

YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION

QUALITY ASSURANCE SURVEILLANCE REPORT OF

SANDIA NATIONAL LABORATORIES

SURVEILLANCE NUMBER YMP-SR-91-015

CONDUCTED APRIL 22 THROUGH APRIL 24, 1991

ACTIVITIES SURVEILLED:

PREPARATION AND REVIEW OF THE SYSTEM REQUIREMENTS,
SYSTEM DESCRIPTION, REPOSITORY DESIGN REQUIREMENTS, AND
EXPLORATORY SHAFT FACILITY DESIGN REQUIREMENTS DOCUMENTS
AND THE ASSOCIATED WORK PLANS, INTERFACE INTERACTIONS,
DESIGN INVESTIGATION CONTROL, AND ASSOCIATED PERSONNEL TRAINING

Prepared by: Donald J. Harris Date 5/29/91

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Concurred by: Terry W. Noland Date 5/29/91

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Approved by: J. Blaylock Date 5/31/91

Donald G. Horton
Director
Yucca Mountain Quality Assurance Division

1.0 INTRODUCTION

This report contains the results of Yucca Mountain Quality Assurance Division (YMQAD) Surveillance YMP-SR-91-015 of Sandia National Laboratories (SNL), conducted in Albuquerque, New Mexico, from April 22 through 24, 1991, to verify compliance and effective implementation of approved SNL implementing procedures.

2.0 PURPOSE AND SCOPE

The purpose of this surveillance was to evaluate the effectiveness of the implementation of certain SNL quality procedures associated with the preparation and review of the System Requirements (SR), System Description (SD), Respository Design Requirements (RDR), Exploratory Shaft Facility Design (ESFDR) documents, the associated work plans, interface interactions, Design Investigation Control, and associated personnel training. The scope of the surveillance included the following criteria and their attendant procedures:

<u>Criterion</u>	<u>Title</u>
II	QA Program Department Operating Procedure (DOP) 2-3, Revision A, Interim Change Notice (ICN) No. 2, Work Plans DOP 2-6, Revision D, ICN No. 2, Qualification and Certification of Personnel
III	Design Control Quality Assurance Implementing Procedure (QAIP) 3-4, Revision 00, ICN No. 1, Design Investigation Control DOP 3-13, Revision C, Independent Technical and Management Review of Documents DOP 3-16, Revision A, ICN No. 1, Interface Interactions

3.0 SURVEILLANCE PERSONNEL

The surveillance was conducted by the following personnel:

Donald J. Harris, Surveillance Team Leader, Senior Quality Assurance Engineer, Harza Engineering Company/YMQAD

Terry W. Noland, Principal Engineer, Westinghouse Electric Company/YMQAD

Kenneth T. McFall, Quality Assurance Scientist, Science Applications International Corporation/YMQAD

4.0 SUMMARY OF SURVEILLANCE RESULTS

The implementing procedures listed in Section 2.0 of this report were the source of questions used to conduct this surveillance. Checklists generated from these documents were used to determine compliance. The following results were obtained during the surveillance.

1. DOP 2-3, Revision A, ICN No. 2, "Work Plans"

The surveillance team reviewed SNL Work Plans 1.2.1.2.1, Revision 1, and 1.2.6.1.1, Revision 0, covering SNL's preparation of the SD, SR, RDR, and ESFDR (Volume I and Appendix A) documents. The work plans were found to meet the content and format requirements and were reviewed and approved in accordance with the DOP.

2. DOP 2-6, Revision D, ICN No.2, "Qualification and Certification of Personnel"

The surveillance team reviewed the training records for those personnel who were involved in the preparation and review of the SD, SR, RDR, ESFDR, Work Plans, Interaction Task Memos (ITMs), and Design Investigation Memos (DIMs) associated with SNL's involvement in the preparation of the design documents. The following personnel were verified as appropriately trained.

<u>Name</u>	<u>Organization</u>	<u>DOP 3-13</u>	<u>DOP 2-3</u>	<u>DOP 3-16</u>	<u>QAIP 3-4</u>
+ L. Klamerus	SNL	X	X	X	
+ A. Morales	SNL		X		X
o T. Hersum	SNL		X		
+ A. Stevens	SNL	X			X
o J. Voight	SNL			X	X
o R. Sandoval	SNL	X		X	
o R. Craig	USGS	X			
o D. Wagg	T&MSS	X			
o R. Rommel	REECo	X			
o B. Foster	T&MSS	X			
+ M. Davenport	T&MSS	X			
+ N. Elkins	LANL	X			
+ T. Pysto	T&MSS	X			
o S. Smith	T&MSS	X			
+ R. Jurani	RSN	X			
o B. Anzai	RSN	X			
+ T. Greiner	RSN	X			
o R. Coppage	RSN	X			
o J. Schelling	SNL	X			
o B. Stanley	SNL	X			
+ B. Hutchinson	DOE	X			

<u>Name</u>	<u>Organization</u>	<u>DOP 3-13</u>	<u>DOP 2-3</u>	<u>DOP 3-16</u>	<u>QAIP 3-4</u>
+ C. Pflum	T&MSS	X			
+ R. Schreiner	RSN	X			
+ P. Gehner	T&MSS	X			
+ R. Finley	SNL	X			

NOTE: o = Verified training by data base printout
+ = Verified training by reviewing hard copy and data base printout.

3. QAIP 3-4, Revision 00, ICN No.1, "Design Investigation Control"

The Surveillance Team reviewed DIM 247, Revision 1, which was prepared to guide SNL's responsibilities in the preparation of the SD, SR, RDR, and ESFDR. This DIM was found to meet the format, content, review, and approval requirements of the QAIP.

4. DOP 3-13, Revision C, "Independent Technical and Management Reviews of Documents"

The Surveillance Team examined the review package cover letters for the SD, SR, RDR, and ESFDR. The cover letters specified the purpose of the revision, the review procedure DOP 3-13, review criteria document change information, and the ESF requirements evaluation. The designated reviewers completed their reviews, and documented them on document review and comment forms, except for several instances which are documented on Corrective Action Request (CAR) YMP-91-044. Where, contrary to the procedure, several comments were attached to one Document Review and Comment (DRC) form or the DRC stated "see attached" and the form included marked-up copies of the document, in lieu of one comment per one DRC form. The SD and SR review packages submitted to the Local Records Center (LRC) (as of April 24, 1991, the LRC had not performed receipt inspection of the records packages) did not have objective evidence that the RD-2, Review Record form, had been completed to provide objective evidence of incorporation of the reviewer's comments.

The surveillance team originally classified the RDR and the ESFDR as design input documents based the document titles, and felt that the RDR and the ESFDR required a QA review in addition to the technical reviews performed by SNL. The YMQAD was telephoned to confirm the RDR and ESFDR classification as design input documents and the applicability of SNL Quality Assurance Program Plan (QAPP), Section 3.11, "Design Input Requirements" (specifically Section 3.11.1) and QAIP 3-4, "Design Investigation Control," (specifically Section 4.1, first note) which requires a QA review in addition to the technical review. Based on that telephone conversation, a draft CAR was initiated to document that a QA review was not performed.

This potential condition adverse to quality was documented on CAR YMP-91-043. Subsequently, a meeting was held on May 2, 1991, with the YMQAD Division Director and the Program Control Supervisor. This meeting resulted in the invalidation of CAR YMP-91-043, based on the RDR and ESFDR documents not being classified as design input documents and SNL not being the designated design organization. When Raytheon Services Nevada, the designated YMP design organization, selects the appropriate design input, they will be responsible for both the technical and QA review of the design input.

5. DOP 3-16, Revision A, ICN Nos. 1 & 2, "Interface Interactions"

The Surveillance Team reviewed ITM Nos. 010, Revision 0 and 012, Revision 1, which defined and controlled tasks associated with the preparation of the SD, SR, RDR, and ESFDR between two or more Participants or internal SNL organizations. These ITMs were found to meet the format and content requirements specified by the DOP.

6. Examination of Flow-Down Requirements

The Surveillance Team examined the flow-down of requirements from the Waste Management System Requirements Document, Volume IV (WMSR IV), to the SNL Yucca Mountain Mined Geologic Disposal SD Document, the SNL Yucca Mountain Mined Geologic Disposal SR Document, the SNL Yucca Mountain Mined Geologic Disposal RDR Document, and the SNL ESFDR Document. These documents were found to contain an adequate inclusion of the WMSR IV requirements and constraints. The requirements in WMSR IV were reflected in the SD and the SR and, in turn, the requirements of the SD and the SR were reflected in the RDR and the ESFDR.

7. QAIP 17-2, Revision 00, "Data Records Management System"

Only the SD and SR review packages had been authenticated and submitted to the LRC (as of May 4, 1991 the SD and SR documentation packages had not been receipt inspected for compliance to QAIP 17-2 by the LRC personnel). The review packages for the RDR and ESFDR documents were still in preparation for submittal to the LRC.

5.0 PERSONNEL CONTACTED DURING THE COURSE OF THE SURVEILLANCE

Arthur R. Morales
Gene A. Smit, QA Engineer
Alice P. Hotchkiss, Records Manager
Jim Voight, QA staff member
Mary Tang, Training Manager
Jim Teak, Resident Integrator
C. E. Foreman, QA staff member

6.0 MEASURING AND TEST EQUIPMENT USED DURING THE SURVEILLANCE

There was no measuring and/or test equipment used during the course of this surveillance.

7.0 SURVEILLANCE TEAM EVALUATION

It is the Surveillance Team opinion that SNL QA Program was implemented effectively for the activities associated with the preparation and review of the SD, SR, RDR, and ESFDR documents. The training associated with this activity was documented, tracked, and very efficiently retrieved for review by the Surveillance Team.

8.0 SYNOPSIS OF DEFICIENCIES

The following CARs were generated as a result of this surveillance:

YMP-91-043 - No QA reviews of design input documents. This CAR was invalidated by the YMPO. See Section 4.0, Item 4, for details.

YMP-91-044 - 1) DOP 3-13, Paragraph 5.2 and Appendix RD-3, DRC form instructions require the recording of review comments on the DRC form; one comment per DRC form. Contrary to the requirement, there were several instances where numerous comments were attached to the DRC form or marked-up pages of the review document were submitted. 2) DOP 3-13, Paragraph 5.4 requires a verification that the resolved comments have been incorporated into the reviewed document and, when the reviewer is satisfied, he/she signs and dates the RD-2 review records. Contrary to the requirements, the LRC Center has no objective evidence that the RD-2 form was initiated.

9.0 RECOMMENDATIONS

This surveillance generated the following recommendations.

1. It is recommended that DOP 3-13, Revision 3, be revised to clarify that the review requester, at his/her discretion, may allow review comments on the document referenced by item number on the DRC form in lieu of recording each comment on a different DRC form. The DRC form instructions should also provide this alternate method of recording review comments.
2. It is recommended that QAIP 3-4, Revision 00, be revised to remove the first note in Paragraph 4.1, requiring QA review of design input documents.

10.0 REQUIRED ACTIONS

Response to the CAR delineated in Section 8.0 of this report is due within the time frame stated in Block 10. Upon response and satisfactory verification of all remedial and corrective actions, the CAR will be closed and YMQAD will notify SNL (by letter) of the closure.

INFORMATION COPY

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

5-9-91

14CAR NO.: YM-91-044
 DATE: MAY 30, 1991
 SHEET: 1 OF 2
 QA
 WBS No.: 1.2.5.2.2

CORRECTIVE ACTION REQUEST

1 Controlling Document DOP 3-13, REV. C.		2 Related Report No. YMF-SR-91-015	
3 Responsible Organization SNL DEPT. 6311		4 Discussed With Bob Richards, QA Manager and Gene A. Smit, QA	
10 Response Due 20 days after issue	11 Responsibility for Corrective Action SNL	12 Stop Work Order Y or N N	
5 Requirement: 1a. Para. 5.2 states in part: Reviewers - conduct reviews and record comments on Block 7-9 of the DRC. 1b. Appendix RD-3 Document Review and Comment Form, Instruction. Item B, states in part: Comments will be recorded in the "reviewers" portion of the form, one comment per DRC form. 2. DOP 3-13 para. 5.4 for reviewed documents that do not have a separate approval page. Verify that the comment resolutions have been incorporated into the reviewed document when satisfied with all resolutions sign and date the RD-2 Review Records.			
6 Adverse Condition: 1. Contrary to the requirements: SR Reviewer - Schelling - DRC page 1 of DRC's included statement, see attached, - Page 2 of DRC contained 6 comments. SD Reviewer - Schelling 6 comments with one DRC Form Sandoval 1 DRC form with 9 marked-up pages RDR Reviewer - Kalamerus DRC form provided required information, but a marked-up page was provided with the DRC form. ESFDR Reviewers, Sandoval, Pflum and Schelling provided DRC's with numerous comments attached.			
7 Recommended Action(s): Revise DOP 3-13 to allow latitude and/or address Project Office Approval Documents.			
8 Initiator D. J. Harris 4/24/91 <i>D. J. Harris</i>	9 Severity Level - 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input checked="" type="checkbox"/>	13 Approved By: _____ Date: _____ OOA Catherine Hargis 5/2/91	
15 Verification of Corrective Action:			
16 Corrective Action Completed and Accepted: QAR _____ Date _____		17 Closure Approved By: OOA _____	

ENCLOSURE 2

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

5-9-91
CAR NO.: YMP-91-044
DATE: MAY 30, 1991
SHEET: 2 OF 2

CORRECTIVE ACTION REQUEST
(continuation sheet)

6 Adverse Condition (continued)

2. The Records Packages submitted to Records Center have no object evidence that form RD-2 was initiated. The DRC form itself does not provide objective evidence of incorporation of comments.