate that the check copy is not a QA record but will be used during the final check of the document. Although the check copy is not a QA record, it is a Federal record and should not be discarded.

3. Investigation will be made to ensure no other records have been discarded. Early release documents will have new check copies.

4. Item 2 occurred when the design inputs were being developed parallel and were not completed prior to the drawings and specifications being developed.

Root Cause: All Items

1. The Design of the package was started in accordance with Revision 3 of the QAP's and completed in accordance with Revision 4 of the QAP's. In addition, NLP-3-14, R00, P03 was superseded by the contents of QAP-3-10 Revision 4, and QAP-3-8 Revision 4. Change in procedures caused confusion as to which revision was the governing document for Package 2C. The procedures were not followed and documents clearly identified when preliminary data was used as input. Design inputs were being developed parallel and were not completed prior to the drawings and specifications being developed.

2. There are no procedural guidelines for handling Federal records.

3. The checking process (and interdiscipline review) in the current Design Control Process precedes the 90% Design Review. Many discrepancies being identified indicate they are a result of incorporating 90% design review comments.

4. The actual checking process is not well documented.

5. Direction was not provided to designers for the storage of all records.

6. Personnel did not always follow checking and interdiscipline review requirements contained within procedures. The checking process described by the checklists (Review Topics) contained in QAP-3-8 and QAP-3-10 are not very clear to those who use them.

Action to Preclude Recurrence: All Items

1. A training session covering checking and interdiscipline reviews will be provided for all design personnel.

2. MGDS will request guidelines for the submittal of Federal records from the Records Management Organization. Appropriate procedures will be revised to incorporate instructions on how to process Federal records.

3. The M&O will review the current design control process, placing emphasis on improving the discipline checking and inter-discipline review steps. The design control process will be revised to move the discipline checking and interdiscipline reviews until after the 90% design review. The revised design control process will require that design inputs (analyses and the DIE) be

approved prior to the initiation of checking and interdiscipline reviews taking place. All designers will be trained to the revised process upon approval of necessary procedure revisions.

4. A review team will be established to review the checking process. Consideration will be made to document the actual checking process more formally by the use of checklists. MGDS management will be provided recommendations. The checking process will be revised accordingly. All designers will be trained to the revised checking process upon approval of necessary procedure revisions.

5. Direction has been provided that instructs the designers to submit all records to Engineering Document Control. See correspondence LV.ESSB.GH.7/94-691.

Responsible Individual: Alden Segrest
Date of Completion: 1/31/95

8/17/94

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

8. CAR NO. YM-94-065
PAGE 1 OF 1
QA

CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)

Partial Verification of CAR YM-94-065

1. Design products associated with early release (Phase I) were reviewed to verify that the check and interdiscipline reviews were accomplished and adequate. Design products reviewed are listed below:

   Specification BAB000000-01717-6300-01014. Reviewed the following for this specification:
   - Specification Review Summary
   - Specification Check Copy
   - Specification Inputs List Check Copy
   - Specifications Checklist
   - Specification In-Progress Copy

   Note: Interdiscipline review not required per Specification Review Copy.

   Analysis BABEAD000-01717-0200-00004, Requirements Allocation Analysis for North Ramp Excavation. Reviewed the following for this analysis:
   - Design Analysis Review Summary
   - Analysis Check Copy
   - Interdiscipline Review Copy
   - Design Analysis Checklist
   - Analysis In-Progress Copy

   Analysis BABEAD000-01717-0200-00003, North Ramp Layout Calculation. Reviewed the following for this analysis:
   - Design Analysis Review Summary
   - Analysis Check Copy
   - Interdiscipline Review Copy
   - Design Analysis Checklist
   - Analysis In-Progress Copy

   Drawing BABEAD000-01717-2100-40110. Reviewed the following for this drawing:
   - Drawing Review Summary
   - Drawing Check Copy
   - Interdiscipline Review Copy
   - Drawing Checklist
   - Drawing In-Progress Copy

2. Reviewed CRWMS M&O Interoffice Correspondence, A. M. Segrest to MGDS Development Staff, dated 9/14/94, Subject : Retention of Design Document Check Copies. Correspondence addresses that check copies of design documents might not be QA records, however, they must be kept and submitted to the LRC as Federal Records.

Stephen R. Dana, QAR — Date 9/21/94

Interoffice Correspondence
Civilian Radioactive Waste Management System
Management & Operating Contractor

TRW Environmental
Safety Systems Inc.

WBS:1.2.6
QA: N/A

Subject:
Product review for CAR's 94-QN-C-049, 94-QN-C-050, and YM-94-065 (SCP:N/A)

Date:
December 7, 1994
LV.ESSB.RMS.12/94-869

From: R. M. Stambaugh

To:
R. Saunders, TES3/423

cc: w/attach
G. Heaney, TES3/423
P. Jones, TES3/423
LVRPC

w/o attach
M. DeLeon, TES3/423
J. Naaf, TES3/423
R. Saunders, TES3/423

Location/Phone:
TES3/530
(702) 794-7001

A review was performed on "Issued For Construction" 2C package Q products to ensure that discipline and inter-discipline review comments were resolved. In summary, the following observations were made based on this review:

1) In most cases, discipline and interdiscipline review comments were found to be incorporated or adequately resolved.

2) A few isolated cases were identified where comment resolution was not clearly indicated. This was generally due to the product changing so substantially that it was near impossible to verify comment-by-comment resolution. Comment resolution in these cases were dispositioned on the product for clarity.

3) All other unresolved comments identified during the review were incorporated on the final product revision.

4) All Q "Issued For Construction" products were found to be complete; no records had been discarded or lost.

An investigation was conducted to ensure that the deficiencies identified in the subject CARs did not exist in other Q products prepared or revised by the M&O. The 1A package was the only other to contain Q products. This consisted of the following:

YMP-025-1-MING-MG-120	Rev 1 (*)
YMP-025-1-MING-MG-121	Rev 3
YMP-025-1-MING-MG-122	Rev 2 (*)
YMP-025-1-MING-MG-123	Rev 4
YMP-025-1-MING-MG-125	Rev 3
YMP-025-1-MING-MG-128	Rev 3
YMP-025-1-MING-MG-130	Rev 1 (*)
YMP-025-1-MING-MG-142	Rev 3 (*)
YMP-025-1-MING-MG-143	Rev 3
YMP-025-1-MING-MG-151	Rev 1 (*)
YMP-025-1-MING-MG-152	Rev 1 (*)
YMP-025-1-MING-MG-153	Rev 1 (*)
YMP-025-1-MING-MG-154	Rev 1 (*)
YMP-025-1-MING-MG-160	Rev 0
YMP-025-1-MING-MG-165	Rev 0

All discipline review comments were found to be adequately incorporated or resolved. The drawings with asterisks (*) above did not have interdiscipline (ID) reviews. All other ID review comments were resolved adequately.

If you have any questions or concerns call me at 4-7001.

RMS:cam

Comment Resolution Review

Document Identifier	Comments Resolved Adequately	Reqd Clarification for Comment Resolution	Reqd Product Revision to Incorporate Unresolved Comments	Remarks
Analyses				
BABE00000-01717-0200-00004 (Q)			X	
BABEAB000-01717-0200-00002 (Q)			X	
BABEAB000-01717-0200-00003 (Q)			X	
BABEAB000-01717-0200-00004 (Q)	X			
BABEAB000-01717-0200-00005 (Q)	X			
BABEAB000-01717-0200-00006 (Q)	X			
BABEAB000-01717-0200-00009 (Q)			X	
BABEAB000-01717-0200-00010 (Q)		X		
BABEAD000-01717-0200-00003 (Q)	X			
Specifications				
BAB000000-01717-6300-01014	X			See letter #769
BAB000000-01717-6300-01400 (Q)		X		See letter #141
BAB000000-01717-6300-01501 (Q)		X		
BAB000000-01717-6300-02165 (Q)			X	
BABEAB000-01717-6300-02341 (Q)			X	
BABEAB000-01717-6300-03362 (Q)	X			
BABEAB000-01717-6300-03363 (Q)	X			See Ltr #774
BABEAB000-01717-6300-03601 (Q)	— On Hold —			
BABEAD000-01717-6300-02313 (Q)	X			

Comment Resolution Review

Document Identifier	Comments Resolved Adequately	Reqd Clarification for Comment Resolution	Reqd Product Revision to Incorporate Unresolved Comments	Remarks
Drawings				
BABEAD000-01717-2100-40111 (Q)	X			
BABEAD000-01717-2100-40112 (Q)	X			
BABEAD000-01717-2100-40113 (Q)	X			
BABEAD000-01717-2100-40114 (Q)	X			
BABEAD000-01717-2100-40115 (Q)	X			
BABEAD000-01717-2100-40116 (Q)	X			
BABEAD000-01717-2100-40121 (Q)	X			
BABEAD000-01717-2100-40122 (Q)	X			
BABEAD000-01717-2100-40123 (Q)	X			
BABEAD000-01717-2100-40124 (Q)	X			
BABEAD000-01717-2100-40126 (Q)	X			
BABEAD000-01717-2100-40127 (Q)	X			
BABEAD000-01717-2100-40128 (Q)	X			
BABEAD000-01717-2100-40129 (Q)	X			
BABEAB000-01717-2100-40151 (Q)	X			
BABEAB000-01717-2100-40152 (Q)	X			
BABEAB000-01717-2100-40153 (Q)	X			
BABEAB000-01717-2100-40154 (Q)	X			
BABEAB000-01717-2100-40155 (Q)	X			
BABEAB000-01717-2100-40156 (Q)	X			
BABEAB000-01717-2100-40157 (Q)		X		
BABEAB000-01717-2100-40161 (Q)			X	See Ltr #768
BABEAB000-01717-2100-40162 (Q)		X		
BABEAB000-01717-2100-40163 (Q)	X			

Comment Resolution Review

Document Identifier	Comments Resolved Adequately	Reqd Clarification for Comment Resolution	Reqd Product Revision to Incorporate Unresolved Comments	Remarks
BABEAB000-01717-2100-41101 (Q)		X		
BABEAB000-01717-2100-41102 (Q)		X		
BABEAB000-01717-2100-41103 (Q)		X		
BABEAC000-01717-2100-41111 (Q)	X			
BABEAC000-01717-2100-41121 (Q)	X			
BABEAC000-01717-2100-41130 (Q)	X			
BABEAD000-01717-2100-40100 (Q)	X			
BABEAD000-01717-2100-40104 (Q)	X			
BABEAD000-01717-2100-40110 (Q)	X			
BABEAD000-01717-2100-40120 (Q)	X			

Interoffice Correspondence
Civilian Radioactive Waste Management System
Management & Operating Contractor

TRW

TRW Environmental Safety Systems Inc.

WBS: 1.2.6
QA: Q/A

Subject:
Specification BAB000000-01717-6300-01400 Rev. 02 Review History

Date:
September 16, 1994
LV.ESSB.RS.9/94-141

From:
Roberta Stambaugh
RStambaugh

To:
File

cc:
G. Heaney, TES3/423
J. M. Taipale, TES3/423
LVLRC

Location/Phone:
TES3/530R
(702) 794-7001

This IOC is to document the review history of the subject specification as part of corrective actions to CAR #YM-94-065.

Unlike other Package 2C documents, BAB000000-01717-6300-01400 Rev. 02 was not yet approved when the 2C package was withdrawn in August 1994. Because other 2C documents were approved and forwarded for baselining, it was necessary for them to go through the standard revision cycle. However, for the 01400 specification, various changes were made during the revision process that required sending it back through interdisciplinary (ID) review (i.e., DIE changes, impact from 2C package documents, etc.).

Therefore, that is the reason for the generation of four (4) separate Specification Review Summary records (dated between April to August 1994 - two of which were located in EDC).

Checker review copies for the three oldest reviews could not be located for verification of incorporation of comments. However, evidence that the checker was satisfied with comment incorporation is shown on the Specification Review Summary records. The "Check Copy" was retained for the latest review (8/26/94) and all comments were verified as being incorporated.

The ID review copies for reviews completed in April, May-June, and August were retained and comments verified to be incorporated. The ID review copy for reviews conducted July 7, 1994 could not be located. However, evidence that comments were incorporated to the reviewers' satisfaction is shown on the Specification Review Summary record.

RS:sas

Interoffice Correspondence
Civilian Radioactive Waste Management System
Management & Operating Contractor

TRW Environmental
Safety Systems Inc.

WBS: 1.2.6
QA: QA

Subject:
Specification Checking Process
(SCP:N/A)

Date:
September 15, 1994
LV.ESSB.RS.9/94-769

From:
Roberta Stambaugh
RStambaugh

To:
Distribution

cc:
See Below
LVLRC

Location/Phone:
TES3/423
(702) 794-5389

As part of the response to CAR # YM-94-065, an investigation was conducted to determine whether all checker and interdisciplinary reviewers comments were adequately incorporated into Specification BAB000000-01717-6300-01014 Rev 00. It was determined that no check was performed as required prior to interdisciplinary (ID) review. However, all ID reviewer comments were incorporated in Rev. 00. Since Rev. 00 was never issued, no adverse impact exists because a check was performed while preparing for Rev. 01 issuance.

Distribution:

G. Heaney, TES3/423
J. L. Naaf, TES3/423
D. J. Rogers, TES3/423
R. S. Saunders, TES3/423
J. M. Taipale, TES3/423

RS:cam

Interoffice Correspondence
Civilian Radioactive Waste Management System
Management & Operating Contractor

TRW Environmental
Safety Systems Inc.

WBS: 1.2.6
QA: N/A

Subject:
Specification BABE0000-01717-6300-03363
(SCP:N/A)

Date:
September 22, 1994
LV.ESSB.RMS.9/94-774

From:
R. M. Stambaugh
RMStambaugh

To:
File

cc:
J. W. Keifer, TES3/423
J. L. Naaf, TES3/423
D. J. Rogers, TES3/423
R. S. Saunders, TES3/423
R. M. Stambaugh, TES3/423
LVLRC

Location/Phone:
TES3/530R
(702) 794-7001

As part of corrective action to CAR # YM-94-065, a review was performed to verify incorporation or resolution of reviewer comments. The following was identified during the review.

The specification revision 0A (found in EDC) was the interdisciplinary (ID) review copy. Normally the "check print" copy of a specification is labelled 0A and per conversation with the originator, the "check print" copy was indeed marked 0A. However, the "check print" copy could not be located to verify resolution of checker comments. Per the originator, the ID review copy was not marked up to 0B.

All ID reviewer comments were verified to have been incorporated/resolved in the 0C labelled "check print". Likewise, all 0C reviewer comments were resolved prior to issuance of revision 00.

RMS:cam

Interoffice Correspondence
Civilian Radioactive Waste Management System
Management & Operating Contractor

TRW Environmental
Safety Systems Inc.

WBS: 1.2.6
QA: QA

Subject:
Drawing Design Inputs
Number Error
(SCP:N/A)

Date:
September 15, 1994
LV.ESSB.RS.9/94-768

From:
Roberta Stambaugh
RStambaugh

To:
Distribution

cc:
See Below
LVLRC

Location/Phone:
TES3/423
(702) 794-7001

As part of response to CAR # YM-94-065, corrective actions were to evaluate all back-up review documents (e.g., Check Copy, Interdiscipline Review Copy) to verify appropriate incorporation or resolution of reviewer comments.

Drawings marked as BABEAD000-01717-2100-40161-0A, 0B (13-APR-1994 07:34), 0B (13-APR-1994 10:48), 0D, and 00 were reviewed. On drawing revision 0B (CAD timed @ 7:34), the checker identified an error in the Design Input section. Specifically, TS North Ramp Rock Mass Classification BABEAB000-01717-0200-00004 should have been - 00005. The error was carried through to revision 00. This error will be corrected when revising the subject drawing to revision 01.

Distribution:

G. Heaney, TES3/423
J. W. Keifer, TES3/423
J. L. Naaf, TES3/423
D. J. Rogers, TES3/423
R. S. Saunders, TES3/423
R. A. Skorseth, TES3/423

RS:cam

Interoffice Correspondence
Civilian Radioactive Waste Management System
Management & Operating Contractor

TRW Environmental
Safety Systems Inc.

WBS:1.2.6
QA: N/A

Subject:
Completion of 2C Package Commitments
(SCP:N/A)

Date:
December 14, 1994
LV.ESSB.RMS.12/94-877

From:
R. M. Stambaugh
RMStambaugh

To:
See Below

cc:
G. Heaney, TES3/423
J. L. Naaf, TES3/423
R. M. Stambaugh, TES3/423
LVRPC

Location/Phone:
TES3/530
(702) 794-7001

In attached commitments (and support documentation if available) are being forwarded to you for completion of required actions. These tasks are being tracked by scheduled completion date. Please review these and advise me when tasks have been completed or if changes to the information are needed. We have tried to be thorough in our search of past commitments, but if you know of any additional ones - please let me know so that it can be properly tracked.

Attachment
(1) Commitments
(2) Support Documentation

Distribution:

L. R. Morrison, TES3/423
J. H. Pye, TES3/423
D. J. Rogers, TES3/423
W. J. Reed, TES3/423
R. S. Saunders, TES3/423
M. Taylor, TES3/423
J. M. Taipale, TES3/423

RMS:cam

12/20/94 LV.ESSB.CU.12/94-899

Assigned To	Task	Status	Estimated Completion
Rogers/Kennedy	Revise drawings 40120, 40104, 40100, & 40110 to incorporate QATSS QAP 6.2 comments from Package 2C (early release - see also QA portion of package 2C (2nd release)	Working	3/95
Reed	QAP 6.2 review comments by B. Verna on Package 2C 3a p. 8 of 8 to revise drawings 43040 & 43050	Will prepare FCR	2/95
Rogers/Jurani	Revise drawing BABFAD000-01717-2100-45601 to reflect matrix equivalent for note 2, delete note 6 and add ref. to note 1 "for package 2C excavation only."		6/95
Rogers/Jurani	Revising drug BABFAD000-01717-2100-45607 to reflect only one detailed elbow.		6/95
Rogers/Kennedy	Will add note to drawing 40116 on next revision.		3/95
Morrison	ESFDR Rev 1, App. B update. BFD will be revised to match appendix B after approval of ESFDR Rev. 1 Per package 1C revision comment 102.		1/95
Morrison	BFD requirement 7.6.1.8.D.5 to have two or more fire detection devices activate before alarm system activates will be re-evaluated when this BFD section is finalized Comment 2C 107.		1/95

Reed	Comment #2C 128 by the end of August 94 the new load flow data and list will be completed.		8/95
Taylor	QA affecting portion of package 2C (4th release) revise per comments #3, 4, 5, & 7 by W. Hunt; comments #6, 10, 11, 15 & 16 by M. Gomez; and comments #7, 13, 14, 15, 16, 18 & 23 by John Peters.		3/95
Pye	QA affecting portion of package 2C (4th release) revise per comment #28 by J. Peters.		1/95
Rogers/Jurani	QAP 6.2 review comments by B. Verna on package 2C3C to revise drawing 45608		6/95
Taylor/Becerra	QAP 6.2 review comments by B.Verna on package 2C3C to revise drawing 41152.		6/95
Pye	Revise BABEAB000-01717-0200-00010 to delete the callout for size of the steel sets per QA portion of package 2c (3rd release) comments #4 and #8 by J. Clark.		3/95
Rogers	Revise BABEAB000-01717-0200-00009 per QA Portion of Package 2C (3rd release) comment #5 by J. Clark.		3/95
Rogers	Generate a new analysis which documents the rationale for specific values selected in the following two (2) specifications: BABEAB000-01717-6300-03362 and -03363. See QA affecting portion of package 2C (5th release) revise per comments 8 & 21 by John Peters and # 5 & # 13 by M. Gomez.		3/95
Morrison	Update ESFDR ref. in 2C DIE BAB000000-01717-2200-0005 (3.2.1.1A, 3.2.2.1.J1)		1/95

Saunders	Comment # 2C 264 (Steve Dana). Design Process guidelines manual calls out need for Field Quality Control Section in all construction specs. This is not being done in all cases. A/E will review construction specs and add Field QC Section as necessary. Will develop a policy for constant application.		3/95
Saunders	The A/E will review all specs. for non QA entries contained in the QA section of specs. Non QA entries will either be separated into a new section or a subsection of the existing QA section with an annotation that clearly identifies the entries as non QA. Specification revisions will then be made by FCR. Comment 2C 93.		3/95
Taipale	Revise typo in FCR 94/141, Item 63 to read ST128	Need CR to fix	4/95
Taipale	Revise drawings and specs. to reflect revised DIE provisions regarding quantified limits. Need more specifics on amounts allowed.		Pending

CRW/MS/M&O

Design Verification Record (Continued)

(13.) WBS: 1.2.6
QA: QA
Page: 2 Of: 2

14. DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (2nd release)

15. DATE
09/22/94

16 COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
1	General	Add note to drawings stating that borehole information, geological information, and fault trace information is shown for reference purposes only and is neither a design input nor part of the design.	Agree to add the following note to the North Ramp layout drawings (Note will be added to future revisions of dwgs 40100, 40104, 40110, and 40120, which have already been approved): ANY BOREHOLE INFORMATION, GEOLOGICAL INFORMATION, OR FAULT TRACE INFORMATION SHOWN IS FOR REFERENCE PURPOSES ONLY AND IS NEITHER DESIGN INPUT OR PART OF THE DESIGN.	Accept FCA 9-26-94

21 REVIEWED BY:
Fredrick C. Arth — Print Name and Sign — 9-23-94 Date

22. RESPONSE BY: W.R. KENNEDY
W R Kennedy — Print Name and Sign — 9-25-94 Date

L 9-19-94

YMP-110-R3
06/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
1*	N/A-DRAWING	DRAWING BABEA000-01717-40120, REV01 - "NGR-2C" SHOULD B "NRG-2C" (REVIEW CRITERIA 3.7/3.11) (SEE ALSO YM-21-02)	1. Agree -- The Department Manager and the QA Manager will initial and date this editorial correction on the drawing.	Accept RJH 9/15/94
2*	N/A-DRAWING	DRAWING BABEA000-01717-2100-40120, REV 01 THE SOURCE DOCUMENTS WHICH WERE USED TO DETERMINE THE LOCATIONS OF THE BOREHOLES SHOULD BE LISTED AS DESIGN INPUT ON THE DESIGN INPUT ~~SHEET~~ LIST DJT 9/13/94 (REVIEW CRITERIA 3.7/3.11)	2. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	Accept RJH 9/15/94
3*	N/A-DRAWING	DRAWING BABEA000-01717-2100-40104, REV.01 THE SOURCE DOCUMENTS WHICH WERE USED TO DETERMINE THE BOREHOLE PROJECTIONS SHOULD BE LISTED AS DESIGN INPUT ON THE DESIGN INPUT ~~SHEET~~ LIST DJT 9/13/94 (REVIEW CRITERIA 3.7/3.11)	3. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	Accept RJH 9/15/94

5. Comments: Donald J Turner Date: 9/13/94

Exhibit YLP-31.2-AMA

YMP-110-R3
08/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
4	N/A - Drawing	DRAWING BABEAD000-01717-2100-40100, REV 01 THE SOURCE DOCUMENTS WHICH WERE USED TO DETERMINE THE LOCATIONS, ELEVATIONS AND DEPTHS OF BOREHOLES SHOULD BE LISTED AS DESIGN INPUT ON THE DESIGN INPUTS LIST. (REVIEW CRITERIA 3.7/3.11)	4 Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. *A note to this effect will be added to future revisions of this and similar drawings.*	Accept RLH 9/15/94
5	N/A - Drawing	DRAWING BABEAD000-01717-2100-40110, REV 01 CORRECT BOREHOLE NUMBERS AS FOLLOWS: (SEE ALSO CAR YM-94-062) CHANGE TO NGR-2A NRG-2A NGR-2D NRG-2D NGR-2 NRG-2 NGR-2C NRG-2C NGR-2B NRG-2B (REVIEW CRITERIA 3.7/3.11)	5 Agree -- The Department Manager and the QA Manager will initial and date this editorial correction on the drawing.	Accept RLH 9/15/94

8. Comments Donald J. Turner Date: 9/13/94

Exhibit YLP-31.2-AMA 6

YMP-110-R3
06/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
6	N/A - DRAWING	DWG BABEAD000-01767-2100-40110, REV 0, THE SOURCE DOCUMENTS WHICH WERE USED TO DETERMINE THE BOREHOLE LOCATION, DEPTH AND DIRECTION SHOULD BE LISTED A DESIGN INPUT ON THE DESIGN INPUT LIST. (REVIEW CRITERIA 3.7/5.11)	6. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	Accept RLH 9/15/94
7	N/A	NO COMMENT	7. NO RESPONSE	Accept RLH 9/15/94

5. Comments David O'Turney Date: 9/13/94

Exhibit YLP-31.2-AMA-1

YMP-110-03
06/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
8*		BABAED000-01717-2100-40100-01 Notes 5 reference SNL Drawing No. 88-60-09 as the source for geologic and structural information. This drawing should be listed as a design input on the input list or in the North Ram Layout Calculation. Review Criteria 3.7 and 3.11	8. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	Accept RH 9/15/94
9*		BABAED000-01717-2100-40100-01 Note 5 references USGS Open File Report 84-494 the source for fault trace locations. This report should be listed as a design input on the input list or in the North Ramp Layout Calculation. Review Criteria 3.7 and 3.11	9. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	Accept RH 9/15/94

5. Comments ROBERT HOWARD Date: 9/14/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
D 10		BABAED000-01717-2100-40100-01 Note 6 identifies the North Ramp as QA-1 and QA-2. The DIR for Package 2C identifies the North Ramp as QA-1, QA-2, and QA-5. Review criteria 3.6	10. Disagree -- This drawing only addresses that portion of the ESF Package 2C design that relates to the spatial positioning of the ramp. QA classifications governing this aspect of the design are identified in the DIR as being QA 1 and QA 2. The DIR identifies classification QA-5 as pertaining to permanent function ground support. This element of the design will be addressed in other 2C design documents that are not included in this review but that are included in the attached list.	Accept Kelt 9/15/94
11 K		BABAED000-01717-2100-40104-01 Notes 5 reference SNL Drawing No. 88-60-09 as the source for geologic and structural information. This drawing should be listed as a design input on the input list or in the North Ramp Layout Calculation.	11. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to that effect will be added to future revisions of this and similar drawings.	Accept Kelt 9/15/94

5. Comments ROBERT HOWARD Date: 9/14/94

YMP-110-R3
06/22/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
12 K		BABAED000-01717-2100-40104-01 Notes 5 &6 reference SNL Drawing No. 88-60-09 as the source for geologic and structural information. This drawing should be listed as a design input on the input list or in the North Ram Layout Calculation. Review Criteria 3.7 and 3.11	12. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that *was* used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to this and similar drawings. future revisions of	accept RLH 9/15/94
13 K		BABAED000-01717-2100-40104-01 Note 6 references USGS Open File Report 84-494 the source for fault trace locations. This report should be listed as a design input on the input list or in the North Ramp Layout Calculation. Review Criteria 3.7 and 3.11	13. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that *was* used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	accept RLH 9/15/94

5. Comments ROBERT HOWARD Date: 9/14/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
14*		BABAED000-01717-2100-40110-01 Note 9 identifies the North Ramp as QA-1 and QA-2. The DIE for Package 2C identifies the North Ramp as QA-1, QA-2, and QA-5. Review criteria 3.6	14. Disagree -- This drawing only addresses that portion of the ESF Package 2C design that relates to the spatial positioning of the ramp. QA classifications governing this aspect of the design are identified in the DIE as being QA-1 and QA-2. The DIE identifies classification QA-5 as pertaining to permanent function ground support. This element of the design will be addressed in other 2C design documents that are not included in this review but that are included in the attached list.	Accept KH 9/15/94
15*		BABAED000-01717-2100-40110-01 Note 4 references SNL Drawing No. 88-60-09 as the source for geologic and structural information. This drawing should be listed as a design input on the inputs lists or in the North Ramp Layout Calculation. Review Criteria 3.7 and 3.11	15. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	Accept KH 9/15/94

5. Comments ROBERT HOWARD Date: 9/14/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
16 K		BABAED000-01717-2100-40120-01 Note 8 identifies the North Ramp as QA-1 and QA-2. The DIE for Package 2C identifies the North Ramp as QA-1, QA-2, and QA-5. Review criteria 3.6	K. Disagree -- This drawing only addresses that portion of the ESF Package 2C design that relates to the spatial positioning of the ramp. QA classifications governing this aspect of the design are identified in the DIE as being QA-1 and QA-2. The DIE identifies classification QA-5 as pertaining to permanent function ground support. This element of the design will be addressed in other 2C design documents that are not included in this review but that are included in the attached list.	Accept RKH 9/15/94
17 K		BABAED000-01717-2100-40120-01 Note 5 references SNL Drawing No. 88-60-09 as the source for geologic and structural information. This drawing should be listed as a design input on the input list or in the North Ram Layout Calculation. Review Criteria 3.7 and 3.11	A. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings	Accept RKH 9/15/94

5. Commenter ROBERT HOWARD Date: 9/14/94

YMP-110-R3
06/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
18*		BABAED000-01717-2100-40120-01 Note 5 references USGS Open File Report 84-494 the source for fault trace locations. This report should be listed as a design input on the input list or in the North Ram Layout Calculation. Review Criteria 3.7 and 3.11	18. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	accept RLH 9/15/94
19*		BABAED000-01717-2100-40104-01 Note 10 identifies the North Ramp as QA-1 and QA-2. The DIE for Package 2C identifies the North Ramp as QA-1, QA-2, and QA-5. Review criteria 3.6	19. Disagree -- This drawing only addresses that portion of the ESF Package 2C design that relates to the spatial positioning of the ramp. QA classifications governing this aspect of the design are identified in the DIE as being QA-1 and QA-2. The DIE identifies classification QA-5 as pertaining to permanent function ground support. This element of the design will be addressed in other 2C design documents that are not included in this review but that are included in the attached list.	accept RLH 9/15/94

5. Comments Robert Howard Date: 9/14/94

YMP-110-R3
08/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C3 (part a) - Drawings and Specifications Draft/Revision: See Page 2, 3, 4 of DAR ☐ Q

Document Number: See Page 2, 3, 4 of DAR 1189 Governing Document: N/A Date: ☑ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
	DWG 43030	TO HELP LOCATING THE UTILITIES SHOWN IN THIS DRAWING THE SURVEY STATION SHOULD BE MARKED AT MATCH LINE	1. THE MATCH LINE IS NOT AT STATION 00+00 AS SHOWN ON DWG 43031. THE INSTRUMENTATION IN THIS AREA IS SHOWN ON DWG. 43050 DETAIL 1. W. REGD 10/12/94.	ACCEPT JAG BJV 10/12/94
	DWG 43040	SHOW STATION FOR ALCOVE LOCATION	2. AGREE WILL ADD AT NEXT REVISION TO DRAWING. W.REGD 10/12/94 INFORMATION WILL BE INDICATED ON AS-BUILT TO BE ADDED AT NEXT REVISION. (WP)	ACCEPT JAG BJV 10/12/94
	DWG 43050	SHOW LOCATION WHERE DETAIL 3 WILL BE INSTALLED	3. DETAIL 3 IN NOT USED AT THIS TIME. W. REGD 10/12/94. DETAIL WILL BE INDICATED ON AS-BUILT TO BE REMOVED ON NEXT REVISION (WP)	ACCEPT JAG BJV 10/12/94
	DWG 44010	STATIONS DO NOT SEEM TO MATCH LAYOUT FOR EAC OF NORTH RAMP	4. STATION NUMBERS WERE VERIFIED AGAINST EXCAVATION DRAWINGS AND DETERMINED TO BE CORRECT. W.REGD 10/12/94	ACCEPT JAG BJV 10/12/94
	SEVERAL DWGS	DWGS # 44026 AND # 44032 THRU 44034 SEEM TO BE MISSING FROM THIS PACKAGE	5. DRAWINGS WERE MISSING FROM ORIGINAL SUBMITTAL AND WILL BE INCLUDED IN NEXT SUBMITTAL W.REGD 10/12/94	ACCEPT JAG BJV 10/12/94
	DWGS 45301 45302 45303	IT IS NOT VERY CLEAR WHICH ARE THE LOCATIONS FOR THESE UTILITIES	6. LOCATIONS ARE GIVEN AS NOTED TO INSTALL EVERY 60 METERS ETC. THIS IS DONE TO PROVIDE THE CONSTRUCTOR WITH THE FLEXIBILITY HE NEEDS TO PROCEED IN AN EXPEDITIOUS MANNER.	ACCEPT JAG BJV 10/12/94

5. Comments B.J. Verna Date: 10/5/94

YMP-110-R3
06/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C2 (part a) - Drawings - See page 2 of DAR Draft/Revision: N/A ☑ Q

Document Number: See page 2 of DAR Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
1.	General	The notes section of every drawing contains a delta mark that does not identify the changed portion or is superfluous.	IN ACCORDANCE WITH QAP-3-10/REV 04, TP 5.11.5, "REVISED SCHEDULES OR NOTES MAY OMIT CLOUDS BUT REVISION DELTAS MUST BE PLACED ADJACENT TO THE REVISED SCHEDULE OR NOTE." NO CHANGE REQUIRED.	Accept RJV 10/6/94
2.4	40116	This drawing is the only one out of this series that does not have the notes listed on it. To keep consistency suggest that the notes be added to this drawing.	AGREE TO ADD NOTES TO ~~DWG 40116 WHEN THE DWG IS REVISED~~ WRK 10-05-94 THE NEXT REVISION OF DWG 40116, ADD TO PRIORITIZED TASK LISTING MDL 10-6-94	[illegible] Accept RJV 10/6/94

5. Comments J. M. Replogle Date: 9/30/94

CRWMS/M&O

Document Review Record
(Continued)

WBS: 1.2.6
QA: QA
Page: 12 Of: 40

DOCUMENT TITLE	REVISION	DATE	DOCUMENT IDENTIFIER
MINING ANALYSIS Vol 1	0B	5-2-94	BABFA0000-01717-0200-00001

COMMENT NO.	SECTION/ PARAGRAPH	COMMENTS	RESPONSE	ACCEPT/ REJECT
1 2C 102	11/11.3 p 15	☑ Mandatory - Requirement # N/A ☐ Non-Mandatory (No Response Required) It appears that the design input is a pass through from TCO to the A/E. ESFDR Appendix B is suppose to convey design needs of the PI's. Using direct pass through could make it difficult to trace the design input for test. This could create a traceability problem and may raise some concern. Why not develop approach that allows changes to ESFDR Appendix B as means to transmit PI facility requirements.	2C - 102 L.R. MORRISON WE ARE CURRENTLY ATTEMPTING TO IMPLEMENT THE PROCEDURE YOU SUGGEST. THE SYSTEMS REQUIREMENTS PEOPLE (SAM RINDSKOPF) ARE ISSUING A REQUEST TO THE TCO TO UPDATE APPENDIX B OF THE ESFDR. WHEN THE ESFDR IS REVISED, THE BFD WILL BE UPDATED AS REQUIRED TO MATCH. HOWEVER, AS ESFDR APPENDIX B IS NOT CURRENTLY UP-TO-DATE WE FEEL IT IS PROPER TO USE TCO LETTERS DIRECTLY TO INSURE INCORPORATION OF TCO REQUIREMENTS UNTIL THE BFD IS UPDATED. THIS PROCEDURE WILL LIKELY BE FOLLOWED IN THE NEAR FUTURE AS IT IS UNLIKELY THAT REVISIONS TO THE ESFDR CAN BE MADE IN THE VERY SHORT TIME REQUIRED TO SUPPORT BFD AND DESIGN PACKAGE SCHEDULES.	Accept [illegible] 6/14/94 Accept JAG 6/16/94

REVIEWED BY: Jaime Gonzalez [signature] Printed Name & Signature — 5/..3/94 Date

RESPONSE BY: L.R. MORRISON [signature] Printed Name & Signature — 5-26-94 Date

HNK

GAP-3-1

0033 (11/01/93)

CRWMS/M&O
LOGAN/
BARRERES
CLARK

Document Review Record
(Continued)

WBS:
QA: QA
Page: 17 Of: 40

DOCUMENT TITLE	REVISION	DATE	DOCUMENT IDENTIFIER
BFD	D4	5/2/94	01717-6300-00002

COMMENT NO.	SECTION/ PARAGRAPH	COMMENTS	RESPONSE	ACCEPT/ REJECT
2C 107	D3 PAGE 7-356	☒ Mandatory - Requirement # N/A ☐ Non-Mandatory (No Response Required) It is stated in the BFD that the fire alarm system should be activated only after two or more indications of detection devices (BFD D3 page 7-356). This is not a correct approach to take in order to minimize false alarms. It should be done in a statistical manner using confidence limits to set appropriate alarm levels to reduce false alarms to a statistically satisfactory level. To arbitrarily require at least two alarms before any action is taken could well result in a real alarm being ignored with the associated consequences of such an action.	THIS WILL BE REVISITED AND THE CRITERIA CHANGED IF WARRANTED	ACCEPT JAG 6/13/94

REVIEWED BY: Jaime A. Gonzalez [signature] 5/20/94
Printed Name & Signature Date

RESPONSE BY: JOHN J. CLARK [signature] 5-27-94
Printed Name & Signature Date

QAP-3-1 PM.

DOCUMENT TITLE	REVISION	DATE	DOCUMENT IDENTIFIER
ELECTRICAL ANALYSIS — 90% REVIEW PACKAGE 2C	0B	05-16-94	BABFAA000-01717-0200-00001

COMMENT NO.	SECTION/ PARAGRAPH	COMMENTS	RESPONSE	ACCEPT/ REJECT
2C 128	GENERAL	WHERE ARE THE UPDATED LOAD FLOW ANALYSIS ETC, WHICH I BELIEVE SHOULD BE PART OF THE ~~ANALYSIS~~ PACKAGE. THIS COMMENT IS RELEVANT TO SECTION 9 ON PAGE 4 OF 7. (MANDATORY)	THE M&O IS IN THE PROCESS OF UPDATING THE PROJECT LOAD FLOW DATA INTO A COMPUTER SOFTWARE PROGRAM CALLED ETAP. ONCE THIS UPDATE HAS BEEN COMPLETED REVISED LOAD FLOW DATA WILL BE AVAILABLE.	Accept JAG 6/1/94

REVIEWED BY: Jaime Gonzalez — Printed Name & Signature — 4/7-/94 — Date

RESPONSE BY: WILLIAM REED — Printed Name & Signature — 5/23/94 — Date

QAP-3-1

6033 (11/91A)

CRWMS/M&O

Design Verification Record (Continued)

(13.) WBS: 1.2.6
QA: QA
Page: 3 Of: 8

14. DESIGN PACKAGE TITLE	15. DATE
Quality Affecting Portion of Package 2C (4th release)	10/14/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
3	SPEC. 02341 STEEL SETS AND ACCESSORIES SUBSURFACE SPECIFICATION SECTION: 2.01 PAR.: A, B, & C	There is no evidence of backup supporting documentation (calculations or analysis) for the materials specified for the components in Sections 2.01 A. 1.- 7., 2.01 B., 2.01 B. 1., and 2.01 C.	This will be included in the next revision of the analysis. [signature] 10-27-94 (the steel set analysis)	ACCEPT [signature] 10-27-94

21. REVIEWED BY:	22. RESPONSE BY:
William Hunt [signature] 10-25-94	E. M. Sedenik [signature] 10/27/94
Print Name and Sign / Date	Print Name and Sign / Date

QAP 3.3

9000 Rev. 04/12/94

CRWMS/M&O

Design Verification Record (Continued)

(13.) WBS: 1 2.6
QA: QA
Page: 4 Of: 5

14. DESIGN PACKAGE TITLE	15. DATE
Quality Affecting Portion of Package 2C (4th release)	10/14/94

16. COMMENT NO	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
4	SPEC. 02341 STEEL SETS AND ACCESSORIES SUBSURFACE SPECIFICATION SECTION: 2.02 PAR.: B & C	There is no evidence of backup supporting documentation (calculations or analysis) for the bending tolerances and the shop fabrication tolerances specified.	This will be included in the next revision of the analyses, ~~also~~ (steel set analyses) EMS 10-27-94	ACCEPT [illegible] 10-27-94

21. REVIEWED BY	22. RESPONSE BY
William Hunt — William Hunt — 10-25-94 (Print Name and Sign / Date)	E.M. Sedenik — [signature] — 10/27/94 (Print Name and Sign / Date)

QAP 3.2

0508 (Rev. 04/13/94)

CRWMS:M&O

Design Verification Record (Continued)

(13.)

WBS: 1.2.6
QA: QA
Page: 5 Of: 6

14 DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (4th release)

15. DATE 10/14/94 (8)

16. COMMENT NO	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
5	SAEC.02341 STEEL SETS AND ALLOY SLINGS SUBMERGED SPECIFICATION SECTION: 3.03 PAR.: B 2.	There is no evidence of backup supporting documentation (calculations or analysis) for the 100mm (4 inches) tolerance specified.	This will be included in the next revision of the analysis. (steel set analysis)	ACCEPT 10-27-94

21. REVIEWED BY: William Hunt — Print Name and Sign — 10-25-94 — Date

22. RESPONSE BY: [illegible] — Print Name and Sign — 10/27/94 — Date

CRWMS/M&O

Design Verification Record (Continued)

(13.)

WBS: 1.2.6
QA: QA
Page: 7 Of: 8

14. DESIGN PACKAGE TITLE: Quality Affecting Portion of Package 2C (4th release)

15. DATE: 10/14/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
7	TS NORTH RAMP STEEL SETS & LAGGING ELEVATION DRAWING, BY: BABCA8000-01717-2100-41101 REV. 03 NOTE 7.	Note 7. states, "Carriage bolts(grade A) shall conform to ASME B18.5-1990 and ASTM A307." This is no evidence of supporting documentation specifying this material conformance for the carriage bolts.	This will be incorporated into the next revision to the analyses, (steel set analyses)	ACCEPT 10-27-94

21. REVIEWED BY: William Hunt — William Hunt — 10-26-94
(Print Name and Sign) (Date)

22. RESPONSE BY: [signature] — 10/27/94
(Print Name and Sign) (Date)

OAP 3.9

RWMS/M&O

Design Verification Record
(Continued)

(13) WBS: 126
QA: QA
Page: 7 of 17

14. DESIGN PACKAGE TITLE	15. DATE
Quality Affecting Portion of Package 2C (4th release)	10/14/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
6	BABEAB000 -01717-6300 -02341 2.01.A.7	Is ASTM A500 the preferred material over ASTM A 53, Grade B.	Agree, ASTM A53 GRB will be specified. Steel set analysis and material dedication will be updated to reflect this change no impact on either analyses for stress considerations	ACCEPT MD 10/27/94

21. REVIEWED BY:	22. RESPONSE BY:
Matthew J Gomez [signature] 10/25/94 Print Name and Sign Date	E.M. Sedenik [signature] 10/26/94 Print Name and Sign Date

RWMS/M&O

Design Verification Record (Continued)

(13)

WBS: 126
QA: QA

4 DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (4th release)

15 DATE
10/14/94

16 COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
0	BABEAB000 -01717-6300 -02341 3.03.A.1	Horizontal offset of 215mm exceeds the 210mm computed sum of maximum tolerances as shown in Structural Steel Sets Analysis Attachment V page V-3. Statement in analysis should also be revised to reflect 210mm.	Agree, next revision of the Steel Set Analysis will incorporate this adjustment	ACCEPT MD 10/27/94

21 REVIEWED BY:
Matthew J Gomez
Print Name and Sign
10/25/94
Date

22. RESPONSE BY:
E M. FREDERICK
Print Name and Sign
10/27/94
Date

WMS/M&O

Design Verification Record (Continued)

(13) WBS: 1.2.6
QA: QA

DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (4th release)

15. DATE 10/14/94

COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
1	BABEAB000 -01717-6300 -02341 3.03.B.1	1219mm (4 ft) spacing should be a QA Control since it effects maximum loading on the steel sets. This is a spacing, not a tolerance as stated.	Agreed, a ± 2 inch tolerance added. The next revision of the steel set analysis will incorporate the tolerance. At present there is sufficient reserve in the analysis to accomodate a 4% increase in stress levels	Accept MJ 10/27/94

21. REVIEWED BY:
Matthew I Gomez 10/27/94
Print Name and Sign Date

22. RESPONSE BY:
F. M. JEDENIUS 10/27/94
Print Name and Sign Date

RWMS/M&O

Design Verification Record (Continued)

(13)

WBS: 1.2.6
QA: QA

14. DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (4th release)

15. DATE
10/14/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20 ACCEPTED
15	BABEAB000-01717-2100-41102 General	Sections and Details do not match Structural Steel Set Analysis BABEAB000-01717-0200-00002 as follows: SECTION B — Page III-41 shows a 3" slot. SECTION C — Page III-34 shows a 15/16" diameter hole. Page III-34 shows a 1 1/2" dimension from c.l. of bolt to c.l. of beam. DETAIL 2 — Page III-43 shows a 2" wedge flange width. Also since this is tapered, dimension should say VARIES (2" MAX). VIEW D — Page III-6 shows an 8" long clip plate. No design found for 3/8" x 4" Sq plate.	The next revision of the steel set analysis and drawings will incorporate these comments. Section B - drawing correct, analysis to be corrected Section C - drawing correct, analysis to be corrected Detail 2 - analysis correct, drawing to be corrected View D - drawing correct, ~~analysis~~ 10/27/94 analysis to be corrected.	ACCEPT MJG 10/28/94

21. REVIEWED BY:
Matthew J Gomez — 10/26/94
Print Name and Sign — Date

22. RESPONSE BY
E.M. JEDENSKI — 10/27/94
Print Name and Sign — Date

RWMS/M&O

Design Verification Record (Continued)

(13)

WBS: 126
QA: QA

14. DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (4th release)

15. DATE
10/14/94

16. COMMENT NO.	17 DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20 ACCEPTED
16	BABEAB000-01717-2100-—41103 General	Sections and Details do not match Structural Steel Set Analysis BABEAB000-01717-0200-00002 as follows: DETAIL 1 — Section 11.6 of conclusions & Page III-23 call for 3/4" x 8" x 1'-01/2" plate. VIEW A — Page III-17 calls for 3" to the first bolt. Page III-17 calls for 2 1/2" dimension from c.l. of bolt to c.l. of beam. Page III-16 & III-17 show top line of holes in W8 as alternate location of Jacking Bracket. Page III-22 shows edge of plate at 6 1/2" from c.l. of beam. Page III-37 shows 2 1/2" dimension from c.l. of bolt to c.l. of beam at slotted holes. DETAIL 2 — Page III-16 shows a 1/2" end plate on of Jacking Bracket. Page III-17 shows 2" dimension for location of sloted holes. VIEW B — Page III-17 calls for 9/16 x 1 1/4" slotted hole. Page III-17 shows 3" dimension from c.l. of bolt to c.l. of beam at slotted holes. Page III-17 calls for 2 1/2" dimension from c.l. of bolt to c.l. of beam. Page III-16 shows a 1/2" plate along c.l. Page III-16 shows a 1/2" end plate on of Jacking Bracket.	AFTER REVIEW OF THE DRAWINGS AND ANALYSIS, THE DRAWINGS ARE CORRECT. THE SKETCHES IN THE ANALYSIS WERE A STARTING POINT FOR THE DRAWING. WITH THE NEXT REVISION OF THE ANALYSIS THE SKETCHES WILL BE UPDATED TO MATCH THE CORRECT INFORMATION ON THE DRAWING	ACCEPT MJG 10/28/94

21 REVIEWED BY:
Matthew J Gomez — Print Name and Sign — 10/28/94 — Date

22. RESPONSE BY:
E. M. JEDENAK — Print Name and Sign — 10/28/94 — Date

CRWMS/M&O

Design Verification Record (Continued)

(13)

WBS: 1.2.6
QA: QA

14 DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (4th release)

15 DATE
10/14/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
13	BABEA8000-01717-0200-00003	BABEA8000-01717-0200-00003 R-3 MATERIAL DEDICATION ANALYSIS for COMMERCIAL GRADE ITEMS-STEEL SETS This analysis states that "the items analyzed in this document are steel sets and accessories used in the TS north ramp ground support". This analysis hinges on the premise that items procured as "commercial grade" are to be dedicated and provides the inspection and test methodology for doing this. By definition an "engineered item" cannot be "commercial grade". However a review of the M&O steel set procurement drawings discloses that the steel sets are "engineered items". Per the QARD definition Commercial Grade items are those "not subject to design or specification criteria unique to the Program or nuclear facilities; used in applications other than the nuclear industry, and ordered from the manufacturer or supplier on the basis of specifications set forth in the manufacturer's published product description." As such while steel set components may in fact be procured as commercial grade and dedicated at the site, fabricated steel sets to the M&O drawings must be procured from a qualified supplier in accordance with QARD requirements and have nothing to do with commercial grade dedication. This analysis fails to make this distinction and infers that the steel sets are procured as commercial grade.. They are not.	THE MATERIALS DEDICATION ANALYSIS BABEA8000-01717-0200-00003 REV03, WILL BE REVISED TO REFLECT: 1. STEEL SETS ARE AN ENGINEERED ITEM, BUT THAT COMPONENTS OF STEEL SETS MAY BE PURCHASED AS COMMERCIAL GRADE ITEMS WHICH MEET QARD DEFINITION 2. PURPOSE OF THE ANALYSIS IS TO ESTABLISH CRITICAL AND FUNCTIONAL CHARACTERISTICS OF THE STEEL. 3. INSPECTION AND TESTS IDENTIFIED IN THE ANALYSIS MAY BE USED TO ENSURE THE CRITICAL AND FUNCTIONAL CHARACTERISTICS.	Accepted JB 10/27/94

21. REVIEWED BY:
John W Peters
Print Name and Sign
10/26/94
Date

22. RESPONSE BY:
JOHN H DYE
Print Name and Sign
10/27/94
Date

RWMS/M&O

Design Verification Record
(Continued)

(13)

WBS: 126
QA: QA
Page: 15 Of: 33

14. DESIGN PACKAGE TITLE	15. DATE
Quality Affecting Portion of Package 2C (4th release)	10/14/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
[illegible]	BABEAB000-01717-0200-00003	BABEAB000-01717-0200-00003 R-3 MATERIAL DEDICATION ANALYSIS for COMMERCIAL GRADE ITEMS-STEEL SETS Definition for " Commercial Grade Items " should be included.	AGREE. WILL INCLUDE THE QARD DEFINITION OF COMMERCIAL GRADE ITEM IN THE NEXT REVISION OF THE ANALYSIS.	[signature] 10/27/94

21. REVIEWED BY:	22. RESPONSE BY:
John W. Peters [signature] 10/26/94	JOHN H. PYE [signature] 10/27/94
Print Name and Sign — Date	Print Name and Sign — Date

RWMS/M&O

Design Verification Record (Continued)

(13.) WBS: 1.2.6
QA: QA
Page: 16 of 33

4. DESIGN PACKAGE TITLE
Quality Affecting Portions of Package 2C (4th release)

15. DATE
10/14/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
15	BABEA8000-01717-0200-00003	BABEA8000-01717-0200-00003 R-3 MATERIAL DEDICATION ANALYSIS for COMMERCIAL GRADE ITEMS-STEEL SETS Per 4.1. As identified in the Material Dedication Analysis for Barbolts, Testing Criteria must meet QARD Section 11 criteria. This analysis Specifically Addresses meeting QARD Section 10 requirements for satisfying "Inspection and Test Plan" requirements. QARD Section 11 also applies. The analysis and specification specifically identify "testing" requirements. See previous comments.	ACCEPT. CHANGES WERE MADE TO THE MATERIALS DEDICATION ANALYSIS BABEA8000-01717-0200-00003 REV 01. IN REGARDS TO REMOVING QARD SECTION 10 & 11, WERE MADE TO THE BABEA8000-01717-0200-00003 REV 03 THE ONLY REFERENCE TO QARD SECTION 10 IS IN A QUOTE FROM THE YMP DESIGN PLAN, WHICH IS THE BASIS FOR INCLUDING INSPECTION AND TEST CRITERIA IN THE SPECIFICATION AND NOT PRODUCING A SEPARATE PLAN	Accept MB 10/27/94

21. REVIEWED BY:
John W Peters — Print Name and Sign — 10/26/94 Date

22. RESPONSE BY:
JOHN H. PYE — Print Name and Sign — 10/27/94 Date

NMS/M&O

Design Verification Record (Continued)

(13)

WBS: 1 2 6
QA: QA
Page: 17 of: 33

DESIGN PACKAGE TITLE
ality Affecting Portion of Package 2C (4th release)

15. DATE
10/14/94

COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
1	BABEA8000-01717-0200-00002	Structural Steel Sets Analysis Of a BABEA8400-01717-0200-00002 Rev 04 Attachment I, Page I-31 Equations for determining the horizontal and vertical components of the jacking force are incorrect. $F_x = F_j \sin\alpha$ should be $F_x = F_j \cos\alpha$ and $F_y = F_j \cos\alpha$ should be $F_y = F_j \sin\alpha$. This impacts the jacking load analysis and possibly some of the subsequent structural analyses. (usi	ACCEPT. THE SINE AND COSINE VALUES ASSOCIATED WITH THE DETERMINATION OF F_x AND F_y WERE INCORRECTLY IDENTIFIED. THE RESULTS OF RE-ANALYSIS INDICATE LESS THAN A 2% CHANGE IN THE INTERACTION RATIOS WHICH IS NOT CONSIDERED SIGNIFICANT. AND DOES NOT CHANGE THE STEEL SET DESIGN. THIS WILL BE ADDRESSED BY INCORPORATING THE RE-ANALYSIS WHEN THE STEEL SET ANALYSIS IS REVISED.	accept JWP 10/27/94

21. REVIEWED BY:
John W Peters
Print Name and Sign
10/26/94
Date

22. RESPONSE BY:
JOHN H. PYE
Print Name and Sign
10/29/94
Date

RWMS/M&O

Design Verification Record
(Continued)

(13)

WBS: 1.2.6
QA: QA
Page: 19 of 33

• DESIGN PACKAGE TITLE
uality Affecting Portion of Package 2C (4th release)

15. DATE
10/14/94

COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20 ACCEPTED
18	BABEAB000-01717-0200-00002	Structural Steel Seismic Analysis Of 6 BABEAB000-01717-0200-00002 Rev 04 Attachment II, Page II-21 Assumptions 1 and 2 at the bottom of the page need to be identified in Section 7 "Assumptions" of the text. (MS)	Assumption 1 is an input not an assumption. ~~Assumption~~ 2nd 10/27/94 Assumption 2 is an assumption and will be listed in Section 7 Assumption when the analysis is next revised.	Accept 10/27/94

21. REVIEWED BY:
John W Peters
Print Name and Sign
10/26/94
Date

22. RESPONSE BY:
E.M. Gedeon
Print Name and Sign
10/27/94
Date

WMS/M&O

Design Verification Record
(Continued)

(13) WBS: 126
QA: QA
Page: 24 Of: 38

DESIGN PACKAGE TITLE
ality Affecting Portion of Package 2C (4th release)

15. DATE
10/14/94

COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
7.3	BABEA8000-01717-0200-00002	Structural Steel Sets Analysis DI # BABEA8000-01717-0200-00002 Rev 04 Attachment IV, Page IV-5. The assumption that the steel set loading M_x will be equal to 0.25% needs to be identified in Section 7 "Assumptions" of the text. (WS)	ACCEPT. WILL CITE AS AN ASSUMPTION IN SECTION 7 OF THE ANALYSIS WHEN REVISED.	accepted [signature] 10/27/94

21. REVIEWED BY:
John W. Peters [signature] 10/26/94
Print Name and Sign Date

22. RESPONSE BY:
JOHN H. PYE [signature] 10/27/94
Print Name and Sign Date

RWMS/M&O

Design Verification Record (Continued)

(13.)

WBS: .1.6
QA: QA

4. DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (4th release)

15. DATE
10/14/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
28	BABEAC000-01717-0200-00005	Requirements Allocation Analyses for Furnishings DI BABEAC000-01717-0200-00001 Revision 1 and the Requirements Allocation Analysis for Linings and Ground Support DI BABEAB000-01717-0300-00008 Revision 1 under method state: The method used to identify applicable requirements was done "by detailed review of the ESFDR". Contrary to the stated method it has been determined that inconsistencies exists between RAAs. It is not clear what the rational is for determining which ESFDR are applicable to each individual RAA. For example ESFDR requirement 3.2.1 J.4 is identified as applicable to Requirements Allocation Analysis for Furnishings DI BABEAC000-01717-0200-00001 Revision 1 but is not identified in the Ground Support RAA. Additionally, engineers preparing RAAs have different approached to identifying upper tier requirements. In one case, the Ground Support RAA preparer identifies each ESFDR requirement as stated, in another case the preparer for the Furnishing RAA specifies only one requirement if that requirement restated elsewhere (See ESFDR Requirements 3.2.1g, 3.2.1h & T, 3.2.1.25.4 for this type of inconsistency. (RLH)	MANAGEMENT HAS TAKEN THIS COMMENT UNDER ADVISEMENT AND WILL TAKE APPROPRIATE STEPS TO ESTABLISH CONSISTENCY IN THE PREPARATION OF THE RAA. A NATURAL WORKING GROUP HAS BEEN FORMED WITHIN THE M&O TO ADDRESS THIS AND RELATED CONCERNS.	Accepted JWP 10/24/94

21. REVIEWED BY:
John W. Peters — Print Name and Sign — 10/24/94 Date

22. RESPONSE BY:
JOHN H. PYE — Print Name and Sign — 10/27/94 Date

YMP-110-R3
06/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

Page ____ of ____

1. Document Title: Package 2C3 (part c) - Drawings & Specification Draft/Revision: N/A ☐ Q

Document Number: N/A Governing Document: N/A Date: N/A ☑ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
1. ¥	45608 41152	These dwgs have a mix of metric and english dimensions that should be all metric. Dwg 45609 is a dwg of similar components, which is done all in metric. Suggest that at the next revision ALE change all relevant dimensions to Metric.	Agree [signature] 10-13-94	Accept BJL 10/13/94

5. Comments B. J. Vecna Date: 10/13/94

Exhibit YLP-31.2-AMA.6

CRWMS/M&O

Design Verification Record
(Continued)

(13.) WBS: 1.2.6
QA: QA
Page: 5 Of: 14

14. DESIGN PACKAGE TITLE	15. DATE
Quality Affecting Portion of Package 2C (3rd release)	09/29/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
JJC 05 4 JJE 10-11-94	BABEAB000-01717-2100-40151 JJE 10-10-94	TS North Ramp Ground Support Master Elevation and Section DI BABEAB000-01717-2100-40151 Revision 1 Draft. The Table on this drawing calls out installation of Structural Steel Sets for Category 5 ground support. However, the TS North Ramp Scoping Analysis DI BABEAB000-01717-0200-00010 Rev 1 page 51 of 81 specifically calls out installation of W8 x 31 steel sets. It is not clear where the source of the specific requirement for installation of W8x 31 steel sets comes from for the analysis and why this requirement is not captured in drwg 40151. (QAP 6.2 Review Criteria 3.7 and 3.11) (RLA) NOTE: THIS COMMENT GENERATED BY OQA DURING SURVEILLANCE. 1 CONCUR JJE 10-11-94	The TS North Ramp Scoping Analysis will be revised to delete the callout for the size of the steel sets, adding wording to the effect that the size will be determined via separate analysis. Since this change will not impact any of the associated design outputs, the revision will be made after the design package is issued and the appropriate inputs sheets will be updated accordingly.	JJE 10-11-94 ACCEPT

21. REVIEWED BY:	22. RESPONSE BY:
John J. Clark [signature] 10-10-94	John H Pye 10/11/94 JOHN H. PYE 10-11-94
Print Name and Sign / Date	Print Name and Sign / Date

JJE 10-11-94

QAP 3.2 OSPS (Rev. 04/12/94)

CRWMS/M&O

Design Verification Record (Continued)

(13.) WBS: 1.2.6
QA: QA
Page: 9 Of: 14

14. DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (3rd release)

15. DATE
09/29/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
N.C. ~~09~~ ~~10~~ JJC 10-11-94 08 JJC 10-11-94	TS NORTH RAMP GROUND SUPPORT SCOPING: BABEAB000-01717-0200-00010 SECT. 5.0	REGARDING DESIGN INPUTS p.11 of the scoping analysis calls out the following design inputs: TDIF #302273 provided by SNL (Design Input 5.2) TS North Ramp Mass Classification (Design Input 5.3) TS North Ramp Stability Analysis (Design Input 5.4) TS North Ramp Alcove Ground Support Analysis (Design Input 5.5) These design inputs are not listed in the Section 5.0 of the Analysis. Demonstrate that these inputs where appropriately identified and checked in accordance with QAP-3-9. (RLH) NOTE: THIS COMMENT GENERATED BY OQA DURING SURVIELLANCE. I CONCUR JJC 10-11-94	Page 11 of the scoping analysis will be changed (as a part of the revision to this document as discussed under 5. above) to delete the bulletized wording. The item under the first bullet is presently captured in Design Inputs, Section 5. The remainder of the items were not design input. They are used as references elsewhere in the scoping analysis that confirm the appropriateness of the designs selected in the scoping analysis. The analysis will be clarified to better address the relationship of these analyses to one another when it is revised. THIS CHANGE WILL NOT IMPACT ANY OF THE ASSOCIATED DESIGN OUTPUTS, THE REVISION WILL BE MADE AFTER THE DESIGN PACKAGE IS ISSUED AND THE APPROPRIATE INPUTS SHEETS WILL BE UPDATED ACCORDINGLY. JHP 10/10/94.	JJC 10-11-94 ACCEPT ACCEPT ADDITION JJC 10-11-94

21. REVIEWED BY:
John J. Clark — John J. Clark — Print Name and Sign — 10-10-94 — Date

22. RESPONSE BY:
John H Pye 10/11/94 — JOHN H PYE — Print Name and Sign — 10-11-94 — Date
JJC 10-11-94

QAP 5-2

0808 (Rev 04/13/94)

CRWMS/M&O

Design Verification Record
(Continued)

(13.) WBS: 1.2.6
QA: QA
Page: 6 Of: 14

14. DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (3rd release)

15. DATE
09/29/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
JJC 067 ~~JJC 10-11-94~~ 05 JJC 10-11-94	BABEAB000-01717-6300-~~01~~02165 SECT. 6.1 & 6.2 & 6.3 JJC 10-10-94	The Specification Inputs list for BABEAB000-01717-6300-~~02169~~ Rev 4 "Rockbolts ad Accessories" identifies the Material Dedication Analysis (DI BABEAB000-01717-0200-00009 rev 1) as a design input. This analysis clearly describes both Inspection and Test requirements as addressed in QARD section 7.2.12 for commercial grade items. (The QARD allows for either.) Testing (section 11.0 and Inspection (QARD section 10.0) are different elements of the YMP QA program. Section 6.0 of the analysis refers to QARD Section 7.2.12 D and QARD Section 10 but not to QARD Section 11.0. The analysis specifically calls for Inspection or Testing of commercial grade items in para 10.1.4; inspection and testing in 10.3.1.1 and 10.3.1.3 for rockbolts; testing of shotcrete cores in paragraph 10.3.2.2; rockbolt Test Requirements in 10.4.3.1 and separate Inspection requirements in paragraph 10.4.3.3; construction testing requirements in 10.5.3.1 and construction inspection requirements in para 10.5.3.3. QARD Section 11.0 (Testing) requirements are not imposed as required by the QARD. (QAP 6.2 Review Criteria 3.9) KOG -02166 10-10-94 NOTE: THIS COMMENT GENERATED BY 0 QA DURING SURVEILLANCE. 1 CONCUR JJC 10-11-94	The Materials Dedication Analysis will be revised to delete the following: 1) the last sentence in Section 6.1 will be deleted, 2) all of Section 6.2 will be deleted, and, 3) all of Section 6.3 will be deleted. Since this change will not impact any of the associated design outputs, the revision will be made after the design package is issued and the appropriate inputs sheets will be updated accordingly.	JJC 10-11-94 ACCEPT

21. REVIEWED BY:
John J. Clark — Print Name and Sign — 10-10-94 Date

22. RESPONSE BY:
DANA J. ROGERS — Dana J. Rogers — Print Name and Sign — 10-11-94 Date

QAP 3-3

0600 (Rev. 04/13/94)

CRWMS/M&O

Design Verification Record
(Continued)

(13.) WBS: 1.2.6
QA: QA
Page: 2 Of: 42

14. DESIGN PACKAGE TITLE	15. DATE
Quality Affecting Portion of Package 2C (5th Release)	10/31/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
1	BABEAB000-01717-6300-~~02341~~ 11/1/94 General 03263	An analysis should be prepared to document the values and engineering dicisions used in this specification which are not documented in the already cited analyses. Examples are: 2.01 B. ASTM C150 Type II cement. 2.01 C. Size 7 aggregate 2.01 E2. 15 % silica fume 2.01 F3 Size of steel fiber 2.02 B. Nozzel slump needs to be identified.	The selection of the materials and the numerical values used in this specification (Wet Process Shotcrete) and the Dry Process Shotcrete Specification are normal and acceptable engineering decisions, and are correct. An analysis will be prepared to document these decisions, to support the engineering traceability. This analysis will explain the selection but will not change the content of these specifications. Therefore the analysis will be made subsequent to the specifications and will not have an impact to these Specifications.	Accept JWP 11/2/94

21. REVIEWED BY:	22. RESPONSE BY:
John W. Peters [signature] 11/1/94 Print Name and Sign Date	Gerald W. Keifer [signature] 11/1/94 Print Name and Sign Date

QAP-3-2

0100 (Rev. 04-13-94)

14. DESIGN PACKAGE TITLE	15. DATE
Quality Affecting Portion of Package 2C (5th Release)	10/31/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
21	BABEAB000-01717-6300--03363	Section 2.02 B does not completely address ACI 506 2-4, Section 1.6.4.2, regarding panel construction. The dimensions recommended in the ACI Standard are 762 x 762 mm with the third dimension being equal to the dimension of the structure, but not less than 76 mm. Also it recommends providing the same reinforcement as in the structure in at least half of the panel to test for proper embedment of reinforcing steel. (WS) Retyped for legibility Section 2.02 B does not completely address ACI 506 2-4, Section 1.6.4.2, regarding panel construction. The dimensions recommended in the ACI Standard are 762 x 762 mm with the third dimension being equal to the dimension of the structure, but not less than 76 mm. Also it recommends providing the same reinforcement as in the structure in at least half of the panel to test for proper embedment of reinforcing steel. (WS) JWP 12/2/94	ACI 506.2-4 1.6.3.2 specify that construction panel are 457mm X 457mm. For the preconstruction test panel they state that 762mm X 762mm are to be used and that reinforcement as in the structure is to be in at least one half of the panels. The shotcrete design does not contain reinforcement (deformed bar or Welded wire fabric) and the use of 460mm X 460mm has been judged adequate for the preconstruction testing based on the construction test panels size ,lack of obstructive reinforcement and embedments and will provide the number of sample cores. This will be addressed in an analysis. JWK 11/4/94	Accept JWP 11/4/94

21. REVIEWED BY:	22. RESPONSE BY:
John W. Peters [signature] 11/3/94 Print Name and Sign Date	Jerald W. Keifer [signature] 11/4/94 Print Name and Sign Date

QAP 3.2

CRWMS/M&O

Design Verification Record (Continued)

(13.) WBS: 1.2.6
QA: QA
Page: 6 Of: 18

14. DESIGN PACKAGE TITLE	15. DATE
Quality Affecting Portion of Package 2C (5th release)	10/31/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
5	BABEAB000-01717-6300-03363. 1.05.A	Reword to read "Shotcrete: Portland Cement concrete (in accordance with ACI 506.2), pneumatically...."	~~agree will incorporate~~ JWK 11/4/94 Disagree - this addition would make the shotcrete to be in full compliance with ACI 506. The selected curing of shotcrete is not in conformance with ACI 506, but is in conformance to tunnel lining practice recommended by [illegible] organization. Will discuss curing in subsequent analysis JWK 11/4/94	~~Accept~~ MJ ~~11/4/94~~ MJ 11/4/94 11/4/94

21. REVIEWED BY:	22. RESPONSE BY:
Matthew J. Gomez [signature] 10/31/94	[signature] 11/1/94
Print Name and Sign / Date	Print Name and Sign / Date

QAP 3.2

DSOR (Rev. 04/13/94)

CRWMS/M&O

Design Verification Record (Continued)

(13.) WBS: 1.2.6
QA: QA
Page: 14 of: 18

14. DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (5th release)

15. DATE
10/31/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
13	BABEAB000-01717-6300-03362. 1.05.A	Reword to read "Shotcrete: Portland Cement concrete (in accordance with ACI 506.2), pneumatically...."	Disagree - this addition would make the Shotcrete to be in full compliance with ACI 506. The selected curing of Shotcrete is not in conformance with ACI 506, but is in conformance to tunnel lining practice recommended by Technical organizations. Will discuss the curing further in subsequent analyses.	Accept MJG 11/4/94 MJG 11/4/94 11/4/94

21. REVIEWED BY:
Matthew J. Gomez
Print Name and Sign
11/2/94
Date

22. RESPONSE BY: Gerald W. Kester
Gerald W. Kester
Print Name and Sign
11/4/94
Date

0508 Rev 04/13/94

YMP-110-R3
06/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C2 (part b) - Drawing Inputs List Draft/Revision: N/A ☑ Q

Document Number: See page 2 of DAR Governing Document: Date: ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
#17	DIE For Package 2c	ESFDR requirement 3.2.1.1A is identified in the Determination of Importance Evaluation for Package 2C as a source for DIE requirements 6,7,8,and 11. This is a requirement for surface facilities and should not flow down to Package 2C. Please delete references to ESFDR requirement 3.2.1.1A from the DIE. (6.2 Review Criteria 3.7, 3.9.& 3.11)	Agree. Will update ESFDR references in Revision 03 of the 2C DIE. (BABOOOOOO-01717-2200-00005) 10/3/94	Accept 10/4/94

5. Comments John F Pelletier Date: 10/2/94

Exhibit YLP-31.2-AMA.6

YMP-110-R3
08/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C2 (part b) - Drawing Inputs List Draft/Revision: N/A ☑ Q

Document Number: See page 2 of DAR Governing Document: _____ Date: _____ ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
#16	DIE FOR PACKAGE 2C	ESFDR requirement 3.2.2.1.J1 is identified in the Determination of Importance Evaluation for Package 2C as a source for DIE requirement 11. This is a requirement for surface facilities and should not flow down to Package 2C. Please delete references to ESFDR requirement 3.2.2.1.J1 from the DIE. (6.2 Review Criteria 3.7, 3.9.& 3.11)	Agree. Will update ESFDR references in Revision 03 of the 2C DIE. (BAB000000-01717-2200-00005) Dealer [signature] 10/3/94	Accept [signature] 10/4/94

5. Comments John F Pelletier Date: 10/2/94

Exhibit YLP-31.2-AMA.6

CRWMS/M&O

90% Design Review - Design Package 2C

Document Review Record (Continued)

WBS: 1.
QA:
Page: 2 Of: 1

DOCUMENT TITLE	REVISION	DATE	DOCUMENT IDENTIFIER
Design Package 2C Review	N/A	N/A	N/A

COMMENT NO.	SECTION/ PARAGRAPH	COMMENTS	RESPONSE	ACCEPT REJECT
1 General: Specs 2C 264		☒ Mandatory - Requirement # N/A ☐ Non-Mandatory (No Response Required) General - Specifications do not seem to follow the same format, in all cases. They do not follow the format in QAP-3-8, however, the specifications do seem to follow the general format described in the MGDS Design Process Guidelines Manual. However, many of the specifications are missing a section titled, "Field Quality Control." Recommend that you (1) adopt a format and stick to it; and (2) that you review QAP-3-8 and revise the format if you do not intend on using it.	Agree: ESF Project Specifications Sections will use CSI Specs. format which is spelled out in QAP-3-8, Rev. 4. Field Quality Control is in Section 01400 of Division I. A new Section 01000 will define Divisions I - 16. 7/5/94	Accept 6/8/94 6/9/94 See Attach Comment Evaluation

REVIEWED BY: S. DANA [signature] Printed Name & Signature — 5/23/94 Date

RESPONSE BY: Robert A. Skorseth [signature] Printed Name & Signature — 5/25/94 Date

CRWMS/M&O

Document Review Record
(Continued)

WBS: 1.2.6
QA: QA
Page: 3 Of: 40

DOCUMENT TITLE	REVISION	DATE	DOCUMENT IDENTIFIER
Various Specs	N/A	N/A	Various

COMMENT NO.	SECTION/ PARAGRAPH	COMMENTS	RESPONSE	ACCEPT/ REJECT
2C 093	N/A	☒ Mandatory - Requirement # N/A ☐ Non-Mandatory (No Response Required) Certain Specs mix QA and QC. Putting a requirement in a QA section that does not require QA involvement presents an opportunity for un-necessary QA involvement and a waste of Project funds. Examples are: Sect 14553 – Paragraph 1.04B " 15061 – " 1.04C " 15160 – " 1.04C " 15191 – " 1.04C " 15261 – " 1.04C " 15300 – " 1.04B,C,D " 15371 – " 1.04C,D " 15452 – " 1.04C " 05121 – " 1.04C,D,E,F " 13430 – " 1.04C,D " 13430 – " 1.04C,D All of these paragraphs should be removed from the QA section 1.04	QA requirements will be clearly identified as such and separated from non QA requirements.	ACCEPT JAG 6/1/94

REVIEWED BY: B. Varna
Jaime A. Gonzalez — Printed Name & Signature
5/20/94 — Date

RESPONSE BY: ROBERTS STAUNDERS
Printed Name & Signature
5-27-94 — Date

OAP-3-1

TRW Environmental
Safety Systems Inc.

101 Convention Center Drive, P110
Las Vegas, NV 89109
702.794.1800

WBS 1.2.6
QA: N/A

Contract #: DE-AC01-91RW00134
LV.ESSB.GH.12/94-250

QA RECEIVED

DEC 2 7 1994

December 20, 1994

Mr. Robert M. Nelson, Jr.
Acting Project Manager
Yucca Mountain Site Characterization Project
U. S. Department of Energy
P. O. Box 98608
Las Vegas, Nevada 89139-8608

Attention: R. E. Spence

Dear Mr. Nelson:

Subject: Amended Response to CAR YM-94-065 (SCP: N/A)

We are amending portions of our original response to the subject CAR. The following amendment is required as a result of our review of the current design control process. We have decided that the discipline checking and inter-discipline reviews do not necessarily have to be performed after the 90% design review. Discipline and inter-discipline review steps are to be performed after all design inputs (i.e. analyses, DIEs etc.) are approved.

Root Cause

Revise Item No. 3 to read, "The checking process (and interdiscipline review) in the current Design Control Process precedes the 90% Design Review. Many discrepancies being identified indicate they are a result of incorporating 90% design review comments. Additionally, design inputs were being generated in parallel with design specifications and drawings."

Action to Preclude Recurrence

Revise to read, "The M&O is reviewing and revising the current design control process to incorporate lessons learned from the various audits and surveillance which have just concluded. Emphasis is being placed on improving the discipline and inter-discipline review steps. The revised design control process will require that design inputs (analyses and the DIE) be approved prior to the initiation of checking and interdiscipline reviews taking place. All designers will be trained to the revised process upon approval of necessary procedure revisions. Until the process is formally changed, we will follow the process outlined in the procedures."

If you have any questions, please contact Alden Segrest at 794-1924.

Sincerely,

MD Voyle for

L. Dale Foust
Assistsant General Manager, Nevada Site
Technical Project Officer

cc:

G. S. Abend, M&O, Las Vegas, NV
G. Heaney, M&O, Las Vegas, NV
P. G. Jones, M&O, Las Vegas, NV
J. L. Naaf, M&O, Las Vegas, NV
R. P. Ruth, M&O, Las Vegas, NV
R. M. Sandifer, M&O, Las Vegas, NV
R. S. Saunders, M&O, Las Vegas, NV
A. M. Segrest, M&O, Las Vegas, NV
R. E. Spence, YMSCO, Las Vegas, NV
D. Sult, QATSS, Las Vegas, NV
Project File No. 102.01.1
RPC

LDF:GH:sas

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

8 CAR NO. _____
PAGE 1 OF 7
QA

CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)

EVALUATION OF AMENDED RESPONSE TO CARS YM-94-065 AND YM-94-072

On December 27, the Office of Quality Assurance received the following letters from the M&O:

1. LV.ESSB.GH.12/94-889 dated December 20, 1994 from L. Dale Foust to Robert M. Nelson, Jr.

2. LV.ESSB.GH.12/94-890 dated December 20, 1994 from L. Dale Foust to Robert M. Nelson, Jr.

3. LV.ESSB.GH.12/94-250 dated December 20, 1994 from L. Dale Foust to Robert M. Nelson, Jr.

Letters LV.ESSB.GH.12/94-889 and LV.ESSB.GH.12/94-890 dated December 20, 1994 from L. Dale Foust to Robert M. Nelson, Jr. state that during the verification and QAP 6.2 review of several design package 2C products, review comments were made that indicate additional extent of deficiency identified in CAR YM-94-065 and YM-94-072. These letters also state that these deficiencies are being tracked via letter LV.ESSB.RMS.12/94-877 and that revisions are necessary to supporting analyses. Letter LV.ESSB.GH.12/94-250 revises the root cause and actions to preclude recurrence indicating that changes are being made to the design control process. Based on this supplemental information, YMQAD needs further clarification to adequately evaluate corrective actions for CARs YM-94-065 and YM-94-072.

1. Letters LV.ESSB.GH.12/94-889 and LV.ESSB.GH.12/94-890 state that the revisions will be completed by February 6, 1995. However, letter LV.ESSB.RMS.12/94-877 indicates that revision of some analyses will not be complete until March 1995. It is unclear what exactly the M&O considers the extent of deficiency for analyses and what the final completion date is for these additional corrective actions.

2. CAR YM-94-065 identifies deficiencies not only related to analyses, but also to drawings and specifications. The M&O committed to rechecking and correcting all Design Package 2C products. Letter LV.ESSB.RMS.12/94-877 identifies several specifications and drawings that need to be revised. Does the M&O consider these items as part of the extent of the deficiency of CAR YM-94-065?

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

8 CAR NO. _____
PAGE ____ OF ____
QA

CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)

3. Letter LV.ESSB.GH.12/94-250 provides an amended response to CAR YM-94-065 but does not provide any due dates for the proposed actions or ask for an extension. The corrective action due dates on the CAR indicate completion by 1/31/95. This appears to be inconsistent with the information provided in M&O letter LV.ESSB.RMS.12/94-877 and M&O letter LV.ESSB.GH.12/94-889.

4. The amended response includes a new completion date of March 15, 1995; does the M&O need an extension for completion of corrective action until this date?

Please provide the additional information within 10 working days. If you have any questions please contact Richard Powe at 794-7749.

R E Powe
Richard E. Powe

1/10/95
Date

ORIGINAL
THIS IS A RED STAMP

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

8 CAR NO.: YM-94-072
PAGE: 1 OF 2
QA

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
OCRWM QARD, DOE/RW-0333P, Revision 01	YMP-94-01

3 Responsible Organization	4 Discussed With
M&O	J. Pye/S. Bonabien

5 Requirement:

1) QARD, Section 3.2.1.B states: "Design input shall be specified and approved on a timely basis and to the level of detail necessary to permit the design work to be carried out in a correct manner that provides a consistent basis for making design decisions, accomplishing design verification, and evaluating design changes." (Continued on next page)

6 Adverse Condition:

A lack of documentation exists describing the rationale for making assumptions and selecting data.

Discussion:

Examples of the lack of documentation are:

Structure Steel Sets Analysis, BABEAB000-01717-0200-0002, Revision 00:

- No rationale for selection of a conservative "rock raveling" value in Attachment I, Page I-1.
- No rationale for the selection of conservative "Rock Conditions" as presented in Attachment 1, Table 3.
- No rationale for selecting conservative seismic mean peak horizontal acceleration (0.37) as presented in Attachment II, Table 1.

9 Does a Significant Condition Adverse to Quality exist?	10 Does a stop work condition exist?	3 Response Due Date:
Yes___ No X If Yes, Check One: ☐A ☐B ☐C ☐D ☐E	Yes___ No X ; If Yes - Attach copy of SWO If Yes, Check One: ☐A ☐B ☐C	20 Working Days From Issuance

11 Required Actions: ☒ Remedial ☒ Extent of Deficiency ☒ Preclude Recurrence ☐ Root Cause Determination

12 Recommended Actions:
Revise the Structural Steel Sets Analysis to document the rationale for the selection of appropriate conservative data and assumptions.

7 Initiator	14 Issuance Approved by:
William R. Sublette 8-3-94	QADD for Date 8/8/94
15 Response Accepted	16 Response Accepted
QAR Date 9/12/94	QADD for Date 9-14-94
17 Amended Response Accepted	18 Amended Response Accepted
QAR Date	QADD Date
19 Corrective Actions Verified	20 Closure Approved by:
QAR Date	QADD Date

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

8 CAR NO.: YM-94-072
PAGE: 2 OF 2
QA

CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)

5 Requirements (continued)

2) QARD, Section 3.2.2G states: "Design documents shall be sufficiently detailed as to purpose, method, assumptions, design input, references, and units such that a person technically qualified in the subject can understand the documents and verify their adequacy without recourse to the originator." (Also see M&O QAP-3-9, Revision 3, Attachment I, Paragraph 10)

RESPONSE TO CAR NO. YM-94-072

Remedial Action:

Structural Steel Sets Analysis, BABEA0000-01717-0200-00002, Revision 00 will be revised and checked to ensure explanations supporting the engineering judgment used in the preparation of the analysis are present.

No deficiency exists for Item 3. The ESFDR contains the 0.37g as a requirement for ESF Design.

Extent of Deficiency:

The investigative actions performed by J. Pye and S. Bonabian and the conclusions reached regarding Structural Steel Sets Analysis for response to CAR YM-94-072 are as follows:

Item 1: Engineering judgment was used to reduce the in situ bulk density from 137 lbs/cu ft to 120 lbs/cu ft as a result of the effects of disturbance during tunneling which is a reasonable assumption and consistent with typical published ranges of bulk densities. This was explained in the analysis as a 12% reduction in bulk density.

Item 2: A load factor was identified from a standard classical reference - "Rock Tunneling with Steel Supports", 1946 by Proctor and White, published by Commercial Shearing Inc., by the Geotechnical LDE as indicated in Attachment 1 of the Structural Steel Sets Analysis BABEAB000-01717-0200-00002.

The load factor of 0.25B with the corresponding description, "Massive moderately jointed" with a propensity for loads to change erratically from point to point were selected on the basis of engineering judgment and field inspection of trench NRT-1, taking into account the geomechanical properties of the Pre-Rainier Mesa material, method of excavation, excavation rate and support installation capabilities of the TBM. Also taken into consideration was the fact that the referenced material is based on 50 year old tunneling technology and practice and as such is not representative of the rapid excavation and support technology employed by the YMP TBM system. The Structural Steel Sets Analysis BABEAB000-01717-0200-00002, Attachment I has been revised to include an explanation based on the above.

Item 3: The use of 0.37g is consistent with the ESFDR seismic design criteria. No deficiency exists.

Review indicates that the deficiency does not extend to the 2C Early Release products.

Corrective Action to Preclude Recurrence:

Assumptions and data used as input to design analyses based on engineering judgment will be explained in sufficient detail to clarify any subjective assessments, to the extent that a person technically qualified in the subject can understand the documents and verify their adequacy without recourse to the originator.

A documented training session will be conducted for all subsurface designers that are or will be involved in the preparation of analysis stressing the importance of providing the basis for assumptions and selecting data. Refer to QAP-3-9 Attachment I Item 7 requirements.

Responsible Individual: Bob Saunders
Date of Completion: 9/30/94

Alden M. Segrest, Manager
MGDS Development

Date 8/31/94

Interoffice Correspondence
Civilian Radioactive Waste Management System
Management & Operating Contractor

TRW

TRW Environmental
Safety Systems Inc.

WBS:1.2.6
QA: N/A

Subject:
Completion of 2C Package Commitments
(SCP:N/A)

Date:
December 14, 1994
LV.ESSB.RMS.12/94-877

From:
R. M. Stambaugh
RMStambaugh

To:
See Below

cc:
G. Heaney, TES3/423
J. L. Naaf, TES3/423
R. M. Stambaugh, TES3/423
LVRPC

Location/Phone:
TES3/530
(702) 794-7001

In attached commitments (and support documentation if available) are being forwarded to you for completion of required actions. These tasks are being tracked by scheduled completion date. Please review these and advise me when tasks have been completed or if changes to the information are needed. We have tried to be thorough in our search of past commitments, but if you know of any additional ones - please let me know so that it can be properly tracked.

Attachment
(1) Commitments
(2) Support Documentation

Distribution:

L. R. Morrison, TES3/423
J. H. Pye, TES3/423
D. J. Rogers, TES3/423
W. J. Reed, TES3/423
R. S. Saunders, TES3/423
M. Taylor, TES3/423
J. M. Taipale, TES3/423

RMS:cam

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U.S. DEPARTMENT OF ENERGY
WASHINGTON, D.C.

8. CAR NO. YM-94-072
PAGE 1 OF 1
QA

CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)

Amended Corrective Action to Preclude Recurrence

A lessons learned program will be instituted to address that "Assumptions and data used as input to design analysis based on engineering judgement will be explained in sufficient detail to clarify any subject assessments, to the extent that a person technically qualified in the subject can understand the documents and verify their adequacy without recourse to the originator."

This action will be completed by March 15, 1995.

12/20/94

Alden M. Segrest, Manager Date
MGDS Development

12/20/94 [illegible] 12/20/94

Assigned To	Task	Status	Estimated Completion
Rogers/Kennedy	Revise drawings 40120, 40104, 40100, & 40110 to incorporate QATSS QAP 6.2 comments from Package 2C (early release - see also QA portion of package 2C (2nd release)	Working	3/95
Reed	QAP 6.2 review comments by B. Verna on Package 2C 3a p. 8 of 8 to revise drawings 43040 & 43050	Will prepare FCR	2/95
Rogers/Jurani	Revise drawing BABFAD000-01717-2100-45601 to reflect matrix equivalent for note 2, delete note 6 and add ref. to note 1 "for package 2C excavation only."		6/95
Rogers/Jurani	Revising drug BABFAD000-01717-2100-45607 to reflect only one detailed elbow.		6/95
Rogers/Kennedy	Will add note to drawing 40116 on next revision.		3/95
Morrison	ESFDR Rev 1, App. B update. BFD will be revised to match appendix B after approval of ESFDR Rev. 1 Per package 1C revision comment 102.		1/95
Morrison	BFD requirement 7.6.1.8.D.5 to have two or more fire detection devices activate before alarm system activates will be re-evaluated when this BFD section is finalized Comment 2C 107.		1/95

Reed	Comment #2C 128 by the end of August 94 the new load flow data and list will be completed.		8/95
Taylor	QA affecting portion of package 2C (4th release) revise per comments #3, 4, 5, & 7 by W. Hunt; comments #6, 10, 11, 15 & 16 by M. Gomez; and comments #7, 13, 14, 15, 16, 18 & 23 by John Peters.		3/95
Pye	QA affecting portion of package 2C (4th release) revise per comment #28 by J. Peters.		1/95
Rogers/Jurani	QAP 6.2 review comments by B. Verna on package 2C3C to revise drawing 45608		6/95
Taylor/Becerra	QAP 6.2 review comments by B.Verna on package 2C3C to revise drawing 41152.		6/95
Pye	Revise BABEAB000-01717-0200-00010 to delete the callout for size of the steel sets per QA portion of package 2c (3rd release) comments #4 and #8 by J. Clark.		3/95
Rogers	Revise BABEAB000-01717-0200-00009 per QA Portion of Package 2C (3rd release) comment #5 by J. Clark.		3/95
Rogers	Generate a new analysis which documents the rationale for specific values selected in the following two (2) specifications: BABEAB000-01717-6300-03362 and -03363. See QA affecting portion of package 2C (5th release) revise per comments 8 & 21 by John Peters and # 5 & # 13 by M. Gomez.		3/95
Morrison	Update ESFDR ref. in 2C DIE BAB000000-01717-2200-0005 (3.2.1.1A, 3.2.2.1.J1)		1/95

Saunders	Comment # 2C 264 (Steve Dana). Design Process guidelines manual calls out need for Field Quality Control Section in all construction specs. This is not being done in all cases. A/E will review construction specs and add Field QC Section as necessary. Will develop a policy for constant application.		3/95
Saunders	The A/E will review all specs. for non QA entries contained in the QA section of specs. Non QA entries will either be separated into a new section or a subsection of the existing QA section with an annotation that clearly identifies the entries as non QA. Specification revisions will then be made by FCR. Comment 2C 93.		3/95
Taipale	Revise typo in FCR 94/141, Item 63 to read ST128	Need CR to fix	4/95
Taipale	Revise drawings and specs. to reflect revised DIE provisions regarding quantified limits. Need more specifics on amounts allowed.		Pending

CRWMS/M&O

Design Verification Record (Continued)

(13.) WBS: 1.2.6
QA: QA
Page: 2 Of: 2

14 DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (2nd release)

15. DATE
09/22/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
1	General	Add note to drawings stating that borehole information, geological information, and fault trace information is shown for reference purposes only and is neither a design input nor part of the design.	Agree to add the following note to the North Ramp layout drawings (Note will be added to future revisions of dwgs 40100, 40104, 40110, and 40120, which have already been approved): ANY BOREHOLE INFORMATION, GEOLOGICAL INFORMATION, OR FAULT TRACE INFORMATION SHOWN IS FOR REFERENCE PURPOSES ONLY AND IS NEITHER DESIGN INPUT OR PART OF THE DESIGN.	Accept FDA 9-26-94

21 REVIEWED BY:
Fredrick C. Arth — Print Name and Sign — 9-23-94 Date

22. RESPONSE BY: W. R. KENNEDY
R Kennedy — Print Name and Sign — 9-25-94 Date

L 9-19-94

YMP-110-R3
08/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT/ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
1#	N/A - Drawing	DRAWING BABEA000-01717-40120, REV 01 - "NGR-2C" should be "NRG-2c" (Review Criteria 3.7/3.11) (See also #2 and #3)	1. Agree -- The Department Manager and the QA Manager will initial and date this editorial correction on the drawing.	Accept RJH 9/15/94
2#	N/A - Drawing	DRAWING BABEA000-01717-2100-40120, REV 01 THE SOURCE DOCUMENTS WHICH WERE USED TO DETERMINE THE LOCATIONS OF THE BOREHOLES SHOULD BE LISTED AS DESIGN INPUT ON THE DESIGN INPUT SUBJECT LIST SDT-91.3/94 (Review Criteria 3.7/3.11)	2. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	Accept RJH 9/15/94
3#	N/A - Drawing	DRAWING BABEA000-01717-2100-40104, REV. 01 THE SOURCE DOCUMENTS WHICH WERE USED TO DETERMINE THE BOREHOLE PROJECTIONS SHOULD BE LISTED AS DESIGN INPUT ON THE DESIGN INPUT SUBJECT LIST SDT 91.3/94 (Review Criteria 3.7/3.11)	3. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	Accept RJH 9/15/94

5. Comments Donald Twiss Date: 9/13/94

YMP-110-R3
08/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT

DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
4#	N/A-DRAWING	DRAWING BABEAD000-01717-2100-40100, REV 01 THE SOURCE DOCUMENTS WHICH WERE USED TO DETERMINE THE LOCATIONS, ELEVATIONS AND DEPTHS OF BOREHOLES SHOULD BE LISTED AS DESIGN INPUT ON THE DESIGN INPUTS LIST. (REVIEW CRITERIA 3.7/3.11)	4 Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	Accept [illegible] 9/15/94
5#	N/A-DRAWING	DRAWING BABEAD000-01717-2100-40110, REV 01 CORRECT BOREHOLE NUMBERS AS FOLLOWS: (SEE ALSO CAR YM-94-062) CHANGE / TO NGR-2A / NRG-2A NGR-2D / NRG-2D NGR-2 / NRG-2 NGR-2C / NRG-2C NGR-2B / NRG-2B (REVIEW CRITERIA 3.7/3.11)	5 Agree -- The Department Manager and the QA Manager will initial and date this editorial correction on the drawing.	Accept [illegible] 9/15/94

5. Comments [illegible] Date: 9/13/94

Exhibit YLP-31.2-AMA

YMP-110-R3
06/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
6	N/A - DRAWING	DWG BABEAD000-01767-2100-40110, 1200. THE SOURCE DOCUMENTS WHICH WERE USED TO DETERMINE THE BOREHOLE LOCATION, DEPTH AND DIRECTION SHOULD BE LISTED A DESIGN INPUT ON THE DESIGN INPUT LIST. (REVIEW CRITERIA 3.7/3.11)	6 Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	Accept RLH 9/15/94
7	N/A	NO COMMENT	7. NO RESPONSE	Accept RLH 9/15/94

5. Comments David Q Turner Date: 9/13/94

YMP-110-R3
06/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
8*		BABAED000-01717-2100-40100-01 Notes 5 reference SNL Drawing No. 88-60-09 as the source for geologic and structural information. This drawing should be listed as a design input on the input list or in the North Ram Layout Calculation. Review Criteria 3.7 and 3.11	8. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	Accept RRH 9/15/94
9*		BABAED000-01717-2100-40100-01 Note 5 references USGS Open File Report 84-494 the source for fault trace locations. This report should be listed as a design input on the input list or in the North Ramp Layout Calculation. Review Criteria 3.7 and 3.11	9. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	Accept RRH 9/15/94

5. Comments ROBERT HOWARD Date: 9/14/94

YMP-110-R3
06/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
D#		BABAED000-01717-2100-40100-01 Note 6 identifies the North Ramp as QA-1 and QA-2. The DIE for Package 2C identifies the North Ramp as QA-1, QA-2, and QA-5. Review criteria 3.6	10. Disagree -- This drawing only addresses that portion of the ESF Package 2C design that relates to the spatial positioning of the ramp. QA classifications governing this aspect of the design are identified in the DIII as being QA 1 and QA 2. The DIII identifies classification QA-5 as pertaining to permanent function ground support. This element of the design will be addressed in other 2C design documents that are not included in this review but that are included in the attached list.	Accept Kelt 9/15/94
II K		BABAED000-01717-2100-40104-01 Notes 5 reference SNL Drawing No. 88-60-09 as the source for geologic and structural information. This drawing should be listed as a design input on the input list or in the North Ramp Layout Calculation.	11. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	Accept Kelt 9/15/94

5. Comments ROBERT HOWARD Date: 9/14/94

YMP-110-R3
06/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
12 *		BABAED000-01717-2100-40104-01 Notes 5 &6 reference SNL Drawing No. 88-60-09 as the source for geologic and structural information. This drawing should be listed as a design input on the input list or in the North Ram Layout Calculation. Review Criteria 3.7 and 3.11	12. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that *was* used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	accept RLH 9/15/94
13 *		BABAED000-01717-2100-40104-01 Note 6 references USGS Open File Report 84-494 the source for fault trace locations. This report should be listed as a design input on the input list or in the North Ramp Layout Calculation. Review Criteria 3.7 and 3.11	13. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that *was* used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	accept RLH 9/15/94

5. Comments Robert Howard Date: 9/14/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
14*		BABAED000-01717-2100-40110-01 Note 9 identifies the North Ramp as QA-1 and QA-2. The DIE for Package 2C identifies the North Ramp as QA-1, QA-2, and QA-5. Review criteria 3.6	14. Disagree -- This drawing only addresses that portion of the ESF Package 2C design that relates to the spatial positioning of the ramp. QA classifications governing this aspect of the design are identified in the DIE as being QA-1 and QA-2. The DIE identifies classification QA-5 as pertaining to permanent function ground support. This element of the design will be addressed in other 2C design documents that are not included in this review but that are included in the attached list.	Accept RH 9/15/94
15*		BABAED000-01717-2100-40110-01 Note 4 references SNL Drawing No. 88-60-09 as the source for geologic and structural information. This drawing should be listed as a design input on the inputs lists or in the North Ramp Layout Calculation. Review Criteria 3.7 and 3.11	15. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	Accept RH 9/15/94

5. Comments ROBERT HOWARD Date: 9/14/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
16 K		BABAED000-01717-2100-40120-01 Note 8 identifies the North Ramp as QA-1 and QA-2. The DIE for Package 2C identifies the North Ramp as QA-1, QA-2, and QA-5. Review criteria 3.6	K. Disagree -- This drawing only addresses that portion of the ESF Package 2C design that relates to the spatial positioning of the ramp. QA classifications governing this aspect of the design are identified in the DIE as being QA-1 and QA-2. The DIE identifies classification QA-5 as pertaining to permanent function ground support. This element of the design will be addressed in other 2C design documents that are not included in this review but that are included in the attached list.	Accept RJH 9/15/94
17 K		BABAED000-01717-2100-40120-01 Note 5 references SNL Drawing No. 88-60-09 as the source for geologic and structural information. This drawing should be listed as a design input on the input list or in the North Ram Layout Calculation. Review Criteria 3.7 and 3.11	A. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings	Accept RJH 9/15/94

5. Commenter ROBERT HOWARD Date: 9/19/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C - Drawings and Specifications Draft/Revision: N/A ☑ Q

Document Number: N/A Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
18*		BABAED000-01717-2100-40120-01 Note 5 references USGS Open File Report 84-494 the source for fault trace locations. This report should be listed as a design input on the input list or in the North Ram Layout Calculation. Review Criteria 3.7 and 3.11	18. Disagree -- The geological information shown and referenced by the note on the drawing was not used as design input. The ESF Package 2C North Ramp layout design was developed using the design inputs that are included on the Inputs Lists. Refer to Input No.1 for very explicit definition of geologic information that was used in developing the design. The geological information shown and referenced by the note on the drawing is not part of the design; it is provided as reference information only. A note to this effect will be added to future revisions of this and similar drawings.	Accept RLH 9/15/94
19*		BABAED000-01717-2100-40104-01 Note 10 identifies the North Ramp as QA-1 and QA-2. The DIE for Package 2C identifies the North Ramp as QA-1, QA-2, and QA-5. Review criteria 3.6	19. Disagree -- This drawing only addresses that portion of the ESF Package 2C design that relates to the spatial positioning of the ramp. QA classifications governing this aspect of the design are identified in the DIE as being QA-1 and QA-2. The DIE identifies classification QA-5 as pertaining to permanent function ground support. This element of the design will be addressed in other 2C design documents that are not included in this review but that are included in the attached list.	Accept LRH 9/15/94

5. Comments ROBERT HOWARD Date: 9/14/94

YMP-110-R3
08/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C3 (part a) - Drawings and Specifications Draft/Revision: See Page 2, 3, 4 of DAR ☐ Q

Document Number: See Page 2, 3, 4 of DAR 1189 Governing Document: N/A Date: ☑ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
	DWG 43030	TO HELP LOCATING THE UTILITIES SHOWN IN THIS DRAWING THE SURVEY STATION SHOULD BE MARKED AT MATCH LINE	1. THE MATCH LINE IS NOT AT STATION 00+00 AS SHOWN ON DWG 43031. THE INSTRUMENTATION IN THIS AREA IS SHOWN ON DWG. 43050 DETAIL 1. W. REGD 10/12/94.	ACCEPT JAG RJV 10/12/94
	DWG 43040	SHOW STATION FOR ALCOVE LOCATION	2. AGREE WILL ADD AT NEXT REVISION TO DRAWING. W.REGD 10/12/94 INFORMATION WILL BE INDICATED ON AS-BUILT TO BE ADDED AT NEXT REVISION. (W)	ACCEPT JAG RJV 10/12/94
	DWG 43050	SHOW LOCATION WHERE DETAIL 3 WILL BE INSTALLED	3. DETAIL 3 IN NOT USED AT THIS TIME. W. REGD 10/12/94. DETAIL WILL BE INDICATED ON AS-BUILT TO BE REMOVED ON NEXT REVISION (W)	ACCEPT JAG RJV 10/12/94
	DWG 44010	STATIONS DO NOT SEEM TO MATCH LAYOUT FOR EXC OF NORTH RAMP	4. STATION NUMBERS WERE VERIFIED AGAINST EXCAVATION DRAWINGS AND DETERMINED TO BE CORRECT. W.REGD 10/12/94	ACCEPT JAG RJV 10/12/94
	SEVERAL DWGS	DWGS # 44020 AND # 44032 THRU 44034 SEEM TO BE MISSING FROM THIS PACKAGE	5. DRAWINGS WERE MISSING FROM ORIGINAL SUBMITTAL AND WILL BE INCLUDED IN NEXT SUBMITTAL W.REGD 10/12/94	ACCEPT JAG RJV 10/12/94
	DWGS 45301 45302 45303	IT IS NOT VERY CLEAR WHICH ARE THE LOCATIONS FOR THESE UTILITIES	6. LOCATIONS ARE GIVEN AS NOTES TO INSTALL EVERY 60 METERS ETC. THIS IS DONE TO PROVIDE THE CONSTRUCTOR WITH THE FLEXIBILITY HE NEEDS TO PROCEED IN AN EXPEDITIOUS MANNER.	ACCEPT JAG RJV 10/12/94

5. Comments B. J. Verna Date: 10/5/94

DOCUMENT TITLE	REVISION	DATE	DOCUMENT IDENTIFIER
MINING ANALYSIS Vol 1	0B	5-2-94	B00FA000-01717-0200-00001

COMMENT NO.	SECTION/ PARAGRAPH	COMMENTS	RESPONSE	ACCEPT/ REJECT
1 2C 10	11/11.3 p 15	☑ Mandatory - Requirement # N/A ☐ Non-Mandatory (No Response Required) It appears that the design input is a pass through from TCO to the A/E. ESFDR Appendix B is suppose to convey design needs of the PI's. Using direct pass through could make it difficult to trace the design input for test. This could create a traceability problem and may raise some concern. Why not develop approach that allows changes to ESFDR Appendix B as means to transmit PI facility requirements.	2C - 102 L.R. MORRISON WE ARE CURRENTLY ATTEMPTING TO IMPLEMENT THE PROCEDURE YOU SUGGEST. THE SYSTEMS REQUIREMENTS PEOPLE (SAM RINDSKOPF) ARE ISSUING A REQUEST TO THE TCO TO UPDATE APPENDIX B OF THE ESFDR. WHEN THE ESFDR IS REVISED, THE BFD WILL BE UPDATED AS REQUIRED TO MATCH. HOWEVER, AS ESFDR APPENDIX B IS NOT CURRENTLY UP-TO-DATE WE FEEL IT IS PROPER TO USE TCO LETTERS DIRECTLY TO INSURE INCORPORATION OF TCO REQUIREMENTS UNTIL THE BFD IS UPDATED. THIS PROCEDURE WILL LIKELY BE FOLLOWED IN THE NEAR FUTURE AS IT IS UNLIKELY THAT REVISIONS TO THE ESFDR CAN BE MADE IN THE VERY SHORT TIME REQUIRED TO SUPPORT BFD AND DESIGN PACKAGE SCHEDULES.	Accept JRG 6/16/94

REVIEWED BY: Jaime Gonzalez (Printed Name & Signature) 5/23/94 (Date)

RESPONSE BY: L.R. Morrison (Printed Name & Signature) 5-26-94 (Date)

QAP-3-1

HNK

DOCUMENT TITLE	REVISION	DATE	DOCUMENT IDENTIFIER
ELECTRICAL ANALYSIS — 90% REVIEW PACKAGE 2C	00	05-16-94	BABFAA000-01717-0200-00001

COMMENT NO.	SECTION/ PARAGRAPH	COMMENTS	RESPONSE	ACCEPT/ REJECT
2C 128	GENERAL	WHERE ARE THE UPDATED LOAD FLOW ANALYSIS ETC, WHICH I BELIEVE SHOULD BE PART OF THE ~~ANALYSIS~~ PACKAGE. THIS COMMENT IS RELVANT TO SECTION 9 ON PAGE 4 OF 7. (MANDATORY)	THE M&O IS IN THE PROCESS OF UPDATING THE PROJECT LOAD FLOW DATA INTO A COMPUTER SOFTWARE PROGRAM CALLED ETAP. ONCE THIS UPDATE HAS BEEN COMPLETED REVISED LOAD FLOW DATA WILL BE AVAILABLE.	ACCEPT JAG 6/1/94

REVIEWED BY: Jaime Gonzalez — Printed Name & Signature — 4/12/94 — Date

RESPONSE BY: WILLIAM REED — Printed Name & Signature — 5/23/94 — Date

QAP-2-1

6033 (11/91)

YMP-110-R3
06/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C2 (part a) - Drawings - See page 2 of DAR Draft/Revision: N/A ☑ Q

Document Number: See page 2 of DAR Governing Document: N/A Date: N/A ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
1.	General	The notes section of every drawing contains a delta mark that does not identify the changed portion or is superfluous.	IN ACCORDANCE WITH QAP-3-10/REV 04, TP 5.11.5, "REVISED SCHEDULES OR NOTES MAY OMIT CLOUDS BUT REVISION DELTAS MUST BE PLACED ADJACENT TO THE REVISED SCHEDULE OR NOTE." NO CHANGE REQUIRED.	Accept BJV 10/6/94
2.4	40116	This drawing is the only one out of this series that does not have the notes listed on it. To keep consistency suggest that the notes be added to this drawing.	AGREE TO ADD NOTES TO ~~DWG 40116 WHEN THE DWG IS REVISED~~ WRK 10-05-94 THE NEXT REVISION OF DWG 40116, ADD TO PRIORITIZED TASK LISTING MDL 10-6-94	[illegible] Accept BJV 10/6/94

8. Comments J. M. Replogle Date: 9/30/94

90% Design Review · ·sign Package 2C

CRWMS/M&O

Document Re...ew Record (Continued)

WBS: 1.2.6
QA: QA

DOCUMENT TITLE	REVISION	DATE	DOCUMENT IDENTIFIER
MINING ANALYSIS Vol 1	0B	5-2-94	BABFA000-01717-0200-00001

COMMENT NO.	SECTION/ PARAGRAPH	COMMENTS	RESPONSE	ACCEPT/ REJECT
1 2C 102	11/11.3 p 15	☑ Mandatory - Requirement # N/A ☐ Non-Mandatory (No Response Required) It appears that the design input is a pass through from TCO to the A/E. ESFDR Appendix B is suppose to convey design needs of the PI's. Using direct pass through could make it difficult to trace the design input for test. This could create a traceability problem and may raise some concern. Why not develop approach that allows changes to ESFDR Appendix B as means to transmit PI facility requirements.	2C - 102 L.R. MORRISON WE ARE CURRENTLY ATTEMPTING TO IMPLEMENT THE PROCEDURE YOU SUGGEST. THE SYSTEMS REQUIREMENTS PEOPLE (SAM RINDSKOPF) ARE ISSUING A REQUEST TO THE TCO TO UPDATE APPENDIX B OF THE ESFDR. WHEN THE ESFDR IS REVISED, THE BFD WILL BE UPDATED AS REQUIRED TO MATCH. HOWEVER, AS ESFDR APPENDIX B IS NOT CURRENTLY UP-TO-DATE WE FEEL IT IS PROPER TO USE TCO LETTERS DIRECTLY TO INSURE INCORPORATION OF TCO REQUIREMENTS UNTIL THE BFD IS UPDATED. THIS PROCEDURE WILL LIKELY BE FOLLOWED IN THE NEAR FUTURE AS IT IS UNLIKELY THAT REVISIONS TO THE ESFDR CAN BE MADE IN THE VERY SHORT TIME REQUIRED TO SUPPORT BFD AND DESIGN PACKAGE SCHEDULES.	Accept JRG 6/16/94

REVIEWED BY:		RESPONSE BY: L.R. Morrison	
Jaime Gonzalez	5/13/94		5.26.94
Printed Name & Signature	Date	Printed Name & Signature	Date

QAP-2-1 HNK

CRWMS/M&O
LOGAN
ORRELLS
CLARK

Document Review Record
(Continued)

WBS: 1.2.6
QA: QA

DOCUMENT TITLE	REVISION	DATE	DOCUMENT IDENTIFIER
BFD	D4	5/2/94	01717-6300-00002

COMMENT NO.	SECTION/ PARAGRAPH	COMMENTS	RESPONSE	ACCEPT/ REJECT
2C 107	D3 PAGE 7-356	☒ Mandatory - Requirement # N/A ☐ Non-Mandatory (No Response Required) It is stated in the BFD that the fire alarm system should be activated only after two or more indications of detection devices (BFD D3 page 7-356). This is not a correct approach to take in order to minimize false alarms. It should be done in a statistical manner using confidence limits to set appropriate alarm levels to reduce false alarms to a statistically satisfactory level. To arbitrarily require at least two alarms before any action is taken could well result in a real alarm being ignored with the associated consequences of such an action.	THIS WILL BE REVISITED AND THE CRITERIA CHANGED IF WARRANTED	Accept JAG 6/13/94

REVIEWED BY: Jaime A. Gonzalez — Printed Name & Signature — 5/20/94 Date

RESPONSE BY: JOHN J. CLARK — John J. Clark — Printed Name & Signature — 5-27-94 Date

PM.

CRWMS/M&O

Document Review Record
(Continued)

WBS: 1.2.6
QA: QA
Page: 38 Of: 40

DOCUMENT TITLE	REVISION	DATE	DOCUMENT IDENTIFIER
ELECTRICAL ANALYSIS — 90% REVIEW PACKAGE 2C	0B	05-16-94	BABFAA000-01717-0200-00001

COMMENT NO.	SECTION/ PARAGRAPH	COMMENTS	RESPONSE	ACCEPT/ REJECT
2C 128	GENERAL	WHERE ARE THE UPDATED LOAD FLOW ANALYSIS ETC, WHICH I BELIEVE SHOULD BE PART OF THE ~~ANALYSIS~~ PACKAGE. THIS COMMENT IS RELEVANT TO SECTION 9 ON PAGE 4 OF 7. (MANDATORY)	THE M&D IS IN THE PROCESS OF UPDATING THE PROJECT LOAD FLOW DATA INTO A COMPUTER SOFTWARE PROGRAM CALLED ETAP. ONCE THIS UPDATE HAS BEEN COMPLETED REVISED LOAD FLOW DATA WILL BE AVAILABLE.	Accept JAG 6/1/94

REVIEWED BY: Jaime Gonzalez — Printed Name & Signature — Date: 4/20/94

RESPONSE BY: WILLIAM REED — Printed Name & Signature — Date: 5/23/94

QAP-2-1

0033 (11/01A)

CRWMS/M&O

Design Verification Record (Continued)

(13.) WBS: 1.2.6
QA: QA
Page: 3 Of: 8

14. DESIGN PACKAGE TITLE	15. DATE
Quality Affecting Portion of Package 2C (4th release)	10/14/94

16. COMMENT NO	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
3	SPEC. 02341 STEEL SETS AND ACCESSORIES SUBSURFACE SPECIFICATION SECTION: 2.01 PAR.: A, B, & C	There is no evidence of backup supporting documentation (calculations or analysis) for the materials specified for the components in Sections 2.01 A. 1.- 7., 2.01 B., 2.01 B. 1., and 2.01 C.	This will be included in the next revision of the analysis. [signature] 10-27-94 (the steel set analysis)	ACCEPT [signature] 10-27-94

21. REVIEWED BY:	22. RESPONSE BY:
William Hunt [signature] 10-25-94	E. M. Sedenik [signature] 10/27/94
Print Name and Sign / Date	Print Name and Sign / Date

QAP 3.3

0608 Rev. 04/13/94

CRWMS/M&O

Design Verification Record (Continued)

(13.)

WBS: 1 2.6
QA: QA
Page: 4 of 6

14 DESIGN PACKAGE TITLE: Quality Affecting Portion of Package 2C (4th release)

15. DATE: 10/14/94

16. COMMENT NO	17 DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20 ACCEPTED
4	SPEC. 02341 SIEVE SETS AND ACCESSORIES SUBSURFACE SPECIFICATION SECTION: 2.02 PAR.: B & C	There is no evidence of backup supporting documentation (calculations or analysis) for the bending tolerances and the shop fabrication tolerances specified.	This will be included in the next revision of the analysis. (steel set analysis) E.M. Jeden 10-27-94	ACCEPT 10-27-94

21 REVIEWED BY: William Hunt — 10-25-94
Print Name and Sign — Date

22 RESPONSE BY: E.M. Jeden — 10/27/94
Print Name and Sign — Date

CRWMS M&O

Design Verification Record (Continued)

(13.) WBS: 1.2.6
QA: QA
Page: 5 Of: 5

14 DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (4th release)

15. DATE 10/14/94

16. COMMENT NO	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20 ACCEPTED
5	SPEC. 02341 STEEL SETS AND ALLIED STRUCTURES SUBSURFACE SPECIFICATION SECTION: 3.03 PAR.: B 2.	There is no evidence of backup supporting documentation (calculations or analysis) for the 100mm (4 inches) tolerance specified.	This will be included in the next revision of the analyses. (steel set analyses)	ACCEPT 2/1/95 10-27-94

21. REVIEWED BY:
William Hunt — Print Name and Sign
10-25-94 — Date

22. RESPONSE BY:
Print Name and Sign
10/27/94 — Date

CRWMS/M&O

Design Verification Record (Continued)

(13) WBS: 1.2.6
QA: QA
Page: 7 Of: 8

14. DESIGN PACKAGE TITLE	15. DATE
Quality Affecting Portion of Package 2C (4th release)	10/14/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
7	TS NORTH RAMP STEEL SETS & LAGGING ELEVATION DRAWING, ST: BABEAB000-01707-2100-41101 REV. 03 NOTE 7.	Note 7. states, "Carriage bolts(grade A) shall conform to ASME B18.5-1990 and ASTM A307." This is no evidence of supporting documentation specifying this material conformance for the carriage bolts.	This will be incorporated into the next revision to the analyses, (steel set analyses)	ACCEPT WRH 10-27-94

21. REVIEWED BY:		22. RESPONSE BY:	
William Hunt	William Hunt	E.M. Jedenik	10/27/94
Print Name and Sign	10-26-94 Date	Print Name and Sign	Date

QAP 3.3

RWMS/M&O

Design Verification Record
(Continued)

(13) WBS: 126
QA: QA
Page: 7 of 17

14. DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (4th release)

15. DATE
10/14/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
6	BABEAB000 -01717-6300 -02341 2.01.A.7	Is ASTM A500 the preferred material over ASTM A 53, Grade B.	Agree, ASTM A53 GAB will be specified. Steel set analysis and material dedication will be updated to reflect this change no impact on either analyses for stress considerations	ACCEPT MD 10/27/94

21. REVIEWED BY:
Matthew J Gomez [signature] 10/25/94
Print Name and Sign Date

22. RESPONSE BY:
E.M. SEDENIK [signature] 10/26/94
Print Name and Sign Date

RWMS/M&O

Design Verification Record (Continued)

(13)

WBS: 126
QA: QA

4 DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (4th release)

15 DATE
10/14/94

16 COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19 RESPONSE	20 ACCEPTED
10	BABEAB000 -01717-6300 -02341 3.03.A.1	Horizontal offset of 215mm exceeds the 210mm computed sum of maximum tolerances as shown in Structural Steel Sets Analysis Attachment V page V-3. Statement in analysis should also be revised to reflect 210mm.	Agree, next revision of the Steel Set Analysis will incorporate this adjustment	Accept MG 10/27/94

21. REVIEWED BY:
Matthew J Gomez
Print Name and Sign
10/25/94
Date

22. RESPONSE BY:
E M. SEDENLIK
Print Name and Sign
10/27/94
Date

WMS/M&O

Design Verification Record (Continued)

(13)

WBS: 1.2.6
QA: QA

DESIGN PACKAGE TITLE
ality Affecting Portion of Package 2C (4th release)

15. DATE
10/14/94

COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
1	BABEAB000 -01717-6300 -02341 3.03.B.1	1219mm (4 ft) spacing should be a QA Control since it effects maximum loading on the steel sets. This is a spacing, not a tolerance as stated.	Agree, a ± 2 inch tolerance added. The next revision of the steel set analysis will incorporate the tolerance. At present there is sufficient reserve in the analysis to accomodate a 4% increase in stress levels	Accept MJ 10/27/94

21 REVIEWED BY:
Matthew J Clarke
Print Name and Sign
10/27/94
Date

22 RESPONSE BY
F. M. JEDENIAK
Print Name and Sign
10/27/94
Date

RWMS/M&O

Design Verification Record (Continued)

(13)

WBS: 126
QA: QA

14 DESIGN PACKAGE TITLE: Quality Affecting Portion of Package 2C (4th release)

15. DATE: 10/14/94

16 COMMENT NO	17 DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20 ACCEPTED
15 1	BABEAB000-01717-2100-41102 General	Sections and Details do not match Structural Steel Set Analysis BABEAB000-01717-0200-00102 as follows: SECTION B — Page III-41 shows a 3" slot. SECTION C — Page III-34 shows a 15/16" diameter hole. Page III-34 shows a 1.1/2" dimension from c.l. of bolt to c.l. of beam. DETAIL 2 — Page III-43 shows a 2" wedge flange width. Also since this is tapered, dimension should say VARIES (2" MAX). VIEW D — Page III-6 shows an 8" long clip plate. No design found for 3/8" x 4" Sq plate.	The next revision of the steel set analysis and drawings will incorporate these comments. Section B - drawing correct, analysis to be corrected. Section C - drawing correct, analysis to be corrected. Detail 2 - analysis correct, drawing to be corrected View D - drawing correct. ~~analysis~~ 10/27/94 analysis to be corrected.	ACCEPT MJ 10/28/94

21 REVIEWED BY: Matthew J Gomez — Print Name and Sign — 10/26/94 Date

22. RESPONSE BY: E.M. Pedersen — Print Name and Sign — 10/27/94 Date

RWMS/M&O

Design Verification Record (Continued)

(13)

WBS: 126
QA: QA

14 DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (4th release)

15 DATE
10/14/94

16 COMMENT NO.	17 DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20 ACCEPTED
16	BABEAB000-01717-2100- - 41103 General	Sections and Details do not match Structural Steel Set Analysis BABEAB000-01717-0200-00002 as follows: DETAIL 1 — Section 11.6 of conclusions & Page III-23 call for 3/4" x 8" x 1'-01/2" plate. VIEW A — Page III-17 calls for 3" to the first bolt. Page III-17 calls for 2 1/2" dimension from c.l. of bolt to c.l. of beam. Page III-16 & III-17 show top line of holes in W8 as alternate location of Jacking Bracket. Page III-22 shows edge of plate at 6 1/2" from c.l. of beam. Page III-37 shows 2 1/2" dimension from c.l. of bolt to c.l. of beam at slotted holes. DETAIL 2 — Page III-16 shows a 1/2" end plate on of Jacking Bracket. Page III-17 shows 2" dimension for location of sloted holes. VIEW B — Page III-17 calls for 9/16 x 1 1/4" slotted hole. Page III-17 shows 3" dimension from c.l. of bolt to c.l. of beam at slotted holes. Page III-17 calls for 2 1/2" dimension from c.l. of bolt to c.l. of beam. Page III-16 shows a 1/2" plate along c.l. Page III-16 shows a 1/2" end plate on of Jacking Bracket.	AFTER REVIEW OF THE DRAWINGS AND ANALYSIS, THE DRAWINGS ARE CORRECT. THE SKETCHES IN THE ANALYSIS WERE A STARTING POINT FOR THE DRAWING. WITH THE NEXT REVISION OF THE ANALYSIS THE SKETCHES WILL BE UPDATED TO MATCH THE CORRECT INFORMATION ON THE DRAWING	ACCEPT MJG 10/28/94

21 REVIEWED BY:
Matthew J Gomez — 10/28/94
Print Name and Sign — Date

22. RESPONSE BY.
E. M. JEDENIK — 10/28/94
Print Name and Sign — Date

CRWMS/M&O

Design Verification Record (Continued)

(13)

WBS: 1.2.6
QA: QA
Page: 14 Of: 33

14 DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (4th release)

15 DATE
10/14/94

16 COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
13	BABEA8000-01717-0200-00003	BABEA8000-01717-0200-00003 R-3 MATERIAL DEDICATION ANALYSIS for COMMERCIAL GRADE ITEMS-STEEL SETS This analysis states that "the items analyzed in this document are steel sets and accessories used in the TS north ramp ground support". This analysis hinges on the premise that items procured as 'commercial grade' are to be dedicated and provides the inspection and test methodology for doing this. By definition an "engineered item" cannot be "commercial grade". However a review of the M&O steel set procurement drawings discloses that the steel sets are "engineered items". Per the QAPD definition Commercial Grade items are those "not subject to design or specification criteria unique to the Program or nuclear facilities; used in applications other than the nuclear industry; and ordered from the manufacturer or supplier on the basis of specifications set forth in the manufacturer's published product description." As such while steel set components may in fact be procured as commercial grade and dedicated at the site, fabricated steel sets to the M&O drawings must be procured from a qualified supplier in accordance with QAPD requirements and have nothing to do with commercial grade dedication. This analysis fails to make this distinction and infers that the steel sets are procured as commercial grade.. They are not.	THE MATERIALS DEDICATION ANALYSIS BABEA8000-01717-0200-00003 REV03, WILL BE REVISED TO REFLECT: 1. STEEL SETS ARE AN ENGINEERED ITEM, BUT THAT COMPONENTS OF STEEL SETS MAY BE PURCHASED AS COMMERCIAL GRADE ITEMS, WHICH MEET QAPD DEFINITION 2. PURPOSE OF THE ANALYSIS IS TO ESTABLISH CRITICAL AND FUNCTIONAL CHARACTERISTICS OF THE STEEL. 3. INSPECTION AND TESTS IDENTIFIED IN THE ANALYSIS MAY BE USED TO ENSURE THE CRITICAL AND FUNCTIONAL CHARACTERISTICS.	Accept JP 10/27/94

21 REVIEWED BY:
John W Peters — 10/26/94
Print Name and Sign — Date

22. RESPONSE BY.
JOHN H PYE — 10/27/94
Print Name and Sign — Date

RWMS/M&O

Design Verification Record (Continued)

(13) WBS: 126
QA: QA

4 DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (4th release)

15 DATE
10/14/94

6 COMMENT NO	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20 ACCEPTED
4	BABEA80000-01717-0200-00003	BABEA0000-01717-0200-00003 A-3 MATERIAL DEDICATION ANALYSIS for COMMERCIAL GRADE ITEMS-STEEL SETS Definition for " Commercial Grade Items " should be included	AGREE. WILL INCLUDE THE QARD DEFINITION OF COMMERCIAL GRADE ITEM IN THE NEXT REVISION OF THE ANALYSIS.	10/27/94

21 REVIEWED BY:
John W Priers — Print Name and Sign — 10/26/94 Date

22. RESPONSE BY.
JOHN H. PYE — Print Name and Sign — 10/27/94 Date

RWMS/M&O

Design Verification Record
(Continued)

(13.) WBS: 126
QA: QA
Page: 16 of 33

14. DESIGN PACKAGE TITLE	15. DATE
Quality Affecting Portion of Package 2C (4th release)	10/14/94

16. COMMENT NO	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
5	BABEAB000-01717-0200-00003	BABEAB000-01717-0200-00003 R-3 MATERIAL DEDICATION ANALYSIS for COMMERCIAL GRADE ITEMS-STEEL SETS Par 6.1 As identified in the Material Dedication Analysis for Backbolts, Testing Criteria must meet QARD Section 11 criteria. This analysis specifically addresses meeting QARD Section 10 requirements for satisfying "Inspection and Test Plan" requirements. QARD Section 11 also applies. The analysis and specification specifically identify "testing" requirements. See previous comments.	ACCEPT. CHANGES WERE MADE TO THE MATERIALS DEDICATION ANALYSIS BABEAB000-01717-0200-00003 REV 01. IN REGARDS TO REMOVING QARD SECTION 10 & 11, WERE MADE TO THE BABEAB000-01717-0200-00003 REV 03 THE ONLY REFERENCE TO QARD SECTION 10 IS A QUOTE FROM THE YMP DESIGN PLAN, WHICH IS THE BASIS FOR INCLUDING INSPECTION AND TEST CRITERIA IN THE SPECIFICATION AND NOT PRODUCING A SEPARATE PLAN	Accept [illegible] 10/27/94

21. REVIEWED BY:	22. RESPONSE BY:
John W. Peters [signature] 10/26/94	JOHN H. PYE [signature] 10/27/94
Print Name and Sign — Date	Print Name and Sign — Date

VMS/M&O

Design Verification Record (Continued)

(13) WBS: 126 QA: QA Page: 17 01:33

DESIGN PACKAGE TITLE
ality Affecting Portion of Package 2C (4th release)

15. DATE 10/14/94

COMMENT NO	17 DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
1	BABEA8000-01717-0200-00002	Structural Steel Sets Analysis DI # BABEA8000-01717-0200-00002 Rev 06 Attachment I, Page I-5; Equations for determining the horizontal and vertical components of the jacking force are incorrect. $F_x = P_j \sin\theta$ should be $F_x = P_j \cos\theta$ and $F_y = P_j \cos\theta$ should be $F_y = P_j \sin\theta$. This impacts the jacking load analysis and possibly some of the subsequent structural analyses. (WSI	ACCEPT. THE SINE AND COSINE VALUES ASSOCIATED WITH THE DETERMINATION OF F_x AND F_y WERE INCORRECTLY IDENTIFIED THE RESULTS OF RE-ANALYSIS INDICATE LESS THAN A 2% CHANGE IN THE INTERACTION RATIOS WHICH IS NOT CONSIDERED SIGNIFICANT. AND DOES NOT CHANGE THE STEEL SET DESIGN. THIS WILL BE ADDRESSED BY INCORPORATING THE RE-ANALYSIS WHEN THE STEEL SET ANALYSIS IS REVISED.	accept JWP 10/27/94

21 REVIEWED BY:
John W Peters — Print Name and Sign — 10/26/94 Date

22. RESPONSE BY:
JOHN H. PYE — Print Name and Sign — 10/27/94 Date

WMS/M&O

Design Verification Record (Continued)

(13)

WBS: 1.2.6
QA: QA
Page: 19 of 33

DESIGN PACKAGE TITLE
uality Affecting Portion of Package 2C (4th release)

15. DATE 10/14/94

COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20 ACCEPTED
18	BABEA8000-01717-0200-00002	Structural Steel Sets Analysis DI # BABEA8000-01717-0200-00002 Rev 01 Attachment II, Page II-2: Assumptions 1 and 2 at the bottom of the page need to be identified in Section 7 "Assumptions" of the text. (WSI)	Assumption 1 is an input not an assumption. ~~Assumption~~ 2nd 10/27/94 Assumption 2 is an assumption and will be listed in Section 7 Assumptions when the analysis is next revised.	Accept 10/27/94

21 REVIEWED BY:
John W Peters
Print Name and Sign
10/26/94
Date

22. RESPONSE BY:
E.M. Yeden
Print Name and Sign
10/27/94
Date

WMS/M&O

Design Verification Record
(Continued)

(13)

WBS: 126
QA: QA
Page: 24 Of: 38

DESIGN PACKAGE TITLE
ality Affecting Portion of Package 2C (4th release)

15. DATE
10/14/94

COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
7.3	BABEAB000-01717-0200-00002	Structural Steel Seta Analysis DI # BABEAB000-01717-0200-00002 Rev 04 Attachment IV, Page IV-5. The assumption that the steel set loading M_x will be equal to 0.25M needs to be identified in Section 7 "Assumptions" of the text. (WS)	ACCEPT. WILL CITE AS AN ASSUMPTION IN SECTION 7 OF THE ANALYSIS WHEN REVISED.	accepted [signature] 10/27/94

21. REVIEWED BY:
John W. Peters [signature] 10/26/94
Print Name and Sign Date

22. RESPONSE BY:
JOHN H. PYE [signature] 10/27/94
Print Name and Sign Date

RWMS/M&O

Design Verification Record (Continued)

(13.)

WBS: 2.6
QA: QA
Page: 29 Of: 33

14. DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (4th release)

15. DATE
10/14/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
28	BABAB000-01717-0200-00008	Requirements Allocation Analysis for Furnishings DI BABAC000-01717-0200-00001 Revision 1 and the Requirements Allocation Analysis for Linings and Ground Support DI BABCA8000-01717-0200-00008 Revision 1 under method state: The method used to identify applicable requirements was done "by detailed review of the ESFDR". Contrary to the stated method it has been determined that inconsistencies exists between RAAs. It is not clear what the rational is for determining which ESFDR are applicable to each individual RAA. For example ESFDR requirement 3.2.1 J.4 is identified as applicable to Requirements Allocation Analysis for Furnishings DI BABAC000-01717-0200-00001 Revision 1 but is not identified in the Ground Support RAA. Additionally engineers preparing RAAs have different approached to identifying upper tier requirements. In one case, the Ground Support RAA preparer identifies each ESFDR requirement as stated, in another case the preparer for the Furnishing RAA specifies only one requirement if that requirement restated elsewhere (See ESFDR Requirements 3.2.1g, 3.2.1S & T, 3.2.1.25.4 for this type of inconsistency. (RLM)	MANAGEMENT HAS TAKEN THIS COMMENT UNDER ADVISEMENT AND WILL TAKE APPROPRIATE STEPS TO ESTABLISH CONSISTENCY IN THE PREPARATION OF THE RAA. A NATURAL WORKING GROUP HAS BEEN FORMED WITHIN THE M&O TO ADDRESS THIS AND RELATED CONCERNS.	Accept 10/28/94

21. REVIEWED BY:
John W. Peters — Print Name and Sign — 10/24/94 Date

22. RESPONSE BY:
JOHN H. PYE — Print Name and Sign — 10/27/94 Date

YMP-110-R3
06/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

Page ____ of ____

1. Document Title: Package 2C3 (part c) - Drawings & Specification Draft/Revision: N/A ☐ Q

Document Number: N/A Governing Document: N/A Date: N/A ☑ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
1. *	45608 41152	These dwgs have a mix of metric and english dimensions that should be all metric. Dwg 45609 is a dwg of similar components, which is done all in metric. Suggest that at the next revision ple change all relevant dimensions to Metric.	Agree 10-13-94	Accept BJV 10/13/94

5. Comments B. J. Vecna Date: 10/13/94

Exhibit YUC-31 2-AMA.6

CRWMS/M&O

Design Verification Record
(Continued)

(13.) WBS: 1.2.6
QA: QA
Page: 5 Of: 14

14. DESIGN PACKAGE TITLE	15. DATE
Quality Affecting Portion of Package 2C (3rd release)	09/29/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
JJC 05 4 JJE 10-11-94	BABEAB000-01717-2100-40151 JJE 10-10-94	TS North Ramp Ground Support Master Elevation and Section DI BABEAB000-01717-2100-40151 Revision 1 Draft. The Table on this drawing calls out installation of Structural Steel Sets for Category 5 ground support. However, the TS North Ramp Scoping Analysis DI BABEAB000-01717-0200-00010 Rev 1 page 50 of 81 specifically calls out installation of W8 x 31 steel sets. It is not clear where the source of the specific requirement for installation of W8x 31 steel sets comes from for the analysis and why this requirement is not captured in drwg 40151. (QAP 6.2 Review Criteria 3.7 and 3.11) RLA NOTE: THIS COMMENT GENERATED BY OQA DURING SURVEILLANCE. 1 CONCUR JJE 10-11-94	The TS North Ramp Scoping Analysis will be revised to delete the callout for the size of the steel sets, adding wording to the effect that the size will be determined via separate analysis. Since this change will not impact any of the associated design outputs, the revision will be made after the design package is issued and the appropriate inputs sheets will be updated accordingly.	JJE 10-11-94 ACCEPT

21. REVIEWED BY:	22. RESPONSE BY:
John J. Clark [signature] 10-10-94	John H Pye 10/11/94 JOHN H. PYE 10-11-94
Print Name and Sign / Date	Print Name and Sign / Date

JJE 10-11-94

QAP 3.3 OSM (Rev. 04/13/94)

RWMS/M&O

Design Verification Record (Continued)

(13.) WBS: 1.2.6
QA: QA

14. DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (3rd release)

15. DATE 09/29/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
NC-09 78 JJG 10-11-94 08 JJG 10-11-94	TS NORTH RAMP GROUND SUPPORT SCOPING: BABEA0000-01717-0200-00010 SECT. 5.0	REGARDING DESIGN INPUTS p.11 of the scoping analysis calls out the following design inputs: TDIF #302273 provided by SNL (Design Input 5.2) TS North Ramp Mass Classification (Design Input 5.3) TS North Ramp Stability Analysis (Design Input 5.4) TS North Ramp Alcove Ground Support Analysis (Design Input 5.5; These design inputs are not listed in the Section 5.0 of the Analysis. Demonstrate that these inputs where appropriately identified and checked in accordance with QAP-3-9. (RLH) NOTE: THIS COMMENT GENERATED BY QA DURING SURVEILLANCE. I QA CONCUR JJG 10-11-94	Page 11 of the scoping analysis will be changed (as a part of the revision to this document as discussed under 5. above) to delete the bulleted wording. The item under the first bullet is presently captured in Design Inputs, Section 5. The remainder of the items were not design input. They are used as references elsewhere in the scoping analysis that confirm the appropriateness of the designs selected in the scoping analysis. The analysis will be clarified to better address the relationship of these analyses to one another when it is revised. THIS CHANGE WILL NOT IMPACT ANY OF THE ASSOCIATED DESIGN OUTPUTS, THE REVISION WILL BE MADE AFTER THE DESIGN PACKAGE IS ISSUED AND THE ADDENDUM INDUS SHEETS WILL BE UPDATED ACCORDINGLY. JHP 10/10/94.	JJG 10-11-94 ACCEPT ACCEPT ADDITION JJG 10-11-94

21 REVIEWED BY:
John J. Clark — Print Name and Sign — 10-10-94 Date

22. RESPONSE BY:
John H Pye 10/10/94 — JOHN H PYE — Print Name and Sign — 10-11-94 Date
JJG 10-11-94

QAP 3-2

CRWMS/M&O

Design Verification Record (Continued)

(13.) WBS: 1.2.6
QA: QA

14. DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (3rd release)

15. DATE
09/29/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
JJC 047 10-11-94 05 JJC 10-11-94	BABEAB000-01717-6300-00165 SECT. 6.1 & 6.2 & 6.3	-04166 10-10-94 The Specification Inputs list for BABEAB000-01717-6300-00165 Rev C 'Rockbolts ad Accessories' identifies the Material Dedication Analysis (DI BABEAB000-01717-0200-00009 rev 1) as a design input. This analysis clearly describes both Inspection And Test requirements as addressed in QARD section 7.2.12 for commercial grade items. (The QARD allows for either.) Testing (section 11.0 and Inspection (QARD section 10.0) are different elements of the YMP QA program. Section 6.0 of the analysis refers to QARD Section 7.2.12 D and QARD Section 10 but not to QARD Section 11.0. The analysis specifically calls for Inspection or Testing of commercial grade items in para 10.1.4; inspection and testing in 10.3.1.1 and 10.3.1.3 for rockbolts; testing of shotcrete cores in paragraph 10.3.2.2; rockbolt Test Requirements in paragraph 10.4.3.1 and separate Inspection requirements in paragraph 10.4.3.3; construction testing requirements in 10.5.3.1 and construction inspection requirements in para 10.5.3.3. QARD Section 11.0 (Testing) requirements are not imposed as required by the QARD. (CAP 6.2 Review Criteria 3.9) KCC NOTE! THIS COMMENT GENERATED BY QA DURING SURVEILLANCE. 1 COURSE 10-11-94	The Materials Dedication Analysis will be revised to delete the following: 1) the last sentence in Section 6.1 will be deleted, 2) all of Section 6.2 will be deleted, and, 3) all of Section 6.3 will be deleted. Since this change will not impact any of the associated design outputs, the revision will be made after the design package is issued and the appropriate inputs sheets will be updated accordingly.	JJC 10-11-94 ACCEPT

21. REVIEWED BY:
John J. Clark — Print Name and Sign — 10-10-94 Date

22. RESPONSE BY:
DONNA V. ROGERS
Donna J. Rogers — Print Name and Sign — 10-11-94 Date

CRWMS/M&O

Design Verification Record (Continued)

(13.) WBS: 1.2.6
QA: QA
Page: 2 01: 42

14. DESIGN PACKAGE TITLE
Qaulity Affecting Portion of Package 2C (5th Release)

15. DATE 10/31/94

16. COMMENT NO	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
1	BABEAB000-01717-6300-02341 11/1/94 General 03263	An analysis should be prepared to document the values and engineering dicisions used in this specification which are not documented in the already cited analyses. Examples are: 2.01 B. ASTM C150 Type II cement. 2.01 C. Size 7 aggregate 2.01 E2. 15 % silica fume 2.01 F3 Size of steel fiber 2.02 B. Nozzel slump needs to be identified.	The selection of the materials and the numerical values used in this specification (Wet Process Shotcrete) and the Dry Process Shotcrete Specification are normal and acceptable engineering decisions, and are correct. An analysis will be prepared to document these decisions, to support the engineering traceability. This analysis will explain the selection but will not change the content of these specifications. Therefore the analysis will be made subsequent to the specifications and will not have an impact to these Specifications.	Accepted JCP 11/2/94

21. REVIEWED BY:
John W. Peters — Print Name and Sign — 11/1/94 Date

22. RESPONSE BY:
Gerald W. Kaiser — Print Name and Sign — 11/1/94 Date

QAP 3.2

CRWM SO (Co ded)

Pa 2 01:42

14. DESIGN PACKAGE TITLE	15. DATE
Qaulity Affecting Portion of Package 2C (5th Release)	10/31/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
21	BABEAB000-01717-6300--03363	Section 2.02 B does not completely address ACI 506 2-4, Section 1.6.4.2, regarding panel construction. The dimensions recommended in the ACI Standard are 762 x 762 mm with the third dimension being equal to the dimension of the structure, but not less than 76 mm. Also it recommends providing the same reinforcement as in the structure in at least half of the panel to test for proper embedment of reinforcing steel. (WS) Retyped for legibility Section 2.02 B does not completely address ACI 506 2-4, Section 1.6.4.2, regarding panel construction. The dimensions recommended in the ACI Standard are 762 x 762 mm with the third dimension being equal to the dimension of the structure, but not less than 76 mm. Also it recommends providing the same reinforcement as in the structure in at least half of the panel to test for proper embedment of reinforcing steel. (WS) JWP 12/2/94	ACI 506.2-4 1.6.3.2 specify that construction panel are 457mm X 457mm. For the preconstruction test panel they state that 762mm X 762mm are to be used and that reinforcement as in the structure is to be in at least one half of the panels. The shotcrete design does not contain reinforcement (deformed bar or Welded wire fabric) and the use of 460mm X 460mm has been judged adequate for the preconstruction testing based on the construction test panels size ,lack of obstructive reinforcement and embedments and will provide the number of sample cores. This will be addressed in an analysis. JWK 11/4/94	Accept JWP 11/4/94

21. REVIEWED BY:	22. RESPONSE BY:
John W. Peters [signature] 11/3/94 Print Name and Sign Date	Jerald W. Keifer [signature] 11/4/94 Print Name and Sign Date

QAP 3.2

CRWMS/M&O

Design Verification Record (Continued)

(13.) WBS: 1.2.6
QA: QA
Page: 6 Of: 18

14. DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (5th release)

15. DATE
10/31/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
5	BABEAB000-01717-6300-03363. 1.05.A	Reword to read "Shotcrete: Portland Cement concrete (In accordance with ACI 506.2), pneumatically...."	~~agree - will incorporate~~ JWK 11/4/94 Disagree - this addition would make the shotcrete to be in full compliance with ACI 506. The selected casing of shotcrete is not all conformance with ACI 506, but is in conformance to [illegible]	~~ACCEPT~~ MJG ~~11/4/94~~ MG 11/4/94 11/4/94

21. REVIEWED BY:
Matthew J. Gomez — Print Name and Sign — 10/31/94 — Date

22. RESPONSE BY:
[signature] — Print Name and Sign — 11/4/94 — Date

CRWMS/M&O

Design Verification Record (Continued)

(13.)

WBS: 1.2.6
QA: QA

14. DESIGN PACKAGE TITLE
Quality Affecting Portion of Package 2C (5th release)

15. DATE
10/31/94

16. COMMENT NO.	17. DOCUMENT SECTION/ PARAGRAPH	18. COMMENTS	19. RESPONSE	20. ACCEPTED
13	BABEAB000-01717-6300-03362. 1.05.A	Reword to read "Shotcrete: Portland Cement concrete (in accordance with ACI 506.2), pneumatically...."	Disagree - this addition would make the Shotcrete to be in full compliance with ACI 506. The selected curing of Shotcrete is not in conformance with ACI 506, but is in conformance to tunnel lining practice recommended by Technical organizations. Will discuss the curing in subsequent analysis.	Accept MJG 11/4/94 11/4/94 MJG 11/4/94

21. REVIEWED BY:
Matthew J. Gomez — Print Name and Sign
11/2/94 — Date

22. RESPONSE BY:
Gerald W. Kester — Print Name and Sign
11/4/94 — Date

YMP-110-R3
06/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C2 (part b) - Drawing Inputs List Draft/Revision: N/A ☑ Q

Document Number: See page 2 of DAR Governing Document: Date: ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
#17	DIE For Package 2c	ESFDR requirement 3.2.1.1A is identified in the Determination of Importance Evaluation for Package 2C as a source for DIE requirements 6,7,8,and 11. This is a requirement for surface facilities and should not flow down to Package 2C. Please delete references to ESFDR requirement 3.2.1.1A from the DIE. (6.2 Review Criteria 3.7, 3.9.& 3.11)	Agree. Will update ESFDR references in Revision 03 of the 2C DIE. (BAB000000-01717-2200-00005) [signature] 10/3/94	Accept [signature] 10/4/94

3 10.2

5. Comments John F Pelletier Date: 10/2/94

YMP-110-R3
06/20/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
DOCUMENT REVIEW RECORD COMMENT SHEET

1. Document Title: Package 2C2 (part b) - Drawing Inputs List Draft/Revision: N/A ☑ Q

Document Number: See page 2 of DAR Governing Document: Date: ☐ Non Q

2. NO. CODE	3. SECT./ PARA.	4. COMMENT	6. RESPONSE	7. ACCEPT
#16	DIE FOR PACKAGE 2C	ESFDR requirement 3.2.2.1.J1 is identified in the Determination of Importance Evaluation for Package 2C as a source for DIE requirement 11. This is a requirement for surface facilities and should not flow down to Package 2C. Please delete references to ESFDR requirement 3.2.2.1.J1 from the DIE. (6.2 Review Criteria 3.7, 3.9.& 3.11)	Agree. Will update ESFDR references in Revision 03 of the 2C DIE. (BAB000000-01717-2200-00005) Dealer [signature] 10/3/94	Accept [signature] 10/4/94

5. Comments John F Pelletier Date: 10/2/94

Exhibit YLP-31.2-AMA.6

90% Design Review - Design Package 2C

CRWMS/M&O

Document Review Record
(Continued)

WBS:
OA:
Page: 2 Of:

DOCUMENT TITLE	REVISION	DATE	DOCUMENT IDENTIFIER
Design Package 2C Review	N/A	N/A	N/A

COMMENT NO.	SECTION/ PARAGRAPH	COMMENTS	RESPONSE	ACCEPT REJECT
1	General: Specs	☒ Mandatory - Requirement # N/A ☐ Non-Mandatory (No Response Required) General - Specifications do not seem to follow the same format, in all cases. They do not follow the format in QAP-3-8, however, the specifications do seem to follow the general format described in the MGDS Design Process Guidelines Manual. However, many of the specifications are missing a section titled, "Field Quality Control." Recommend that you (1) adopt a format and stick to it; and (2) that you review QAP-3-8 and revise the format if you do not intend on using it.	Agree: ESF Project Specifications Sections will use CSI Specs. format which is spelled out in QAP-3-8, Rev. 4. Field Quality Control is in Section 01400 of Division I. A new Section 01000 will define Divisions I - 16. TR 7/5/94	Accept KVG 6/8/94 SEE ATTACH. COMMON EVALUATION

2C 264

REVIEWED BY: S. DANA [signature] Printed Name & Signature — 5/23/94 Date

RESPONSE BY: Robert A. Skorseth [signature] Printed Name & Signature — 5/25/94 Date

QAP-3-1

CRWMS/M&O

Document Review Record
(Continued)

WBS: 1.2.6
QA: QA
Page: 3 of: 40

DOCUMENT TITLE	REVISION	DATE	DOCUMENT IDENTIFIER
Various Specs	N/A	N/A	Various

COMMENT NO.	SECTION/ PARAGRAPH	COMMENTS	RESPONSE	ACCEPT/ REJECT
2C 093	N/A	☒ Mandatory - Requirement # N/A ☐ Non-Mandatory (No Response Required) Certain Specs mix QA and QC. Putting a requirement in a QA section that does not require QA involvement presents an opportunity for un-necessary QA involvement and a waste of Project funds. Examples are : Sect 14553 – Paragraph 1.04B " 15061 – " 1.04C " 15160 – " 1.04C " 15191 – " 1.04C " 15261 – " 1.04C " 15300 – " 1.04B,C,D " 15371 – " 1.04C,D " 15452 – " 1.04C " 05121 – " 1.04C,D,E,F " 13430 – " 1.04C,D " 13430 – " 1.04C,D All of these paragraphs should be removed from the QA section 1.04	QA requirements will be clearly identified as such and separated from non QA requirements.	ACCEPT JAG 6/1/94

REVIEWED BY: B. Varna
Jaime A. Gonzalez — Printed Name & Signature
5/20/94 — Date

RESPONSE BY: ROBERT S STAUNDERS — Printed Name & Signature
5-27-94 — Date

QAP-3-1

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

8 CAR NO. 1
PAGE 1 OF 2
QA

CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)

EVALUATION OF AMENDED RESPONSE TO CARS YM-94-065 AND YM-94-072

On December 27, the Office of Quality Assurance received the following letters from the M&O:

1. LV.ESSB.GH.12/94-889 dated December 20, 1994 from L. Dale Foust to Robert M. Nelson, Jr.

2. LV.ESSB.GH.12/94-890 dated December 20, 1994 from L. Dale Foust to Robert M. Nelson, Jr.

3. LV.ESSB.GH.12/94-250 dated December 20, 1994 from L. Dale Foust to Robert M. Nelson, Jr.

Letters LV.ESSB.GH.12/94-889 and LV.ESSB.GH.12/94-890 dated December 20, 1994 from L. Dale Foust to Robert M. Nelson, Jr. state that during the verification and QAP 6.2 review of several design package 2C products, review comments were made that indicate additional extent of deficiency identified in CAR YM-94-065 and YM-94-072. These letters also state that these deficiencies are being tracked via letter LV.ESSB.RMS.12/94-877 and that revisions are necessary to supporting analyses. Letter LV.ESSB.GH.12/94-250 revises the root cause and actions to preclude recurrence indicating that changes are being made to the design control process. Based on this supplemental information, YMQAD needs further clarification to adequately evaluate corrective actions for CARs YM-94-065 and YM-94-072.

1. Letters LV.ESSB.GH.12/94-889 and LV.ESSB.GH.12/94-890 state that the revisions will be completed by February 6, 1995. However, letter LV.ESSB.RMS.12/94-877 indicates that revision of some analyses will not be complete until March 1995. It is unclear what exactly the M&O considers the extent of deficiency for analyses and what the final completion date is for these additional corrective actions.

2. CAR YM-94-065 identifies deficiencies not only related to analyses, but also to drawings and specifications. The M&O committed to rechecking and correcting all Design Package 2C products. Letter LV.ESSB.RMS.12/94-877 identifies several specifications and drawings that need to be revised. Does the M&O consider these items as part of the extent of the deficiency of CAR YM-94-065?

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

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QA

CORRECTIVE ACTION REQUEST (CONTINUATION PAGE)

3. Letter LV.ESSB.GH.12/94-250 provides an amended response to CAR YM-94-065 but does not provide any due dates for the proposed actions or ask for an extension. The corrective action due dates on the CAR indicate completion by 1/31/95. This appears to be inconsistent with the information provided in M&O letter LV.ESSB.RMS.12/94-877 and M&O letter LV.ESSB.GH.12/94-889.

4. The amended response includes a new completion date of March 15, 1995; does the M&O need an extension for completion of corrective action until this date?

Please provide the additional information within 10 working days. If you have any questions please contact Richard Powe at 794-7749.

R E Powe
Richard E. Powe

1/10/95
Date