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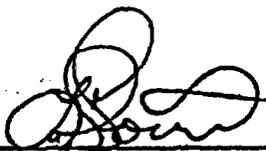
MANAGEMENT AND INDEPENDENT TECHNICAL REVIEW PLAN

ESF

TITLE II 90% DESIGN REVIEW

SURFACE FACILITIES

DESIGN PACKAGE 1D



L. Dale Foust

Assistant General Manager, Nevada

DATE 7/06/94



W. Donovan Schutt

Review Leader

DATE 7/06/94

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1. INTRODUCTION

The CRWMS M&O surface design organization has documented the design to support the construction of the Exploratory Surface Facility (ESF) at Yucca Mountain, Nevada. Design documents, including drawings, specifications, and analyses, have been produced for the Title II design for several surface facilities of the ESF. This package of design drawings, specifications, and analyses, hereafter referred to as Package 1D, is the subject of this review.

This review addresses "Design Reviews and Verification by Design Organizations", Section 4.2.7 of the Yucca Mountain Site Characterization Project Design Plan, Rev. 0, January, 1993, Document YMP/93-06, which requires "review design output documentation prior to submission to the [YMSCO]" (Yucca Mountain Site Characterization Project Office). This review also meets the requirements for a Management Review and an Independent Technical Assessment for the 90% design review stage called for in Section 8.1 Review of the Management and Operating Contractor Fiscal Year 1994 Exploratory Study Facilities Engineering Plan, Document B00000000-01717-4600-00023, Rev 1, December 1993.

2. PURPOSE

The general purpose of this review is to help M&O and DOE managers and other interested parties assess whether the ESF design is technically correct and if it is in compliance with project objectives.

The specific purpose is for the design organization of the M&O to ascertain the status of technical progress, cost, schedule, and attainment of project requirements. These project requirements are documented in the Exploratory Studies Facility Basis For Design Document (BFD), CRWMS M&O Document No. BAB000000-01717-6300-00002, Draft Rev. 5, June, 1994. This review will be conducted under the auspices of M&O QAP-3-1, Technical Document and Milestone Reviews. Results of the review will be provided to the M&O Assistant General Manager, Nevada and the Manager of the MGDS Development Office. Decisions and communications by the M&O resulting from this review will occur at the discretion of the M&O Assistant General Manager, Nevada. This Project Milestone Review does not meet the QARD requirements for design verification.

3. SCOPE

The scope of this review is limited to design output documents, i.e. design drawings, design specifications, and design analyses produced as part of Package 1D. The design output documents are listed in Attachment 1. Review objectives are to ensure compliance with project requirements, technical adequacy, interferences and discrepancies are minimized and coordination between interfacing disciplines and participants has been accomplished. The primary deliverable of this review will be a summary report submitted to the M&O Assistant General Manager, Nevada. This report and all other documents generated by this review will be submitted to the M&O records management system.

4. REVIEW TEAM

Mr. Don Schutt is the Review Leader. The Review Coordinator is Mr. Terry Paul. Review team members, their organization and area of expertise are listed below.

4.1 Review Team Members

Name	Discipline	Org
Anzai, B.H.	HVAC & Mechanical Design	RSN
Ashlock, K.J.	Requirements	M&O
Baumeister, R.B.	Fire Protection & Safety	DOE
Blaylock, J.	Quality Assurance	DOE
Dresel, R.R.	Construction Management	M&O
Gardiner, J.T.	General Compliance	DOE
Greenwold, R.C.	Architecture	RSN
Hansmire, W.H.	Construction	Kiewit/PB
Hastings, P.S.	DIE Compliance	M&O
Kennedy, W.R.	Underground Mining	M&O
Kovach, R.	Test Engineering	LANL
Law, W.P.	Systems Engineering	M&O
McCann, E.W.	Environmental	SAIC
Morissette, R.P.	DIE Requirements	SAIC
Musick, R.G.	Civil Engineering	RSN
Nelsen, T.G.	Electrical Design	RSN
Pokorny, E.W.	Construction	REECo
Robertson, J.L.	Specialty Engineering	M&O
Simms, N.T.	Licensing	M&O

Each of the review team members was selected for their independence from the design activities, their education, background and experience in the assigned discipline.

4.2 Observers

Federal consulting organization observers (DOE/NTSO, DOE/HQ and DOE/YMSCO) should submit any comments to the package to Mr. James Gardiner, DOE/YMSCO. Oversight organization observers (NRC, NWTRB, State of Nevada, Nevada Counties, etc.) should submit their comments to Mr. Norman Simms, M&O. As observers, these individuals may accompany

reviewers, with the reviewers permission, during the review process. Comments may not be submitted directly by observers, but an observer may submit a comment through a reviewer, at the discretion of the reviewer.

5. ATTACHMENTS

Attachments included and essential to this plan are:

- Attachment 1 **Index of Design Output Documents**
A categorized listing of all of the documents that make up the design package.
- Attachment 2 **Design Review Team Selection Record**
The QAP Form 0521, Review Team Selection Record, used by the review leader to select the review team for this review.
- Attachment 3 **Document Review Records**
Each reviewer was assigned individual review criteria to match their area of expertise. A copy of each DRR is provided.
- Attachment 4 **M&O QAP-3-1, Technical Document and Milestone Review**
The latest version is provided for the reviewer's convenience.

6. SCHEDULE AND LOCATION**SURFACE FACILITIES
DESIGN PACKAGE 1D****90% DESIGN REVIEW**

Date	Time	Location	Purpose
July 11, 1994	N/A	N/A	Mail Review Packages
July 11 - 26, 1994	N/A	N/A	Reviewers examine package
July 26, 1994 Tuesday	8:30a - 4:30p	Holiday Inn Emerald Room 325 E. Flamingo Rd. Las Vegas, NV	Design Review Meeting
July 29, 1994	5:00p	N/A	Final Comments due
July 29 - Aug 5, 1994	N/A	N/A	Comment response preparation
Aug 5, 1994	N/A	N/A	Responses mailed to reviewers
Aug 8 - 12, 1994	N/A	N/A	Reviewers review responses
Aug 12, 1994	N/A	N/A	Comment disposition returned to Review Coordinator
Aug 18, 1994 Thursday	1:00p - 5:00p	Room 450	Comment Resolution Meeting, if required

7. DESIGN REVIEW PROCESS

7.0 The procedure for performing the 90% Design Review of Package 1D is M&O QAP-3-1, Technical Document and Milestone Reviews, Rev. 5, May 20, 1994.

7.1 Pre-Review Activities

Prior to initiating any review activities, all reviewers shall be indoctrinated and trained in accordance with QARD (DOE/RW-0333P) requirements. Reviewers shall be trained in the latest version of M&O QAP-3-1, Technical Document and Milestone Review. Reviewers shall have demonstrated competence in the disciplines required for their assigned area of the review. At a minimum, the review team member shall have a four year degree from an accredited institution and four years experience in the assigned area. Years of experience may be substituted for years of education. The reviewer and the reviewer's supervisor shall attest to the above by signing Blocks 7a and 7b of the Document Review Record (DRR), respectively, and returning the DRR to the review coordinator. These pre-review activities must be completed before a reviewer will be provided a copy of the package.

7.2 Review Activities

The review will be initiated by the receipt of the review team's DRRs by the review coordinator and the mailing of Design Package 1D (see Attachment 1) on July 11, 1994.

Upon receipt of the package, reviewers should review the design documents during the two weeks allotted - up to the design review meeting. Reviewers shall use the design criteria listed in Block 4a of their DRR to decide on the type and scope of review comments. Additional review criteria are provided in Section 9 of this plan. Reviewers are to restrict their review to their assigned area. Upon completion of the two week review, reviewers will attend the design review meeting on July 26, 1994, in Las Vegas, Nevada. During the presentation, reviewers are to verbally make their comment directly to the design organization in the hope the comment can be resolved. If the comment cannot be satisfactorily resolved in the meeting, the reviewer will document the comment using a Comment Form. If the comment is non-mandatory, please check box 4c on the Comment Form. All comments should be submitted to the review coordinator by the end of the meeting. In the event a reviewer requires additional time as a result of an issue that arises during the meeting, the reviewer is provided two additional days after the meeting to finalize any comments. All comments are to be submitted by July 29, 1994. Late comments will not be accepted.

Comments will be resolved in accordance with Section 5.4 of QAP-3-1. The design organization will prepare responses to all mandatory comments. Where appropriate, the modified portion of the document, with changes annotated, will be attached to individual responses. The responses will be mailed to the reviewer for disposition (i.e., the reviewer will accept or reject the response). After either accepting or rejecting the response to each of his or her comments, the reviewer will return the Comment Forms to the review coordinator. A comment resolution meeting will be held August 18, 1994, if required. Responses to non-mandatory comments will

be prepared, at the discretion of the design organization, and distributed following distribution of the mandatory comment responses.

7.3 Review Summary Documentation

The Review Leader, with input from team members, will prepare a summary report of the review. The Review Leader will coordinate a meeting at which the results of the review and any pertinent recommendations will be presented to the M&O Assistant General Manager, Nevada. Subsequent to the meeting, the summary report will be signed by the Review Leader and forwarded to the M&O Assistant General Manager, Nevada and responsible manager of the design organization.

8. INSTRUCTIONS TO REVIEWERS

8.0 General Guidance

Attention should be given to the content and sentence structure of the reviewers' comments to provide the design engineer with constructive, referenced, and supported remarks. Comments should be concise, and their intent should be clear, requiring no dialogue to determine their meaning. The reviewers should provide information which may be incorporated or expanded by the M&O to enhance the quality of the designs. Since the Comment Forms are records which may become public information, comments should be structured in a professional manner.

8.1 Specific Guidance

- A. Mandatory comments shall be recorded on the Comment Form.
- B. Only one comment shall be submitted on a single Comment Form.
- C. Comments shall remain with the areas of expertise of the reviewers, as indicated on the DRR.
- D. Editorial comments, comments indicating the need for a minor change, or comments on the contractual language in specifications may be submitted on the Comment Form but must be marked as Non-Mandatory by checking block 4c on the Comment Form. They may also be submitted in any other manner deemed appropriate by the reviewer, including marking directly on the documents. Responses to non-mandatory comments will be provided only for those non-mandatory comments submitted on a Comment Form.
- E. Avoid comments in the form of questions. Make direct statements which allow the design engineer to resolve your concerns. Questions such as, "What is the intent of ...?" are not comments requiring resolution. Most question-type comments can be structured into constructive comments. For example, "What is the intent of...?" can be restructured to "Provide an explanation in this section to support ...".
- F. Avoid comments such as "more detail required," "change", or "clarify". Instead, state what additional details or clarifications are considered necessary, or state "change to..." and support the suggested change with reference or justification, or provide the additional text necessary to resolve the comment.
- G. Provide supporting evidence such as reference, or attach verified information or rationale if a comment identifies a technical error or disagreement with a conclusion.
- H. If the document is a specification, list the page, paragraph, and sentence numbers on the Comment Form.

- I. If the document is a drawing, give the specific zone number (i.e., drawing number, Zone A-1, Detail 1, etc.) on the Comment Form.
- J. Comments must remain within the scope of the review, i.e., Package 1D.
- K. If a comment is about a design component that is based on the BFD, identify the applicable BFD section on the Comment Form.
- L. Comments shall be written in dark ink. White-out or multiple strike-outs are not allowed. If a correction is necessary, draw a single line through the error, date and initial.
- M. Comments must be legible.
- N. Record "No Comment" on the Comment Form if there are no mandatory comments.
- O. Submit all Comment Forms by the close of the design review meeting. Any comments requiring the additional three days, should be sent back to the review coordinator:

Mailing Address: Mr. Terry Paul
Suite P-110
101 Convention Center Drive
Las Vegas, NV 89109

Hand Carry: Mr. Terry Paul
Suite 9100C, Bank of America Building

FAX#: (702) 794-7033

Phone#: (702) 794-1808

9. Review Criteria

9.0 In addition to the specific, individual review criteria found on the DRR, reviewers should consider the following criteria:

9.1 Management Review Criteria

1. Where the document affects the Engineering & Field Operations organization (EFO), are the management and administrative impacts acceptable?
2. Are interfaces between the EFO and other YMSCO organizations, if any, consistent with lines of authority and organizational responsibilities?
3. Are interfaces between the EFO and Participants, if any, consistent with existing contracts of Memoranda of Understanding?
4. Does the document describe requirements or processes in a manner that can be understood and correctly followed by an infrequent user?
5. If the document addresses a management approach or methodology, is the approach reasonable?
6. Are requirements and management approaches or methodologies consistent with known YMP management or administrative policies?

9.2 Technical Review Criteria

1. Are inputs and input sources current, correct, and usable under the requirement for qualified data?
2. Are those assumptions within the scope of the EFO responsibility stated explicitly and are they reasonable?
3. Are analytical and/or design approaches and results reasonable and appropriate?
4. Was technical input correctly incorporated into the final document or design?
5. Were potential interfaces or interactions with disciplines outside of the EFO, such as Environmental, adequately addressed?
6. Were quality-relationship determinations clearly and correctly identified?
7. Are design packages reasonable from the standpoint of economy, as well as constructability and operability, and most importantly, safety?

8. Were all physical interfaces between configuration items clearly identified and were design criteria provided for each as applicable?
9. Were all physical interfaces between configuration items and external systems (e.g. commercial power grid, sample management facility, equipment provided by principal investigators, emergency response equipment from NTS) clearly identified and were design criteria provided for each as applicable?
10. Were all physical interfaces between configuration items and the potential Geologic Repository Operations Area clearly identified and were design criteria provided for each as applicable?

ATTACHMENT 1

Index of Design Output Documents

Design Package 1D - Surface Facilities (Reference documents included)

1. Standard Drawings

BAB000000-01717-2100-20001	Vicinity and Location Map
BAB000000-01717-2100-20002	Standard Symbols and General Notes
BAB000000-01717-2100-20004	Standards Drawing Index
BAB000000-01717-2100-20005	Civil Abbreviations
BAB000000-01717-2100-20006	Civil General Notes, Legend, and Symbols
BAB000000-01717-2100-20008	Overall Site Plan
BABA00000-01717-2100-20011	Typical Road Sections
BAB000000-01717-2100-20016	Drawing Index
BABBA0000-01717-2100-22004	Architectural Concrete Masonry Unit Standard Details
BABBA0000-01717-2100-23000	Structural Standard Notes, Details, and Abbreviations
BABBA0000-01717-2100-23001	Structural Standard Details Sheet 1
BABBA0000-01717-2100-23002	Structural Standard Details Sheet 2
BABBDA000-01717-2100-23015	Structural Transformer Foundation Details
BABB00000-01717-2100-24000	Electrical Abbreviations and General Notes
BABB00000-01717-2100-24002	Electrical Lighting, Power, and System Symbols
BABBA0000-01717-2100-24003	Electrical Lighting Fixture Schedule - Sheet 1
BABBA0000-01717-2100-24004	Electrical Lighting Fixture Schedule - Sheet 2
BABBA0000-01717-2100-24005	Electrical Standard Details Sheet 1
BABBA0000-01717-2100-24006	Electrical Standard Details Sheet 2
BABBA0000-01717-2100-24007	Electrical Standard Details Sheet 3
BABBA0000-01717-2100-24008	Electrical Standard Details - Sheet 4
BABB00000-01717-2100-24009	Electrical Standard Details Sheet 5
BABBA0000-01717-2100-24014	Electrical Standard Details Sheet 6
BABBA0000-01717-2100-25000	Fire Protection General Notes, Symbols, and Abbreviations
BABBA0000-01717-2100-25001	Fire Protection Standard Details

2. Discipline Drawings

BABA00000-01717-2100-20068	Muck Storage Access Road Profile
BABA00000-01717-2100-20069	Muck Storage Access Road Profile
BABA00000-01717-2100-20070	Muck Storage Access Road Profile
BABCC0000-01717-2100-20071	Muck Storage Area Site Plan
BABCC0000-01717-2100-20072	Muck Storage Area Site Grading Plan and Access Road
BABCC0000-01717-2100-20073	Muck Storage Area Site Grading Plan and Access Road
BABCC0000-01717-2100-20074	Muck Storage Area Site Grading Plan and Access Road
BABCC0000-01717-2100-20075	Muck Storage Area Site Grading Plan and Access Road
BABCC0000-01717-2100-20076	Muck Storage Area Site Grading Plan and Access Road
BABCC0000-01717-2100-20077	Muck Storage Area Site Grading Plan and Access Road
BABA00000-01717-2100-20078	Muck Storage Access Road
BABBDA000-01717-2100-23010	Structural - Generator Pad Foundation Plan & Sect's
BABBDA000-01717-2100-23016	Structural Site Lighting Foundation Plan & Section
BABBD000-01717-2100-23017	Structural Compressed Air Pad Foundation Plan & Sect's
BABBDA000-01717-2100-23082	Structural Diesel Fuel Storage Foundation Plan & Sect's
BABBDA000-01717-2100-24039	Electrical Site Grounding Plan Sheet 1
BABBDA000-01717-2100-24041	Electrical Site Grounding Plan Sheet 2
BABBDA000-01717-2100-24042	Electrical Site Grounding Plan Sheet 4
BABBD0000-01717-2100-24050	Electrical Site Lighting Plan Sheet 1
BABBD0000-01717-2100-24051	Electrical Site Lighting Plan Sheet 2
BABBD0000-01717-2100-24052	Electrical Site Lighting Plan Sheet 3
BABBD0000-01717-2100-24053	Electrical Site Lighting Plan Sheet 4
BABBDA000-01717-2100-24060	Electrical Incoming Power Plan
BABBDA000-01717-2100-24072	Electrical Underground Distribution Plan Sheet 2
BABBAD000-01717-2100-24408	Shop - Bldg 5006 Panel Board Schedules Sheet 2
BABBAD000-01717-2100-24410	Shop - Bldg 5006 Lighting Power & Receptacle Plans
BABBD000-01717-2100-29020	Mechanical Compressed Air System Equipment Schedules
BABBD000-01717-2100-29021	Mechanical Compressed Air System Pad Location Plan
BABBD000-01717-2100-29022	Mechanical Compressed Air System Enlarged Pad Plan
BABBD000-01717-2100-29023	Mechanical Compressed Air System Elevations Sect & Details
BABBD000-01717-2100-29024	Mechanical Compressed Air System P&ID Sheet 1
BABBD000-01717-2100-29025	Mechanical Compressed Air System P&ID Sheet 2
BABBD000-01717-2100-29026	Mechanical Compressed Air System P&ID Sheet 3
BABBD000-01717-2100-29027	Mechanical Compressed Air System P&ID Sheet 4

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2. Discipline Drawings (continued)

BABBD000-01717-2100-29028	Mechanical Compressed Air System P&ID Sheet 5
BABBD000-01717-2100-29029	Mechanical Compressed Air System P&ID Sheet 6
BABBD000-01717-2100-29030	Mechanical Diesel Fuel System Equipment Schedules
BABBD000-01717-2100-29031	Mechanical Diesel Fuel System Pad Location Plan
BABBD000-01717-2100-29033	Mechanical Diesel Fuel System Sections
BABBD000-01717-2100-29035	Mechanical Diesel Fuel System P&ID Sheet 1
BABBD000-01717-2100-29036	Mechanical Diesel Fuel System P&ID Sheet 2
BABBD000-01717-2100-29040	Mechanical CAS CNDS Drain System Equipment Schedule
BABBD000-01717-2100-29041	Mechanical CAS CNDS Drain System P&ID Sheet 1
BABBD000-01717-2100-29042	Mechanical CAS CNDS Drain System P&ID Sheet 2
BABBD000-01717-2100-29043	Mechanical CAS CNDS Drain System P&ID Sheet 3
BABBD000-01717-2100-29044	Mechanical CAS CNDS Drain System Condensate Tank Details
YMP-025-1-7007-EL109	ESF Package 1A Electrical Switchgear Bldg 5010 - Embedded Conduit Plan
YMP-025-1-7007-EL112	ESF Package 1A Electrical Switchgear Bldg 5010 - One Line Diagram
YMP-025-1-7007-EL127	ESF Package 1A Electrical Ductbank Sections and Details
YMP-025-1-7007-EL130	ESF Package 1A Electrical Ductbank Sections - Sheet 3

3. Specifications

BAB000000-01717-6300-01015	Summary of Work Package 1D
BAB000000-01717-6300-01300	Submittals
BAB000000-01717-6300-01400	Constructor Quality Control/Quality Assurance
BAB000000-01717-6300-01500	Temporary Surface Construction Facilities
BAB000000-01717-6300-01600	Material and Equipment
BAB000000-01717-6300-02210	Site Grading
BAB000000-01717-6300-02211	Site Grading-Muck Storage Area and Conveyor Access Road
BAB000000-01717-6300-02220	Excavation, Trenching, and Backfill
BAB000000-01717-6300-02520	Portland Cement Concrete Sidewalks, Curbs, Gutters, and Inlets
BAB000000-01717-6300-02225	Water Use for Construction and Operations
BAB000000-01717-6300-03300	Cast-in-Place Concrete-Surface
BAB000000-01717-6300-04230	Reinforced Unit Masonry
BAB000000-01717-6300-05120	Metal Fabrications
BABBA0000-01717-6300-15060	Mechanical Piping
BABBA0000-01717-6300-15140	Supports and Anchors
BABBD0000-01717-6300-15175	Condensate Receiving System
BABBA0000-01717-6300-15190	Mechanical Identification
BABBA0000-01717-6300-15260	Piping Insulation
BABBA0000-01717-6300-15310	Fire Protection Piping
BABBA0000-01717-6300-15335	Dry Pipe Sprinkler Systems
BABBD0000-01717-6300-15480	Compressed Air System
BABBA0000-01717-6300-15482	Diesel Fuel Oil System
BAB000000-01717-6300-16050	Basic Electrical Materials and Methods
BAB000000-01717-6300-16110	Conduit
BABBD0000-01717-6300-16112	Underground Ducts and Manholes
BAB000000-01717-6300-16122	600 V Power and Control Cable
BAB000000-01717-6300-16130	Pull and Junction Boxes
BAB000000-01717-6300-16131	Outlet Boxes
BAB000000-01717-6300-16141	Wiring Devices
BAB000000-01717-6300-16152	Packaged Mechanical Equipment
BAB000000-01717-6300-16195	Electrical Identification
BAB000000-01717-6300-16405	NEMA Frame Induction Motors (Small)
BAB000000-01717-6300-16450	Grounding
BAB000000-01717-6300-16481	Low Voltage Motor Starters
BAB000000-01717-6300-16501	Lamps
BAB000000-01717-6300-16502	Fixture Accessories
BABBD0000-01717-6300-16512	High Intensity Discharge Lights
BAB000000-01717-6300-16671	Lighting Protection Systems

4. Calculations

BABCC0000-01717-0200-00001	Muck Storage Pad Analysis
BABBA0000-01717-0200-00001	Buildings Ground Grid Calculations
BABBD0000-01717-0200-00001	Compressed Air System Pad Foundation Analysis

4. Calculations (continued)

BABBDA000-01717-0200-00002	Standby Generator Fuel System Analysis
BABBDA000-01717-0200-00003	North Portal Fuel Storage System Fire Hazard Analysis
BABBDA000-01717-0200-00005	Generator Pad Foundation Analysis
BABBDA000-01717-0200-00006	Site Lighting Foundation Analysis
BABBDA000-01717-0200-00007	Diesel Fuel Storage Tank Foundation Analysis
BABBDF000-01717-0200-00023	North Portal Surface - Based Compressed Air System Analysis

5. Inputs

BAB000000-01717-6300-00002	ESF Basis for Design Document
BAB000000-01717-2200-00010	Determination of Importance Evaluation for the ESF Muck Storage Area and Conveyor/Muck Storage Area Access Road, Revision 0B
BABB00000-01717-2200-00010	Determination of Importance Evaluation for the ESF North Portal Pad, Revision 4B

ATTACHMENT 2

Review Team Selection Record

Review Team Selection Record

Complete only applicable items.

Area for Review	Reviewer's Name	Organization
1. Quality Assurance	James Blaylock	DOE
2. Systems Engineering	Kenneth Ashlock	M&O
3. Architect - Engineer	Richard Greenwold	RSN
4. Civil Engineering	Ralph Musick	RSN
5. Construction	William Hansmire	Kiewit/PB
6. Construction	Eugene Pokorny	REECO
7. Construction Management	Ralph Dresel	M&O
8. DIE Compliance	Peter Hastings	M&O
9. DIE	Richard Morissette	SAIC
10. Electrical Design	Terry Nelsen	RSN
11. Environmental	Edward McCann	SAIC
12. Fire Protection & Safety	Russell Baumeister	DOE
13. General Compliance	James Gardiner	DOE
14. HVAC & Mechanical Design	Bert Anzai	RSN
15. Licensing	Norman Simms	M&O
16. Specialty Engineering	James Robertson	M&O
17. Systems Engineering	William Law	M&O
18. Test Engineering	Richard Kovach	LANL
19. Underground Mining	William Kennedy	M&O
20.		
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Review Team Approved by:

W. Donovan Schutt



05/26/94

Printed Name

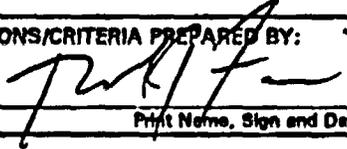
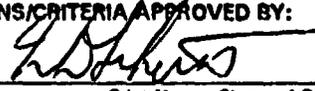
Signature

Date

ATTACHMENT 3

Document Review Records

Document Review Record

2a. DOCUMENT TITLE Design Package 1D - Surface Facilities		2b. REVISION N/A	2c. DATE 06/20/94	2d. DOCUMENT IDENTIFIER N/A
3a. FORWARD RESULTS TO Rick Fournier, 101 Convention Center Drive, Suite P-110, Las Vegas, NV 89109				3b. DUE DATE 06/20/94
4. REVIEWER INFORMATION				
Reviewer: <u>Russell B. Baumcister</u>		Area For Review: <u>Fire Protection and Safety</u>		
4a. Review Criteria Standard Review Criteria Apply? <input checked="" type="checkbox"/> Yes (Check all that apply) <input type="checkbox"/> Attachment IX <input checked="" type="checkbox"/> Attachment X <input type="checkbox"/> No - Attach or List Below Additional Review Criteria:		4b. Qualifications (Must check Yes or No) Yes No <input checked="" type="checkbox"/> <input type="checkbox"/> Trained to OCRWM Approved QA Program. <input checked="" type="checkbox"/> <input type="checkbox"/> Read QAP-3-1, Rev 5, <u>N/A</u> <input checked="" type="checkbox"/> <input type="checkbox"/> Four year degree from Accredited Institution (experience may be substituted for). <input checked="" type="checkbox"/> <input type="checkbox"/> Years experience required: <u>4</u> <input checked="" type="checkbox"/> <input type="checkbox"/> Independent (see instructions). <input type="checkbox"/> <input checked="" type="checkbox"/> Additional Reading or qualifications listed below.		
6. REVIEW INSTRUCTIONS/CRITERIA PREPARED BY: <u>Richard J. Fournier</u>  <u>05/26/94</u> Print Name, Sign and Date		6. REVIEW INSTRUCTIONS/CRITERIA APPROVED BY: <u>W. Donovan Schutt</u>  <u>05/26/94</u> Print Name, Sign and Date		
7. CERTIFICATIONS 7a. I certify that I have completed the required reading and/or training requirements in 4b. _____ Reviewer Signature Date 7b. I certify the reviewer identified above has the qualifications listed in 4b. _____ Supervisor Signature Date		8. CONCURRENCE WITH COMMENT INCORPORATION INTO FINAL DRAFT: 8a. _____ Draft/Rev. Number Concurred with 8b. _____ Signature of Reviewer Date		

PRELIMINARY PREDECISIONAL DRAFT MATERIAL

2a. DOCUMENT TITLE Design Package 1D - Surface Facilities	2b. REVISION N/A	2c. DATE 06/20/94	2d. DOCUMENT IDENTIFIER N/A
3a. FORWARD RESULTS TO Rick Fournier, 101 Convention Center Drive, Suite P-110, Las Vegas, NV 89109			3b. DUE DATE 06/20/94
4. REVIEWER INFORMATION Reviewer: <u>James Blaylock</u> Area For Review: <u>Quality Assurance</u>			
4a. Review Criteria Standard Review Criteria Apply? <input checked="" type="checkbox"/> Yes (Check all that apply) <input type="checkbox"/> Attachment IX <input checked="" type="checkbox"/> Attachment X <input type="checkbox"/> No - Attach or List Below Additional Review Criteria:		4b. Qualifications (Must check Yes or No) Yes No <input checked="" type="checkbox"/> <input type="checkbox"/> Trained to OCRWM Approved QA Program. <input checked="" type="checkbox"/> <input type="checkbox"/> Read QAP-3-1, Rev 5, <u>N/A</u> <input checked="" type="checkbox"/> <input type="checkbox"/> Four year degree from Accredited Institution (experience may be substituted for). <input checked="" type="checkbox"/> <input type="checkbox"/> Years experience required: <u>4</u> <input checked="" type="checkbox"/> <input type="checkbox"/> Independent (see instructions). <input type="checkbox"/> <input checked="" type="checkbox"/> Additional Reading or qualifications listed below.	
5. REVIEW INSTRUCTIONS/CRITERIA PREPARED BY: Richard J. Fournier <u>[Signature]</u> 05/26/94 <small>Print Name, Sign and Date</small>		6. REVIEW INSTRUCTIONS/CRITERIA APPROVED BY: W. Donovan Schutt <u>[Signature]</u> 05/26/94 <small>Print Name, Sign and Date</small>	
7. CERTIFICATIONS 7a. I certify that I have completed the required reading and/or training requirements in 4b. _____ <small>Reviewer Signature Date</small> 7b. I certify the reviewer identified above has the qualifications listed in 4b. _____ <small>Supervisor Signature Date</small>		8. CONCURRENCE WITH COMMENT INCORPORATION INTO FINAL DRAFT: 8a. _____ <small>Draft/Rev. Number Concurred with</small> 8b. _____ <small>Signature of Reviewer Date</small>	

PRELIMINARY PREDECISIONAL DRAFT MATERIAL

2a. DOCUMENT TITLE Design Package 1D - Surface Facilities	2b. REVISION N/A	2c. DATE 06/20/94	2d. DOCUMENT IDENTIFIER N/A
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3a. FORWARD RESULTS TO Rick Fournier, 101 Convention Center Drive, Suite P-110, Las Vegas, NV 89109	3b. DUE DATE 06/20/94
--	--------------------------

4. REVIEWER INFORMATION

Reviewer: Ralph R. Dresel Area For Review: Construction Management

4a. Review Criteria
Standard Review Criteria Apply?
 Yes (Check all that apply)
 Attachment IX
 Attachment X
 No - Attach or List Below
 Additional Review Criteria:

4b. Qualifications (Must check Yes or No)
 Yes No
 Trained to OCRWM Approved QA Program.
 Read QAP-3-1, Rev 5, N/A
 Four year degree from Accredited Institution (experience may be substituted for).
 Years experience required: 4
 Independent (see instructions).
 Additional Reading or qualifications listed below.

5. REVIEW INSTRUCTIONS/CRITERIA PREPARED BY:
 Richard J. Fournier [Signature] 05/26/94
 Print Name, Sign and Date

6. REVIEW INSTRUCTIONS/CRITERIA APPROVED BY:
 W. Donovan Schutt [Signature] 05/26/94
 Print Name, Sign and Date

7. CERTIFICATIONS

7a. I certify that I have completed the required reading and/or training requirements in 4b.

 Reviewer Signature Date

7b. I certify the reviewer identified above has the qualifications listed in 4b.

 Supervisor Signature Date

8. CONCURRENCE WITH COMMENT INCORPORATION INTO FINAL DRAFT:

8a. _____
 Draft/Rev. Number Concurred with

8b. _____
 Signature of Reviewer Date

PRELIMINARY PREDECISIONAL DRAFT MATERIAL

Document Review Record

2a. DOCUMENT TITLE Design Package 1D - Surface Facilities		2b. REVISION N/A	2c. DATE 06/20/94	2d. DOCUMENT IDENTIFIER N/A	
3a. FORWARD RESULTS TO Rick Fournier, 101 Convention Center Drive, Suite P-110, Las Vegas, NV 89109				3b. DUE DATE 06/20/94	
4. REVIEWER INFORMATION					
Reviewer: <u>Richard C. Greenwold</u>			Area For Review: <u>Architecture</u>		
4a. Review Criteria			4b. Qualifications (Must check Yes or No)		
Standard Review Criteria Apply?			Yes No		
<input checked="" type="checkbox"/> Yes (Check all that apply)			<input checked="" type="checkbox"/> <input type="checkbox"/> Trained to OCRWM Approved QA Program.		
<input type="checkbox"/> Attachment IX			<input checked="" type="checkbox"/> <input type="checkbox"/> Read QAP-3-1, Rev 5, <u>N/A</u>		
<input checked="" type="checkbox"/> Attachment X			<input checked="" type="checkbox"/> <input type="checkbox"/> Four year degree from Accredited Institution (experience may be substituted for).		
<input type="checkbox"/> No - Attach or List Below			<input checked="" type="checkbox"/> <input type="checkbox"/> Years experience required: <u>4</u>		
Additional Review Criteria:			<input checked="" type="checkbox"/> <input type="checkbox"/> Independent (see instructions).		
			<input type="checkbox"/> <input checked="" type="checkbox"/> Additional Reading or qualifications listed below.		
5. REVIEW INSTRUCTIONS/CRITERIA PREPARED BY:			6. REVIEW INSTRUCTIONS/CRITERIA APPROVED BY:		
Richard J. Fournier <u>[Signature]</u> 05/26/94 <small>Print Name, Sign and Date</small>			W. Donovan Schutt <u>[Signature]</u> 05/26/94 <small>Print Name, Sign and Date</small>		
7. CERTIFICATIONS			8. CONCURRENCE WITH COMMENT INCORPORATION INTO FINAL DRAFT:		
7a. I certify that I have completed the required reading and/or training requirements in 4b.			8a. _____ <small>Draft/Rev. Number Concurred with</small>		
_____ <small>Reviewer Signature</small>			_____ <small>Signature of Reviewer</small>		
_____ <small>Date</small>			_____ <small>Date</small>		
7b. I certify the reviewer identified above has the qualifications listed in 4b.					
_____ <small>Supervisor Signature</small>					
_____ <small>Date</small>					

PRELIMINARY PREDECISIONAL DRAFT MATERIAL

2a. DOCUMENT TITLE Design Package 1D - Surface Facilities		2b. REVISION N/A	2c. DATE 06/20/94	2d. DOCUMENT IDENTIFIER N/A
3a. FORWARD RESULTS TO Rick Fournier, 101 Convention Center Drive, Suite P-110, Las Vegas, NV 89109				3b. DUE DATE 06/20/94
4. REVIEWER INFORMATION				
Reviewer: <u>Peter S. Hastings</u>		Area For Review: <u>DIE Compliance</u>		
4a. Review Criteria Standard Review Criteria Apply? <input checked="" type="checkbox"/> Yes (Check all that apply) <input type="checkbox"/> Attachment IX <input checked="" type="checkbox"/> Attachment X <input type="checkbox"/> No - Attach or List Below Additional Review Criteria:		4b. Qualifications (Must check Yes or No) Yes No <input checked="" type="checkbox"/> <input type="checkbox"/> Trained to OCRWM Approved QA Program. <input checked="" type="checkbox"/> <input type="checkbox"/> Read QAP-3-1, Rev 5, <u>N/A</u> <input checked="" type="checkbox"/> <input type="checkbox"/> Four year degree from Accredited Institution (experience may be substituted for). <input checked="" type="checkbox"/> <input type="checkbox"/> Years experience required: <u>4</u> <input checked="" type="checkbox"/> <input type="checkbox"/> Independent (see instructions). <input type="checkbox"/> <input checked="" type="checkbox"/> Additional Reading or qualifications listed below.		
6. REVIEW INSTRUCTIONS/CRITERIA PREPARED BY: Richard J. Fournier <u>[Signature]</u> 05/26/94 <small>Print Name, Sign and Date</small>		6. REVIEW INSTRUCTIONS/CRITERIA APPROVED BY: W. Donovan Schutt <u>[Signature]</u> 05/26/94 <small>Print Name, Sign and Date</small>		
7. CERTIFICATIONS 7a. I certify that I have completed the required reading and/or training requirements in 4b. _____ Reviewer Signature Date 7b. I certify the reviewer identified above has the qualifications listed in 4b. _____ Supervisor Signature Date		8. CONCURRENCE WITH COMMENT INCORPORATION INTO FINAL DRAFT: 8a. _____ Draft/Rev. Number Concurred with 8b. _____ Signature of Reviewer Date		

PRELIMINARY PREDECISIONAL DRAFT MATERIAL

2a. DOCUMENT TITLE Design Package 1D - Surface Facilities	2b. REVISION N/A	2c. DATE 06/20/94	2d. DOCUMENT IDENTIFIER N/A
3a. FORWARD RESULTS TO Rick Fournier, 101 Convention Center Drive, Suite P-110, Las Vegas, NV 89109			3b. DUE DATE 06/20/94
4. REVIEWER INFORMATION Reviewer: <u>Richard Kovach</u> Area For Review: <u>Test Engineering</u>			
4a. Review Criteria Standard Review Criteria Apply? <input checked="" type="checkbox"/> Yes (Check all that apply) <input type="checkbox"/> Attachment IX <input checked="" type="checkbox"/> Attachment X <input type="checkbox"/> No - Attach or List Below Additional Review Criteria:		4b. Qualifications (Must check Yes or No) Yes No <input checked="" type="checkbox"/> <input type="checkbox"/> Trained to OCRWM Approved QA Program. <input checked="" type="checkbox"/> <input type="checkbox"/> Read QAP-3-1, Rev 5, <u>N/A</u> <input checked="" type="checkbox"/> <input type="checkbox"/> Four year degree from Accredited Institution (experience may be substituted for). <input checked="" type="checkbox"/> <input type="checkbox"/> Years experience required: <u>4</u> <input checked="" type="checkbox"/> <input type="checkbox"/> Independent (see instructions). <input type="checkbox"/> <input checked="" type="checkbox"/> Additional Reading or qualifications listed below.	
5. REVIEW INSTRUCTIONS/CRITERIA PREPARED BY: <u>Richard J. Fournier</u>  <u>05/26/94</u> <small>(Print Name, Sign and Date)</small>		6. REVIEW INSTRUCTIONS/CRITERIA APPROVED BY: <u>W. Donovan Schutt</u>  <u>05/26/94</u> <small>(Print Name, Sign and Date)</small>	
7. CERTIFICATIONS 7a. I certify that I have completed the required reading and/or training requirements in 4b. _____ <small>Reviewer Signature Date</small> 7b. I certify the reviewer identified above has the qualifications listed in 4b. _____ <small>Supervisor Signature Date</small>		8. CONCURRENCE WITH COMMENT INCORPORATION INTO FINAL DRAFT: 8a. _____ <small>Draft/Rev. Number Concurred with</small> 8b. _____ <small>Signature of Reviewer Date</small>	

PRELIMINARY PREDECISIONAL DRAFT MATERIAL

2a. DOCUMENT TITLE Design Package 1D - Surface Facilities		2b. REVISION N/A	2c. DATE 06/20/94	2d. DOCUMENT IDENTIFIER N/A
3a. FORWARD RESULTS TO Rick Fournier, 101 Convention Center Drive, Suite P-110, Las Vegas, NV 89109				3b. DUE DATE 06/20/94
4. REVIEWER INFORMATION				
Reviewer: <u>Edward W. McCann</u>		Area For Review: <u>Environmental</u>		
4a. Review Criteria Standard Review Criteria Apply? <input checked="" type="checkbox"/> Yes (Check all that apply) <input type="checkbox"/> Attachment IX <input checked="" type="checkbox"/> Attachment X <input type="checkbox"/> No - Attach or List Below Additional Review Criteria:		4b. Qualifications (Must check Yes or No) Yes No <input checked="" type="checkbox"/> <input type="checkbox"/> Trained to OCRWM Approved QA Program. <input checked="" type="checkbox"/> <input type="checkbox"/> Read QAP-3-1, Rev 5, <u>N/A</u> <input checked="" type="checkbox"/> <input type="checkbox"/> Four year degree from Accredited Institution (experience may be substituted for). <input checked="" type="checkbox"/> <input type="checkbox"/> Years experience required: <u>4</u> <input checked="" type="checkbox"/> <input type="checkbox"/> Independent (see instructions). <input type="checkbox"/> <input checked="" type="checkbox"/> Additional Reading or qualifications listed below.		
6. REVIEW INSTRUCTIONS/CRITERIA PREPARED BY: Richard J. Fournier <u>[Signature]</u> 05/26/94 <small>Print Name, Sign and Date</small>		6. REVIEW INSTRUCTIONS/CRITERIA APPROVED BY: W. Donovan Schutt <u>[Signature]</u> 05/26/94 <small>Print Name, Sign and Date</small>		
7. CERTIFICATIONS 7a. I certify that I have completed the required reading and/or training requirements in 4b. _____ Reviewer Signature Date 7b. I certify the reviewer identified above has the qualifications listed in 4b. _____ Supervisor Signature Date		8. CONCURRENCE WITH COMMENT INCORPORATION INTO FINAL DRAFT: 8a. _____ Draft/Rev. Number Concurred with 8b. _____ Signature of Reviewer Date		

PRELIMINARY PREDECISIONAL DRAFT MATERIAL

2a. DOCUMENT TITLE Design Package 1D - Surface Facilities		2b. REVISION N/A	2c. DATE 06/20/94	2d. DOCUMENT IDENTIFIER N/A	
3a. FORWARD RESULTS TO Rick Fournier, 101 Convention Center Drive, Suite P-110, Las Vegas, NV 89109					3b. DUE DATE 06/20/94
4. REVIEWER INFORMATION					
Reviewer: <u>Ralph G. Musick</u>			Area For Review: <u>Civil Engineering</u>		
4a. Review Criteria		4b. Qualifications (Must check Yes or No)			
Standard Review Criteria Apply?		Yes No			
<input checked="" type="checkbox"/> Yes (Check all that apply)		<input checked="" type="checkbox"/> <input type="checkbox"/> Trained to OCRWM Approved QA Program.			
<input type="checkbox"/> Attachment IX		<input checked="" type="checkbox"/> <input type="checkbox"/> Read QAP-3-1, Rev 5, <u>N/A</u>			
<input checked="" type="checkbox"/> Attachment X		<input checked="" type="checkbox"/> <input type="checkbox"/> Four year degree from Accredited Institution (experience may be substituted for).			
<input type="checkbox"/> No - Attach or List Below		<input checked="" type="checkbox"/> <input type="checkbox"/> Years experience required: <u>4</u>			
Additional Review Criteria:		<input checked="" type="checkbox"/> <input type="checkbox"/> Independent (see instructions).			
		<input type="checkbox"/> <input checked="" type="checkbox"/> Additional Reading or qualifications listed below.			
5. REVIEW INSTRUCTIONS/CRITERIA PREPARED BY:			6. REVIEW INSTRUCTIONS/CRITERIA APPROVED BY:		
Richard J. Fournier <u><i>[Signature]</i></u> 05/26/94			W. Donovan Schutt <u><i>[Signature]</i></u> 05/26/94		
<small>Print Name, Sign and Date</small>			<small>Print Name, Sign and Date</small>		
7. CERTIFICATIONS			8. CONCURRENCE WITH COMMENT INCORPORATION INTO FINAL DRAFT:		
7a. I certify that I have completed the required reading and/or training requirements in 4b.			8a. _____		
_____			Draft/Rev. Number Concurred with		
<small>Reviewer Signature</small>			<small>Date</small>		
7b. I certify the reviewer identified above has the qualifications listed in 4b.			8b. _____		
_____			Signature of Reviewer		
<small>Supervisor Signature</small>			<small>Date</small>		

PRELIMINARY PREDECISIONAL DRAFT MATERIAL

Document Review Record

2a. DOCUMENT TITLE Design Package 1D - Surface Facilities		2b. REVISION N/A	2c. DATE 06/20/94	2d. DOCUMENT IDENTIFIER N/A
3a. FORWARD RESULTS TO Rick Fournier, 101 Convention Center Drive, Suite P-110, Las Vegas, NV 89109				3b. DUE DATE 06/20/94
4. REVIEWER INFORMATION				
Reviewer: <u>Terry G. Nelson</u>		Area For Review: <u>Electrical Design</u>		
4a. Review Criteria Standard Review Criteria Apply? <input checked="" type="checkbox"/> Yes (Check all that apply) <input type="checkbox"/> Attachment IX <input checked="" type="checkbox"/> Attachment X <input type="checkbox"/> No - Attach or List Below Additional Review Criteria:		4b. Qualifications (Must check Yes or No) Yes No <input checked="" type="checkbox"/> <input type="checkbox"/> Trained to OCRWM Approved QA Program. <input checked="" type="checkbox"/> <input type="checkbox"/> Read QAP-3-1, Rev 5, <u>N/A</u> <input checked="" type="checkbox"/> <input type="checkbox"/> Four year degree from Accredited Institution (experience may be substituted for). <input checked="" type="checkbox"/> <input type="checkbox"/> Years experience required: <u>4</u> <input checked="" type="checkbox"/> <input type="checkbox"/> Independent (see instructions). <input type="checkbox"/> <input type="checkbox"/> Additional Reading or qualifications listed below.		
5. REVIEW INSTRUCTIONS/CRITERIA PREPARED BY: Richard J. Fournier <u>[Signature]</u> 05/26/94 Print Name, Sign and Date		5. REVIEW INSTRUCTIONS/CRITERIA APPROVED BY: W. Donovan Schutt <u>[Signature]</u> 05/26/94 Print Name, Sign and Date		
7. CERTIFICATIONS 7a. I certify that I have completed the required reading and/or training requirements in 4b. _____ Reviewer Signature Date 7b. I certify the reviewer identified above has the qualifications listed in 4b. _____ Supervisor Signature Date		8. CONCURRENCE WITH COMMENT INCORPORATION INTO FINAL DRAFT: 8a. _____ Draft/Rev. Number Concurred with 8b. _____ Signature of Reviewer Date		

PRELIMINARY PREDECISIONAL DRAFT MATERIAL

Document Review Record

1

2a. DOCUMENT TITLE Design Package 1D - Surface Facilities		2b. REVISION N/A	2c. DATE 06/20/94	2d. DOCUMENT IDENTIFIER N/A
3a. FORWARD RESULTS TO Rick Fournier, 101 Convention Center Drive, Suite P-110, Las Vegas, NV 89109				3b. DUE DATE 06/20/94
4. REVIEWER INFORMATION				
Reviewer: <u>Eugene W. Pokorny</u>		Area For Review: <u>Construction</u>		
4a. Review Criteria Standard Review Criteria Apply? <input checked="" type="checkbox"/> Yes (Check all that apply) <input type="checkbox"/> Attachment IX <input checked="" type="checkbox"/> Attachment X <input type="checkbox"/> No - Attach or List Below Additional Review Criteria:		4b. Qualifications (Must check Yes or No) Yes No <input checked="" type="checkbox"/> <input type="checkbox"/> Trained to OCRWM Approved QA Program. <input checked="" type="checkbox"/> <input type="checkbox"/> Read QAP-3-1, Rev 5, <u>N/A</u> <input checked="" type="checkbox"/> <input type="checkbox"/> Four year degree from Accredited Institution (experience may be substituted for). <input checked="" type="checkbox"/> <input type="checkbox"/> Years experience required: <u>4</u> <input checked="" type="checkbox"/> <input type="checkbox"/> Independent (see instructions). <input type="checkbox"/> <input checked="" type="checkbox"/> Additional Reading or qualifications listed below.		
6. REVIEW INSTRUCTIONS/CRITERIA PREPARED BY: Richard J. Fournier <u>[Signature]</u> 05/26/94 <small>Print Name, Sign and Date</small>		6. REVIEW INSTRUCTIONS/CRITERIA APPROVED BY: W. Donovan Schutt <u>[Signature]</u> 05/26/94 <small>Print Name, Sign and Date</small>		
7. CERTIFICATIONS 7a. I certify that I have completed the required reading and/or training requirements in 4b. _____ Reviewer Signature Date 7b. I certify the reviewer identified above has the qualifications listed in 4b. _____ Supervisor Signature Date		8. CONCURRENCE WITH COMMENT INCORPORATION INTO FINAL DRAFT: 8a. _____ Draft/Rev. Number Concurred with 8b. _____ Signature of Reviewer Date		

PRELIMINARY PREDECISIONAL DRAFT MATERIAL

2a. DOCUMENT TITLE Design Package 1D - Surface Facilities		2b. REVISION N/A	2c. DATE 06/20/94	2d. DOCUMENT IDENTIFIER N/A	
3a. FORWARD RESULTS TO Rick Fournier, 101 Convention Center Drive, Suite P-110, Las Vegas, NV 89109				3b. DUE DATE 06/20/94	
4. REVIEWER INFORMATION					
Reviewer: <u>Richard P. Morissette</u>			Area For Review: <u>DIE Requirements</u>		
4a. Review Criteria		4b. Qualifications (Must check Yes or No)			
Standard Review Criteria Apply?		Yes No			
<input checked="" type="checkbox"/> Yes (Check all that apply)		<input checked="" type="checkbox"/> <input type="checkbox"/> Trained to OCRWM Approved QA Program.			
<input type="checkbox"/> Attachment IX		<input checked="" type="checkbox"/> <input type="checkbox"/> Read QAP-3-1, Rev 5, <u>N/A</u>			
<input checked="" type="checkbox"/> Attachment X		<input checked="" type="checkbox"/> <input type="checkbox"/> Four year degree from Accredited Institution (experience may be substituted for).			
<input type="checkbox"/> No - Attach or List Below		<input checked="" type="checkbox"/> <input type="checkbox"/> Years experience required: <u>4</u>			
Additional Review Criteria:		<input checked="" type="checkbox"/> <input type="checkbox"/> Independent (see instructions).			
		<input type="checkbox"/> <input checked="" type="checkbox"/> Additional Reading or qualifications listed below.			
5. REVIEW INSTRUCTIONS/CRITERIA PREPARED BY: Richard J. Fournier <u>[Signature]</u> 05/26/94 <small>Print Name, Sign and Date</small>			6. REVIEW INSTRUCTIONS/CRITERIA APPROVED BY: W. Donovan Schutt <u>[Signature]</u> 05/26/94 <small>Print Name, Sign and Date</small>		
7. CERTIFICATIONS			8. CONCURRENCE WITH COMMENT INCORPORATION INTO FINAL DRAFT:		
7a. I certify that I have completed the required reading and/or training requirements in 4b.			8a. _____ Draft/Rev. Number Concurred with		
_____ Reviewer Signature Date			8b. _____ Signature of Reviewer Date		
7b. I certify the reviewer identified above has the qualifications listed in 4b.					
_____ Supervisor Signature Date					

PRELIMINARY PREDECISIONAL DRAFT MATERIAL

ATTACHMENT 4

M&O QAP-3-1, Technical Document and Milestone Review

**Civilian Radioactive Waste
Management System**

**Management & Operating
Contractor**

WBS: 9.2.1

QA: QA

DI: A00000000-01717-5001-00011

QUALITY ADMINISTRATIVE PROCEDURE

**Title: TECHNICAL DOCUMENT AND
MILESTONE REVIEW**

Procedure Number: QAP-3-1

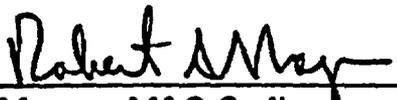
Revision: 5

Effective Date: May 20, 1994

Author: Richard J. Fournier

Responsible Manager: George A. Carruth

Approvals:



Manager, M&O Quality Assurance

5-13-94
Approval Date



General Manager, CRWMS M&O

5/13/94
Approval Date

CONTROLLED COPY
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PRELIMINARY PREDECISIONAL DRAFT MATERIAL

1. PURPOSE

This procedure establishes the process for reviewing technical document(s) prepared by Civilian Radioactive Waste Management System (CRWMS) Management and Operating (M&O) Contractor personnel. The process described herein may also be used to conduct independent technical and management reviews, called milestone reviews.

2. SCOPE

This QAP applies to those technical documents subject to DOE/RW-0333P, Quality Assurance Requirements and Description (QARD), not otherwise covered by applicable QAPs for which technical review is required by the Office of Civilian Radioactive Waste Management (OCRWM) or the M&O contractor.

3. APPLICABLE DEFINITIONS

- 3.1 Mandatory Comment** - Comment that identifies: a conflict or deviation from M&O or OCRWM policy, or QA program requirements; a substantial change to existing processes/practices; or an issue that does not meet stated review criteria.
- 3.2 Milestone Reviews** - Independent technical and management reviews associated with an established program or project milestone (e.g., 50 percent Design Review, 90 percent Design Review, etc.).
- 3.3 Review Coordinator** - The individual who assists the Department Manager or Review Leader in the conduct of a review of a technical document or collection of documents.
- 3.4 Review Leader** - The individual who has primary responsibility for conducting a milestone review.
- 3.5 Technical Document** - A document that specifies scientific or engineering requirements, presents scientific or engineering information or data, or describes scientific or engineering processes.

4. RESPONSIBILITIES

- 4.1** The Systems Integration Manager is responsible for the preparation and maintenance of this procedure.

4.2 The following have responsibilities in this QAP:

- A. Assistant General Manager**
- B. Department Manager**
- C. Interfacing and Affected Managers**
- D. Lead Document Preparer**
- E. Reviewers**
- F. Review Coordinator**
- G. Review Leader**
- H. Reviewer's Supervisor**

5. PROCEDURE

5.1 GENERAL INSTRUCTIONS

5.1.1 Reviews within the scope of this QAP evaluate :

- A. All aspects of the document, or proposed change.**
- B. Compliance with QA requirements.**
- C. Consistency with controlling baseline documentation.**
- D. Potential program impacts.**

5.1.2 The review is conducted to:

- A. Ensure applicability, correctness, technical adequacy, completeness, and accuracy of the document(s).**
- B. Prevent or minimize interferences, discrepancies, or omissions.**
- C. Ensure coordination between interfacing disciplines.**

5.1.3 Technical documents issued for review under this procedure, shall have a unique document identifier assigned by the local configuration management organization.

5.1.4 When the M&O is directed by OCRWM to conduct a document review in accordance with the QARD on a document prepared outside the M&O, that review shall be conducted in accordance with this procedure unless OCRWM directs the M&O to perform that review in accordance with another OCRWM approved QA program document review procedure.

5.1.5 OCRWM or other CRWMS participants may be requested to participate in reviews conducted by the M&O. In such cases, the OCRWM or participant representative will perform in accordance with the M&O procedures.

- 5.1.6** For reviews other than milestone reviews, the Department Manager shall select a Review Coordinator, usually the originator of the document being reviewed. For milestone reviews, the Assistant General Manager shall select a Review Leader and a Review Coordinator to conduct the milestone review.
- 5.1.7** For individuals to perform the role of a reviewer in accordance with this procedure, they shall be qualified as follows:
- A.** M&O reviewers shall be trained in accordance with the M&O QA program.
 - B.** Non-M&O reviewers who are currently working under an OCRWM approved QA program shall have been trained in the QARD and read the current revisions of the M&O procedures they will perform work to. Document reading/training in accordance with employee's QA program.
 - C.** Non-M&O reviewers who are not currently working under an OCRWM approved QA program shall be trained to the QARD and read the current revisions of the M&O procedures they will perform work to. The Review Coordinator shall accomplish a training waiver in accordance with M&O QA program for any training not required. Document reading/training in accordance with location M&O QA program.

5.2 INITIATING A REVIEW

5.2.1 The Review Coordinator shall:

- A.** Prepare the Review Notice (Attachment D) in accordance with the Review Notice Instructions (Attachment II).
- B.** Prepare and assemble the review package (e.g., analyses, specifications, calculations, studies, drawings, or other technical documents). Each package, as a minimum, shall consist of the following:
 - 1.** Copies of the technical document(s) to be reviewed.
 - 2.** Copy of the Technical Document Preparation Plan(s) (TDPP), if one has been prepared. TDPPs are not required for milestone reviews.

- 5.2.2 The Department Manager and the Review Coordinator, and for milestone reviews, the Review Leader, shall:**
- A. Identify areas of expertise for which reviewers are needed by utilizing the Review Team Selection Worksheet (Attachment III), considering the content of the document(s) being reviewed. Also, identify minimum qualifications (educational and experience) for each area required. Qualifications shall include the requirement that the reviewer be technically competent in the area being reviewed.**
 - B. Request managers of interfacing and affected managers to identify reviewers for the areas of expertise identified in 5.2.2 A.**
- 5.2.3 Interfacing and Affected Managers - Identify personnel within their organization who are qualified to perform the review in the area of expertise identified.**
- 5.2.4 The Review Coordinator shall prepare the Review Team Selection Record (Attachment IV) for the Department Manager's or Review Leader's approval. The review shall be performed by individuals other than the originator of the document(s) being reviewed. Each organization or technical discipline affected by the document(s) shall be included on the review team. The review team shall include the following, as a minimum: a Quality Assurance representative, a Systems Engineering representative, and a Regulatory representative if the document(s) is to support licensing. Changes to the document shall be reviewed by those organizations or technical disciplines affected by the change, including a Quality Assurance and System Engineering representative.**
- 5.2.5 The Department Manager or Review Leader approves the review team by signing the Review Team Selection Record.**
- 5.2.6 The Review Coordinator shall:**
- A. Initiate a Document Review Record (Attachment V) for each reviewer (Blocks 1-3), using the Document Review Record Instructions (Attachment VI).**
 - B. Document the review criteria for each reviewer on a Document Review Record (Block 4 and 4a). The review criteria shall include any review criteria identified in the TDPP, if applicable, and/or developed using Attachments IX and X as guidelines.**
 - C. Document reviewer's specific reading/training requirements and qualifications in Block 4b of the Document Review Record.**

D. Complete Block 5 of the Document Review Record (s).

5.2.7 The Department Manager or Review Leader shall approve the review information by completing the Document Review Record (s) (Block 6).

5.2.8 The Review Coordinator shall forward the Document Review Record to the reviewer. Any review instructions specific to the review may also be included.

5.2.9 Reviewers shall:

A. Complete any required reading or classroom training identified in Block 4b of the Document Review Record. Document reading/training in accordance with Section 5.1.7 A, B, or C, whichever is applicable.

B. Complete Block 7a on the Document Review Record.

5.2.10 Reviewers' supervisors shall:

A. Complete Block 7b of the Document Review Record to indicate that the reviewer has completed the required reading and/or training, is qualified (i.e., has the necessary education and experience) to perform the review in the area identified in Block 4, and has been briefed regarding review responsibilities.

B. Return a copy of the Document Review Record to the reviewer.

C. Forward the Document Review Record to the individual indicated in Block 3, after the completion of Block 7b and prior to starting the review.

5.2.11 After receipt of the Document Review Record with Blocks 7a and 7b completed, the Review Coordinator shall forward the package, a copy of the Document Review Record, and a Comment Form (Attachment VII) to the identified reviewers. Provide access to pertinent background information or data not readily available.

5.2.12 For milestone reviews, the Review Leader shall ensure that an overview presentation of the package is presented to the reviewers in conjunction with the review. For all other reviews, an overview of the document should be presented to the reviewers.

5.3 TECHNICAL DOCUMENT REVIEW

5.3.1 The reviewer shall:

- A. Review the package, using assigned review criteria to ensure technical adequacy of the document, within assigned area of expertise.**
- B. Record mandatory comments on the Comment Form, with only one comment per page (Attachment VII, Blocks 1-4). Non-Mandatory comments, such as editorial notations, which could clarify the document or provide constructive suggestions on improving its readability, may be marked directly on the copy of the technical document, or may be recorded on separate sheets. Non-Mandatory comments submitted on the Comment Form must be indicated as non-mandatory by checking the box provided on the Comment Form.**
- C. Record "No Comment" on a Comment Form, if there are no mandatory comments.**
- D. Number comments sequentially in Block 1.**
- E. Sign and date all Comment Form(s) in Block 5.**
- F. Forward the Comment Form(s) to the individual identified in Block 3 on the Document Review Record.**
- G. Mandatory comments not submitted by the required response date may be treated as non-mandatory.**

5.4 COMMENT RESOLUTION

5.4.1 The Review Coordinator shall:

- A. Follow up with any reviewers who have not returned the Comment Form(s).**
- B. Number the mandatory comments in a manner that ensures accountability for all mandatory comments (Block 6).**
- C. Ensure responses to comments are developed and documented (for mandatory comments) on the Comment Form(s) (Block 7) with the individual writing the response signing and dating block 8. If the response indicates disagreement with the comment, a reason shall be provided. Also, the individual writing the response should contact the reviewer to clarify the comment and thereby, prevent the unnecessary rejection of a comment.**

- D. Forward the Comment Form(s), with responses to each mandatory comment, to the appropriate reviewer(s).**

5.4.2 The document reviewers shall:

- A. Review the response to each comment for acceptability.**
- B. Indicate agreement with the responses to mandatory comments by signing and dating the Reviewer's Acceptance of Response (Block 9) of the Comment Form.**
- C. If a response to a mandatory comment is not acceptable, write "rejected," initial, and date in Block 7. A reason for rejecting the response shall be included. Also, the reviewer should contact the individual who signed Block 8 to clarify the response and thereby, prevent the unnecessary rejection of the response.**
- D. Forward Comment Form(s) to the Review Coordinator.**

5.4.3 The Review Coordinator shall:

- A. Review the Comment Form(s) to ensure that all responses to mandatory comments have been accepted.**
- B. Schedule, in coordination with the Department Manager and Review Leader, a comment resolution meeting if necessary.**
- C. If mandatory comments cannot be resolved, escalate to progressively higher levels of management, until resolution is obtained. Once a rejected comment/response has been resolved, document the resolution on the Comment Form in Block 7.**
- D. In the case where escalation of the comment resolution was required, the level of management that achieves resolution shall sign block 9 of the Comment Form.**
- E. Ensure that all mandatory comment resolutions have been incorporated into the document(s). Provide reviewers an opportunity to review the final draft to verify comment resolutions were satisfactorily incorporated.**

- F. Completed Document Review Record Block 8a by entering draft or revision number which all reviewers concurred with in Section 5.4.3 E. Ensure that Document Review Record (s) are completed and that Block 8b (concurrence with updated document) has been signed and dated.
- G. Update the records package for the document(s) to reflect the resolutions and submit the records package in accordance with Section 6.

6. RECORDS

Lifetime and non-permanent QA records resulting from implementation of this procedure shall be submitted to the Local Records Center in accordance with QAP-17-1.

- 6.1 There are no lifetime QA records generated by this procedure.
- 6.2 Non-permanent QA records generated are: the Review Notice, the Review Team Selection Record, completed Document Review Records, and the review package as it was distributed for review.

7. ATTACHMENTS

The forms listed below shall be used with this QAP. Modifications to any attached form shall only be by change or revision to this QAP.

ATTACHMENT	TITLE	FORM	DATE
I	Review Notice	0340	05/12/94
II	Instructions for Completing the Review Notice		
III	Review Team Selection Worksheet	0347	05/12/94
IV	Review Team Selection Record	0521	05/12/94
V	Document Review Record	0032	05/12/94
VI	Instructions for Completing the Document Review Record		
VII	Comment Form	00330	05/12/94
VIII	Instructions for Completing the Comment Form		
IX	Standard Technical Document Review Criteria		
X	Suggested Milestone Review Topics		

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2. Technical Document Review Milestone Review
 Other _____

3. Document(s) Title

4. Document(s) Identifier

5. Drawings Studies Design Reports
 Specifications Analyses Other Technical Documents

6. Purpose of Review

7. Scope of Review

8. Appointments

Review Leader _____ Review Coordinator _____

9a. Print Name	9b. Signature	9c. Date
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ATTACHMENT II

**INSTRUCTIONS FOR COMPLETING
THE REVIEW NOTICE**

**Block
Number**

1. Enter QA designator and page number.
2. Check the appropriate block for type of review (select one only).
3. Enter the document title(s) or Design Package description (use separate sheets for additional titles if needed).
4. Enter the document identifier. Document identifier will be assigned by local Configuration Management Organization (use separate sheets, if needed). Enter N/A for design packages.
5. Check the type of technical document(s) being reviewed.
6. Enter the purpose of the review. This should answer "why" is the review being performed.
7. Enter the scope of the review. Either list the document(s) being reviewed or clearly describe the design package.
8. For reviews other than milestone reviews, enter "N/A" for the Review Leader and the name of the Review Coordinator as appointed by the Department Manager. For milestone reviews, enter the names of the Review Leader and Review Coordinator as appointed by the Assistant General Manager.
9. For milestone reviews, the Assistant General Manager responsible for the review prints name, signs, and dates to indicate approval to initiate the review.

For all others, the Department Manager prints name, signs, and dates to indicate approval to initiate the review.

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Review Team Selection Worksheet

Function:	Yes	No		Yes	No
Architect-Engineer	<input type="checkbox"/>	<input type="checkbox"/>	Systems Integration	<input type="checkbox"/>	<input type="checkbox"/>
Civil Engineering	<input type="checkbox"/>	<input type="checkbox"/>	Structural Analysis	<input type="checkbox"/>	<input type="checkbox"/>
Concept of Operations	<input type="checkbox"/>	<input type="checkbox"/>	Test Engineering	<input type="checkbox"/>	<input type="checkbox"/>
Construction	<input type="checkbox"/>	<input type="checkbox"/>	Thermal Analysis	<input type="checkbox"/>	<input type="checkbox"/>
Construction Management	<input type="checkbox"/>	<input type="checkbox"/>	Thermal Hydraulics	<input type="checkbox"/>	<input type="checkbox"/>
Contracting Office	<input type="checkbox"/>	<input type="checkbox"/>	Transportation	<input type="checkbox"/>	<input type="checkbox"/>
Criticality Analysis	<input type="checkbox"/>	<input type="checkbox"/>	Transportation Requirements (10CFR71)	<input type="checkbox"/>	<input type="checkbox"/>
Criticality Safety	<input type="checkbox"/>	<input type="checkbox"/>	Underground Mining	<input type="checkbox"/>	<input type="checkbox"/>
DIE Compliance	<input type="checkbox"/>	<input type="checkbox"/>	Waste Acceptance	<input type="checkbox"/>	<input type="checkbox"/>
Disposal Requirements (MGDS)	<input type="checkbox"/>	<input type="checkbox"/>	Others		
Dose Assessment	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Electrical Design	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Environmental	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Fire Protection	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Geochemistry	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Geohydrology	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Geology	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Geomechanics	<input type="checkbox"/>	<input type="checkbox"/>	_____		
HVAC	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Human Engineering	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Instruments and Controls	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Licensing/Regulatory	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Manufacturing Engineering	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Materials Engineering	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Mechanical Design	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Nuclear Safety	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Outreach Support	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Performance Assessment	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Power Distribution	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Quality Assurance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____		
Radiation Exposure (Shielding)	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Regulatory and Licensing	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Reliability, Availability and Maintainability	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Remote Operations	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Safeguards and Security	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Safety	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Storage Requirements (10CFR72)	<input type="checkbox"/>	<input type="checkbox"/>	_____		
System Safety	<input type="checkbox"/>	<input type="checkbox"/>	_____		
Systems Engineering	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____		

Review Team Selection Record

Complete only applicable items.

Area for Review	Reviewer's Name	Organization
1. Quality Assurance		
2. Systems Engineering		
3.		
4.		
5.		
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30.		

Review Team Approved by:

ATTACHMENT VI

INSTRUCTIONS FOR COMPLETING THE DOCUMENT REVIEW RECORD

Block
Number

Review Coordinator

1. Enter page number.
2. Enter the Document or Package Title, the Revision Number, Document Date, and Document Identifier. For Design Packages mark N/A for Document Identifier. For additional space, use separate sheets.
3. Enter the name of the individual the comments are to be forwarded to and the date due
4. Enter reviewer's name and the area in which he/she is to perform their review.
- 4a. Check either Yes or No depending on whether the standard review criteria apply. If Yes is checked, you must also check which (one or both) of the Attachment(s) apply. By checking an attachment, all of the review criteria in that attachment apply. If No is checked, either attach a separate sheet listing the review criteria or list the review criteria in the space provided. If a separate sheet is attached, indicate that (for example, write "See Attached") in the space provided for review criteria.
- 4b. Check Yes or No depending on which of the qualifications are desired based on the review being performed. For the reading of this procedure, indicate in the space provided after Revision 5, any Procedure Change Notice(s), if applicable, or N/A if there are none. For year of experience, indicate in the space provided the number of years of experience in the area of review required for this review. Indicate whether the reviewer is required to be independent, i.e., be an individual other than the originator of the document(s) being reviewed. If Yes is checked for additional reading or qualifications, list them below in the space provided or attach separate sheets.
5. Identify the preparer of the applicable review criteria by printing name, signing, and dating.

Department Manager

6. Department Manager, Review Leader, or designee prints name, signs, and dates indicating approval of review criteria.

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ATTACHMENT VI

**INSTRUCTIONS FOR COMPLETING THE
DOCUMENT REVIEW RECORD (Continued)**

Document Reviewer

- 7a. Signs and dates before beginning review to attest to the fact that the reviewer has completed the required reading and/or training.**

Reviewer's Supervisor

- 7b. Signs and dates before reviewer begins review attesting that the reviewer has completed required reading and that reviewer is qualified to perform review in identified technical area as identified in 4b. The supervisor's signature also attests that the supervisor has briefed the reviewer on their responsibilities.**

Review Coordinator

- 8a. Identifies which draft or revision number of the document(s) concurred with.**

Document Reviewer

- 8b. Signs and dates indicating: all review criteria was considered and commented on if necessary; reviewer's comments were satisfactorily incorporated; other reviewer's comment incorporation was acceptable; and concurrence with the draft or revision of the document(s) as stated in Block 8a above.**

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2. DOCUMENT TITLE		2a. REVISION	2b. DATE	6. COMMENT NUMBER
3. DOCUMENT IDENTIFIER				
4. COMMENT		7. RESPONSE		
4a. Section/Paragraph: _____ 4b. Requirement: _____ <input type="checkbox"/> 4c. Non-Mandatory (No response required)				
5. REVIEWED BY:		6. RESPONSE BY:		
_____ Printed Name & Signature		_____ Printed Name & Signature		
_____ Title		_____ Date		
9. REVIEWER'S ACCEPTANCE OF RESPONSE:				
_____ Printed Name & Signature		_____ Date		

ATTACHMENT VIII

INSTRUCTIONS FOR COMPLETING THE COMMENT FORM

**Block
Number**

Document Reviewer

1. Enters page number.
2. Enters document title, revision Number, and date, of the document to which the comment pertains.
3. Enters document identifier of the document to which the comment pertains.
4. Write comment in the Comments block. If additional space is needed, attach separate sheets.
 - 4a. Enters specific section/paragraph number, and line number, as applicable.
 - 4b. Reference requirement number not adequately satisfied or missing (e.g. SDR 3.2.1.1, etc.).
 - 4c. Indicates if the comment is non-mandatory by checking block provided.
5. Signs and dates "Reviewed By" block.

Review Coordinator

6. Numbers all mandatory comments in a manner to ensure accountability of all comments.
7. Develops or obtains responses to comments. If the response indicates disagreement with the comment, a reason shall be provided.

ATTACHMENT VIII

INSTRUCTIONS FOR COMPLETING THE COMMENT FORM (Continued)

**Block
Number**

Review Coordinator

8. The individual preparing the response shall sign and date the "Response By" block. If additional space is needed, attach separate sheets. Responses may be attached on separate sheets, providing Block 7 indicates separate sheets are attached.

Document Reviewer

9. Signs and dates "Reviewer's Acceptance of Response" block, if the response is acceptable. If the response is unacceptable, reviewer so indicates in the Response block, or in a space adjacent to the response on a separate page.

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ATTACHMENT IX

STANDARD TECHNICAL DOCUMENT REVIEW CRITERIA

These standard review criteria may be used to determine the acceptability of the document reviewed:

1. Was the document prepared in accordance with the TDPP, if required?
2. Were the inputs correctly selected and incorporated?
3. Are assumptions used in the development of the technical document stated explicitly? Are they reasonable? When necessary, are the assumptions identified for subsequent re-verifications when the detailed activities are completed?
4. Is document content consistent with established CRWMS program objectives?
5. In the case of a design document, is the design approach compatible with CRWMS objectives and constraints and with prescribed system engineering requirements?
6. Have the computer programs required by the technical document been verified?
7. Are analytical and design approaches and results reasonable and appropriate?
8. If referenced standards contain conflicting requirements, is the requirement that governs dictated?
9. If the technical document is for design, are the following requirements evident: basic functions of items, performance, regulatory, technical, security, and safety?
10. Are applicable interfaces identified and documented?
11. Are responsibilities for interface requirements delineated?
12. If there are any constraints on required interfaces, are they described adequately?
13. Does document comply with prior commitments and regulations?
14. Are the QA records adequate, accurate, and properly documented?

ATTACHMENT IX

STANDARD TECHNICAL DOCUMENT REVIEW CRITERIA (Continued)

15. Can design inputs be traced to design outputs and vice versa?
16. Have system components been classified in accordance with QAP-2-0 or 2-3?
17. Are QA controls properly identified for items important to safety, waste isolation, or test interference?

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ATTACHMENT X

SUGGESTED MILESTONE REVIEW TOPICS

1. Were the design inputs correctly selected and incorporated?
2. Are assumptions necessary to perform the design activity adequately described and reasonable? Where necessary, are the assumptions identified for subsequent reverifications when the detailed design activities are completed?
3. Was an appropriate design method used?
4. Is the design output reasonable compared to design inputs?
5. Are the necessary design input and verification requirements for interfacing organizations specified in the design documents or in supporting procedures or instructions?
6. Are the applicable codes, standards, and regulatory, functional, and technical requirements, including issue and addenda, properly identified and are their requirements for design met?
7. Have all computer codes used in the design analysis been validated and verified on the computer systems used in the analysis? Are these computer codes appropriate for the application and range for which they are used?
8. Were design, design verification, and peer review (as applicable) procedures correctly implemented?
9. Have qualified and certified materials and parts been specified where appropriate?
10. Is the design specified producible by conventional means?
11. Does the design adequately consider maintainability, operability, reliability, and radiological safety?
12. Are the appropriate quality and QA requirements satisfied?
13. Have applicable construction and operating experiences been considered?

ATTACHMENT X

SUGGESTED MILESTONE REVIEW TOPICS (Continued)

14. **Have the design interface requirements been satisfied?**
15. **Are the specified parts, equipment, and processes suitable for the required application?**
16. **Are the specified materials compatible with each other and the design environmental conditions to which the material will be exposed?**
17. **Have adequate maintenance features and requirements been specified?**
18. **Are accessibility and other design provisions adequate for performance of needed maintenance, in-service inspection, and repair?**
19. **Has the design properly considered radiation exposure to the public and plant personnel?**
20. **Are the acceptance criteria incorporated in the design documents sufficiently detailed and specific to allow verification that design requirements have been satisfactorily accomplished?**
21. **Have adequate pre-operational and subsequent periodic test requirements been appropriately specified? Have provisions for testing been incorporated into the design?**
22. **Are adequate handling, storage, cleaning, and shipping requirements specified?**
23. **Are adequate identification requirements for control of items and materials specified?**
24. **Are requirements for record preparation, submitted review, approval, and retention, adequately specified?**

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