# PROJECT OFFICE QUALITY ASSURANCE AUDIT REPORT YUCCA MOUNTAIN PROJECT AUDIT OF HOLMES & NARVER, INC.

AUDIT NUMBER \$89-1

# CONDUCTED: NOVEMBER 1 - 4, 1988

Prepared By: ephen Dana Lead Auditor

H.

Division Manager, Audits

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La Date: 1-6-89 Margaret Brake Lead Tech. Specialist

Approved By:

Date: 6/04 \$9

Approved By:

Jomo Blank	Date:	1/31/87
James Blaylock		
Project Quality Manager		

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**ENCLOSURE** 

#### EXECUTIVE SUMMARY

#### PROJECT OFFICE AUDIT REPORT NO. \$89-1

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HOLMES & NARVER, INC

LAS VEGAS, NEVADA

#### NOVEMBER 01 - 04, 1988

In the opinion of the Project Office audit team the overall H&N design control program is marginally effective for this stage of the design cycle (i.e., Title I). It is evident that essential elements of the program need to be strengthened and/or enhanced prior to start of Title II. For example:

- o Greater involvement by H&N QA in the design control process is necessary;
- Procedures should be re-reviewed to ensure they meet the requirements of the H&N QAPP; and
- o Design procedures should be re-analyzed to assure they conform to the design process required by the H&N QAPP. For example, design personnel appear to be implementing the design control at a level above the procedural requirements. H&N design personnel are to be commended for identifying procedural weaknesses and overcoming those weaknesses via their implementation of good design practice. However, if a procedural weakness is identified, the procedures must be revised to ensure that consistency in guality of the product (design output) is maintained.

It should be pointed out that all H&N personnel interviewed were very knowledgeable of their assigned tasks and responsibilities, and were all concerned with providing a quality product.

Ten deficiencies were identified during the course of the audit. The audit team also generated fifteen observations (two of which are directed to the Project Office) and two recommendations. SDR No. 117, which was identified during Project Office Audit 88-2, has been closed and reissued as SDR No. 117, Rev. 1, because the verification of corrective action was found unacceptable during the audit.

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## 1.0 INTRODUCTION

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This report contains the results of a Quality Assurance Audit of the Holmes & Narver (H&N) support of the Yucca Mountain Project (YMP). The audit was conducted at the H&N facilities in Las Vegas, NV, on November 1 through November 4, 1988. The audit was conducted in accordance with the requirements of the Yucca Mountain Project Quality Assurance Plan (QAP), NVO-196-17, Rev. 5, and Quality Management Procedure (QMP)-18-01, Rev. 3, "Audit System For The Waste Management Project Office."

#### 2.0 AUDIT SCOPE

The purpose of this audit was to evaluate the effectiveness of specific elements of the H&N Quality Assurance Program Plan (QAPP) and to verify the implementation of the Quality Assurance Program as it relates to the Yucca Mountain Project.

This was a supplemental audit and as such covered only specific subjects. The scope of the audit focused primarily on design control, specifically review of the H&N ESF Title I design activities. Programmatic elements 2, 5, 6, 16, 17, and 18 were also selected because these elements are integral to the design process. In addition, problem areas identified during Audit 88-02 were added to the audit scope to determine whether H&N is effectively implementing their program in these areas. Programmatic Element 1 (Organization) was added to the audit scope during the audit. The programmatic elements that were not included (see Section 4.2 of this report) in this audit were covered in-depth during Audit 88-02.

#### 3.0 AUDIT TEAM PERSONNEL

The audit team consisted of:

Stephen Dana	Lead Auditor	SAIC, Las Vega
William Camp	Auditor	SAIC, Las Vega
Frederick Ruth	Auditor	SAIC, Las Vega
Wendell Mansel	Auditor	YMP, Las Vegas
Catherine Hampton	Auditor Candidate	YMP, Las Vegas
Margaret Brake	Lead Technical Specialist	SAIC, Las Vega
John Jardine	Technical Specialist	SAIC, Las Vega
Naiem Tanious	Observer	NRC, Washington
John Gilray	Observer	NRC, Las Vegas
William Belke	Observer	NRC, Washington
Robert Brient	Observer	NRC, Washington
Robert Clark	Observer	WESTON, Washing
Arthur Watkins	Observer	WESTON, Washing
Susan Zimmerman	Observer	NWPO, Carson C
James Grubb	Observer	NWPO, Carson C
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#### 4.0 SUMMARY OF AUDIT RESULTS

#### 4.1 Statement of Program Effectiveness

In the opinion of the Project Office audit team the overall H&N design control program is marginally effective for this stage of the design cycle (i.e., Title I). It is evident that essential elements of the program need to be strengthened and/or enhanced prior to start of Title II. For example:

- a. Greater involvement by H&N QA in the design control process is necessary;
- b. Procedures should be re-reviewed to ensure they meet the requirements of the H&N QAPP; and
- c. Design procedures should be reanalyzed to assure they conform to the design process required by the H&N QAPP. For example, design personnel appear to be implementing design control at a level above the procedural requirements.

In addition, H&N is not effectively providing timely implementation of proposed corrective action to Project Office SDRs and Observations. For example:

- a. Haw effective date for proposed corrective action to SDR 117 (Project Office Audit 68-2) was September 02, 1988 (Reference, letter YMP:TPO:88-343, Calovini to Blaylock, dated August 31, 1988).
   Proposed corrective action to SDR 117 was verified, during Audit S89-1, as incomplete; and
- b. Effective date for proposed corrective action to Observation No. 7 (Project Office Audit 88-2) was 06/30/88. Proposed corrective action to Observation No. 7 was verified, during audit S89-1, as incomplete.

In the opinion of the audit team the following QA program elements were determined to be effectively implemented by H&N:

- 1.0 Organization
- 2.0 QA Program
- 5.0 Instructions, Procedures, and Drawings
- 6.0 Document Control
- 16.0 Corrective Action
- 17.0 Quality Assurance Records
- 18.0 Audits

#### 4.2 Summary

A total of ten Standard Deficiency Reports (SDRs) and fifteen observations, two of which are against the Project Office, were identified as a result of the audit. In addition, the audit team generated two recommendations for the consideration of the H&N Yucca Mountain Project staff. A synopsis of the SDRs and observations and the actual recommendations are contained in Section 6.0 of this report.

Deficiencies identified by the Project Office are qualified by severity level, which is related to the significance of the deficiency. A discussion of the severity levels is provided in Enclosure 1.

At the time of the audit, one SDR and seven observations remained open from the previous Project Office Audit (88-2). During the audit, the audit team verified that corrective action had been satisfactorily completed for observations No. 1, 2, 3, 5, 6, and 8. SDR No. 117 was verified as incomplete, was closed and reissued as SDR 117, Rev. 1. Observation No. 7 was verified as incomplete and SDR 249 was issued to document the deficiency.

The following program elements were deemed to be in compliance with the requirements of the H&N QAPP, Rev 1, and its implementing procedures:

- 1.0 Organization
- 2.0 QA Program
- 16.0 Corrective Action

Program elements in which the audit team identified deficiencies were:

- 3.0 Design Control
- 5.0 Instructions, Procedures, and Drawings
- 6.0 Document Control
- 17.0 QA Records
- 18.0 Audits

The following programmatic elements were not within the scope of this audit:

- 4.0 Procurement Document Control
- 7.0 Control of Purchased Material, Equipment, and Supplies
- 8.0 Identification and Control of Samples and Items
- 9.0 Control of Processes
- 10.0 Inspection
- 11.0 Test Control
- 12.0 Control of Measuring and Test Equipment
- 13.0 Handling, Storage, and Shipping
- 14.0 Inspection, Test, and Operating Status
- 15.0 Nonconforming Materials, Parts, or Components

# 4.2 Summary (Continued)

The following technical activities were reviewed as part of this audit:

1.2.6.2.2.1 - Power Systems
1.2.6.2.2.2 - Water Systems
1.2.6.2.2.4 - Mine Waste Water System
1.2.6.2.2.5 - Communications
1.2.6.3.1.7 - Surface Data Building
1.2.6.3.1 - Subsurface Data Building
1.2.6.7.1.1 - Subsurface Power System
1.2.6.7.1.2 - Life Safety System
1.2.6.9.3 - Data Cabling

## 5.0 AUDIT MEETINGS

## 5.1 Preaudit Conference

A preaudit conference was held with the H&N Technical Project Officer (TPO) and his staff at 10:00 a.m. on November 1, 1988. The purpose, scope and proposed agenda for the audit were presented. A list of attendees for this meeting is provided in Enclosure 2.

## 5.2 Postaudit Conference

The postaudit conference was held at 10:00 a.m. on November 4, 1988. A synopsis of the preliminary SDRs and observations identified during the course of the audit was discussed with the H&N TPO and his staff. A list of attendees for this meeting is also provided in Enclosure 2.

#### 6.0 SYNOPSIS OF SDRs, OBSERVATIONS, AND RECOMMENDATIONS

- 6.1 Standard Deficiency Reports (SDRs)
  - H&N has not developed and issued a procedure covering procurement for QA level I and II activities. This deficiency was previously identified in Project Office Audit 88-2, Observation No. 7. Refer to SDR No. 249, Severity Level 3.
  - 2. No Title I drawings have evidence of a drafting check. Refer to SDR No. 250, Severity Level 2.
  - 3. Work Initiations (WIs) have not been revised when criteria or work scope were revised. In addition, in the same WIs, the references to the Design Basis Document (DBD), Rev 2, and the SDRD, Rev 1, are incorrect. Refer to SDR No. 251, Severity Level 2.
  - 4. Some electrical and civil calculations audited do not contain sufficient detail such that the analysis can be understood, reviewed, and verified without the originator present. Refer to SDR No. 252, Severity Level 2.

# 6.1 Standard Deficiency Reports (Continued)

- 5. Document control activities for the H&N Design Basis Document (DBD) have not provided for the following:
  - a. A procedure that identifies assignment of responsibility for preparing, approving, and issuing the DBD.
  - b. A procedure that addresses review of the DBD for technical adequacy, completeness, and inclusion of appropriate quality requirements prior to approval and issuance. Refer to SDR No. 253, Severity Level 2.
- 6. Closed Corrective Action Reports (CARs) have not been transmitted to Records Management for processing. Refer to SDR No. 254, Severity Level 3.
- 7. Audit reports No. 87-02 and 87-10 do not address the effectiveness for each element audited. Refer to SDR No. 255, Severity Level 3.
- 8. H&N is not auditing Criterion 16 (Corrective Action) and Criterion 18 (Audits). Refer to SDR No. 256, Severity Level 2.
- 9. H&N procedures do not contain appropriate quantitative or qualitative acceptance criteria for determining that prescribed activities have been satisfactorily accomplished. Refer to SDR No. 257, Severity Level 2.
- 10. Appropriate quality requirements have not been included in some H&N procedures and where omissions have been corrected, the effort to correct these omissions has not been timely. Refer to SDR No. 258, Severity Level 2.

#### 6.2 Observations

- 1. It was observed during the H&N audit (S89-1) that no provisions had been made to establish design inputs for points where designs interface within the ESF. Refer to Observation No. S89-1-01.
- 2. H&N procedure NNWSI-029, Rev 1, requires the use of a "Design Interface Identification Sheet" (DIIS). Inquiring as to who is expected to prepare this form where H&N is not involved in a design interface, such as the case where F&S and Los Alamos/EG&G are the participants, it was learned that the DIIS was expected to be prepared by either of the two participants and then the DIIS would be forwarded to H&N for the preparation of System Interface Drawings (SIDs) and/or Component Interface Drawings (CIDs). Inquiring as to what procedure would require F&S and/or Los Alamos/EG&G to take such an action, it was learned that no procedural requirements govern this situation. Refer to Observation No. S89-1-02.

# 6.2 Observations (Continued)

- 3. No provisions are currently available within the H&N design program to establish applicable design inputs relevant to points at which design interfaces occur with external design organizations. Refer to Observation No. \$89-1-03.
- Neither H&N procedure NNWSI-014, Rev. 0, or NNWSI-005, Rev. 1, provide an effective means of identifying and controlling portions of design that have not been verified prior to release. Refer to Observation No. 589-1-04.
- 5. The survey work that was performed in March, 1988 was identified as a Level I activity during the last audit (88-2). The purpose of the survey work was to verify control points at the Nevada Test Site (NTS). Since there were no position descriptions for survey personnel at that time, H&N should evaluate each surveyor who performed work prior to H&N establishing position descriptions to determine whether they meet the minimum requirements. Refer to Observation No. S89-1-05.
- 6. Upon reviewing the indoctrination records of specific design personnel, the records indicate training was received to specific procedures but the procedure revision to which the training was conducted was not identified. In addition, indoctrination records of specific design personnel indicate training to the H&N QAPP was accomplished by the use of a project film which does not provide sufficient detail to the scope, purpose, methods of implementation, and applicability of the QAPP as it relates to the work to be accomplished. Refer to Observation No. S89-1-06.
- 7. No provisions are evident in H&N procedures NNWSI-003, Rev. 0, and NNWSI-005, Rev. 1, for the resolution and implementation of comments received during technical assessment reviews. Refer to Observation No. S89-1-07.
- 8. There is no method identified in H&N procedure NNWSI-006, Rev. 1, to define the need for analyses. The files for 1.2.6.7.1.2 (Life Safety Systems) and 1.2.6.9.3 (Data Cabling) should contain analyses to show why alternatives were selected, however, they do not. Refer to Observation No. S89-1-08.
- 9. Han QA has not been involved in the review, approval and/or acceptance of design inputs used for Title I design of the ESF. The deficiency has been identified by Han QA on CAR No. N-88-A-007. Refer to Observation No. S89-1-09.
- 10. H&N QA performs a review and approval of design output documents (drawings, specifications) prior to design verification; however, no review is performed subsequent to design verification. Refer to Observation No. S89-1-10.

# 6.2 Observations (Continued)

- 11. H&N procedure NNWSI-014, Rev. 0, does not address the H&N QAPP requirement that changes to previously verified designs shall require verification including evaluation of the effects of those changes on the overall design. The deficiency has been identified by H&N QA on CAR NO. N-88-A-009. Refer to Observation NO. S89-1-11.
- 12. A review of H&N Title I drawings revealed the following discrepancies:
  - a. Drawings were found that did not reference a QALAS; and
  - b. Drawings were found that reference unapproved QALAS.

Refer to Observation No. S89-1-12.

- 13. The H&N access list to the LRC files does not list the administrative personnel who have access, no names are given to designate who the personnel are. Refer to Observation No. S89-1-13.
  - 14. A H&N individual does not meet the position description in his file, the individual does not possess a degree which meets the position description requirements. The deficiency has been identified by H&N QA on CAR No. 88-S-005, Rev 1. Refer to Observation No. S89-1-14.
  - 15. Title I outline specifications are not being prepared and reviewed per H&N procedure NNWSI-003. Refer to Observation No. S89-1-15.

#### 6.3 Recommendations

#### Recommendation No. 1

At the present time H&N is evaluating the process by which numbers are assigned to procedures. It is recommended that H&N follow through on this effort as it is very difficult at this time to determine which procedures support the 18 criteria.

# Recommendation No. 2

At this time the H&N NNWSI Procedure Manual Index does not identify procedure NNWSI-026, "Microfilming and Archival Storage Services Facility (MASSF)", as a quality affecting procedure. This was discussed with H&N personnel and will be identified as a quality affecting procedure when the next revised index is issued.

# 7.0 REQUIRED ACTION

A written response is required for each Standard Deficiency Report (SDR) delineated in Section 6.0 above. The original copies of the SDRs were forwarded to the H&N TPO on December 21, 1988. Responses to each SDR are due 20 working days from the date of the SDR transmittal letter.

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# 7.0 REQUIRED ACTION (Continued)

Upon response, acceptance, and satisfactory verification of all remedial and corrective actions, the SDRs will be closed and H&N will be notified by letter of the closure.

A written response is required for 13 out of the 15 observations contained in Enclosure 4 of this report. Observations S89-1-01 and S89-1-02 require response by the Project Office. Responses are due 25 working days after the transmittal letter of this audit report.

Written responses are not required for the recommendations contained in this audit report. The recommendations were generated by the audit team for the H&N staff to consider during implementation of its Quality Assurance Program.

# ENCLOSURE 1

# Severity Levels

# Severity Level 1

Significant deficiencies considered of major importance. These deficiencies require remedial, investigative, and corrective actions to prevent recurrence.

#### Severity Level 2

A deficiency which is not of major importance, but may also require remedial, investigative, and/or corrective action to prevent recurrence.

# Severity Level 3

A minor deficiency in that only remedial action is required. These deficiencies are generally isolated in nature or have a very limited scope. In addition, the integrity of the end result of the activity is not affected nor does the deficiency affect the ability to achieve those results.

# AUDIT REPORT S89-1 ENCLOSURE 2

NAME	ORGANIZATION	TITLE	PREAUDIT CONFERENCE	DURING	POSTALDIT CONFERENCE
Aiello, Carolyn	hen	Training Coordinator	· X	x	x
Bautista, Cathy	Hen	Clerk II	X	X	
Belke, Bill	NRC	QA Project Manager	X	x	X
Brake, Marge	SAIC	Systems Engineer	X	X	X
Brient, Robert	NRC	QA Group Leader	X	X	X
Brown, Don	H&N	QA Engineer	X	X	X
Caldwell, Henry	SAIC	Manager, Audits			X
Calovini, Joseph	Hen	TPO	X		X
Camp, William	SAIC	QA Engineer	X	x	x
Chappell, Jill	H&N	Clerk II	X	X	X
Clark, Bob	WESTON	QA Engineer	X	x	X
Dana, Stephen	SAIC	QA Engineer	X	X	X
DeKlever, Richard	hen	Sr. QA Engineer	X	X	X
Gilray, John	NRC	Site Resident	X	x	X
Grubb, Jim	NWPO	Repository Engineer	X	x	
Hampton, Catherine	YMP	QA Specialist	X	X	X
Jardine, John	SAIC	QA Engineer	X	X	X
Mansel, Wendell	YMP	QA Engineer	X	X	
McGillicuddy, B.	Hen	Engineer	X	x	
Prestholt, Paul	NRC	On Site Rep.			x
Replogle, Jim	Hen	PE	x	X	X

# AUDIT REPORT \$89-1 (CONTINUED) ENCLOSURE 2

NAME	ORGANIZATION	TITLE	PREAUDIT CONFERENCE	DURING	POSTAUDIT CONFERENCE
Ruth, Frederick	SAIC	QA Engineer	· · ·	x	x
Schreiner, Randolph	HEN	Design Section Chief	X V	A W	
• •			A.	A	X
Sobol, Ronald	hen	QA Engineer	X	X	X
Tanious, Naiem	NRC	Geotechnical Engineer	X	X	X
Tuthill, H.	Hen	Sr. Project Engineer	X	X	X
Verden, Jan	H&N	Admin. Section Chief	X	X	x
Voltura, Nancy	YMP	QA			X
Wanniski, T.	Han	NVO Project Manager	X		x
Watkins, Arthur	WESTON	Mining Engineer	X	X	X
Wright, Carl	Han	Chief, QA	X	X	x
Yelvington, T.	Hen	Mgr. Technical Service	5 X	X	X
Zimmerman, Susan	NWPO	QA Manager	x	X	x

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# YMP AUDIT REPORT NO. S89-1

# ENCLOSURE 3

SDRS

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		5 Organization Holmes & Narver	6 Person(s) ( H. Tuthill/	Contacted C. Wright/D. Brown	7 Response Due Date is 20 Working Days from Date of Transmittal			
	<b>Originating QA</b>	<ul> <li>8 Requirement (Audit Checklist Reference, if Applicable) (Audit Checklist Item 2-6)</li> <li>1. Reference: WMPO letter JB-1158, dated 3/20/87, Vieth to TPOs, page 2, last paragraph, requires H&amp;N to issue revised procedures upon receipt of WMPO</li> </ul>						
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•	WMPO STANDARD DEFICIENCY REPORT CONTINUATION SHEET	N-QA-038 10/86
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	8 Requirement ( continued ) that it be revised, using the same number <sup>#</sup> , and <sup>#</sup> Attach or reference the approved criteria revision to the revised WI <sup>#</sup> .	
	9 Deficiency ( continued )	
	and the SDRD, Rev 1, are incorrect.	
	10 Recommended Actions ( continued )	
	<ol> <li>Provide a management control system to ensure that when design information changes, the effected documents are revised accordingly.</li> <li>Develop a plan to investigate what impact the incorrect design information identified in block 9 has had on the quality of design output documents. The plan should be provided with response to the SDR.</li> <li>Train appropriate personnel to revised procedural requirements.</li> </ol>	
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	2 XX		WMPO STAND	ARD DEFICIENCY REPO	N-QA-038 3/87		
/	c	1 Date Nov 29, 198	8 2 Se	verity Level 🗆 1 🛛 2 1	3 Page 1 of 2		
	Organization	3 Discovered During H&N Audit S89-01	3º Identified By M. Brake	3b Branch Chief Concurrence Date	4 SDR No. 252 Rev. 0		
		5 Organization Holmes & Narver	<pre>6 Person(s) R. Schrein</pre>	Contacted er/D. Brown	7 Response Due Date is 20 Working Days from Date of Transmittal		
	<b>Originating QA</b>	8 Requirement (Audit (Audit Checklis H&N NNWSI Quals para. III.C.1,	8 Requirement (Audit Checklist Reference, if Applicable) (Audit Checklist Item T-8) H&N NNWSI Quality Assurance Program Plan, Rev. 1, Section 3, "Design Control", para. III.C.1, "Design analysis shall be planned, controlled, and documented				
	à	9 Deficiency Contrary to the above requirement, electrical calculations audited do not contain sufficient detail such that the analysis can be derstood, reviewed, and verified without the originator present [E-0002, E-0] and E-0009]. In					
	Completed	<ol> <li>Recommended Action(s): I Remedial I Investigative I Correct. e</li> <li>Verify that all calculations (design analysis) are complete and can stand alone without the originator.</li> </ol>					
	Aprvl.	11 QAE/Lead Auditor		ch Manager Date 1 ms th 12/12/88	13 Project Quality Mgr. Date James Blaybork 12/19/88		
	nization in Block 5	14 Remedial/Investigat	ive Action(s)	15 Eff	ective Date		
	by Orga		lition & Corrective	Action to Prevent Recurre 17 Eff	ence ective Date		
	Completed	18 Signature/Date			, ,		
	4	19 Acce Response Reject	t Response	QAE/Lead Auditor/Date	Branch Manager/Date		
	Org.	20 Amended Acce Response Rejec		QAE/Lead Auditor/Date	Branch Manager/Date		
	ig. QA		factory tisfactory	QAE/Lead Auditor/Date	Branch Manager/Date		
	Comp. by Orig.	22 Remarks			-		
	ඊ	23 QA CLOSURE QAE/L	ead Auditor/Date	Branch Manager/Date	PQM/Date		

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8 Requirement ( continued )

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in sufficient detail...such that a technically qualified person may review, understand and verify the analysis without recourse to the originator<sup>#</sup>.

9 Deficiency ( continued )

addition, one civil calculation does not meet the above requirement [C-0005]. It should be noted that H&N Surveillance N88-5-0011 covered many of the items that lead up to the above deficiency, but it does not cover the above stated requirement.

The design analyses cannot be checked without the originator because they are incomplete. The analyses do not contain a definition of the objective of the analysis, a definition of design input and their sources, a listing of applicable references, results of literature searches or other background data, identification of assumptions and indication of those which require verification as the design proceeds, and major equation sources. If these items were available the analyses could stand alone and be reviewed, understood, and verified.

10 Recommended Actions ( continued )

- 2. Develop a plan to investigate what impact the lack of sufficient detail has had on the quality of the calculations. The plan should be provided with response to the SDR.
- 3. Take action to assure future calculation packages are generated to meet program requirements.

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	Organization	3 Discovered H&N Audit S8	During 30 Ident 19-01 S. Dana	ified By	36 Branch Chief Concurrence Date	4 SDR No 253	Rev0	
		5 Organizatio Holmes & Nar		Person(s) Co Wright/R.	ontacted . Schreiner	20 Wo	nse Due Date is orking Days from if Transmittal	
	<b>Originating QA</b>	8 Requiremen (Audit ( H&N NNWS Control	8 Requirement (Audit Checklist Reference, if Applicable) (Audit Checklist Item 1-45) H&N NNWSI Quality Assurance Program Plan, Rev. 1, Section 6, "Document Control", para. III.A, "The document control system shall be prescribed by					
	β	Contrary H&N Desi						
	Completed	10 Recommer 1. Prepa para.		that addr	X Investigative X C esses the requirement		, Section 6,	
	Aprvl.	11 QAE/Lead A		12 Branch	Manager Date	13 Project Que	lity Mgr. Date n.k. 12/19/58	
	Block 5	14 Remedial/In	vesti jative Actio	n(s)	15 E	Effective Date _		
	anization in E							
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		19 Response	<b>E</b>	ended QA sponse	AE/Lead Auditor/Date	Branch Mar	nager/Date	
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	ig. QA	21 Verifi- cation	Satisfactory		AE/Lead Auditor/Date	Branch Mar	nager/Date	
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8 Requirement ( c	continued )	
	es appropriately reviewed and concurred with by Quality procedure shall provide for implementation of the following	:
1. Identification	a of documents to be controlled.	
	of assignment of responsibility for preparing, reviewing, lissuing documents.	
	ments for technical adequacy, completeness, correctness, an appropriate quality requirements prior to approval and	nd
9 Deficiency ( co	ontinued )	
2. A procedure th completeness,	l issuing the DBD. That addresses review of the DBD for technical adequacy, correctness, and inclusion of appropriate quality prior to approval and issuance.	
10 Recommended Ac	tions ( continued )	
2. Train appropri	ate personnel to new procedural requirements.	

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	Organization	3 Discovered H&N Audit S89	Durina 30 Ide	ntified By	3b Branch Chief Concurrence Da	te	4 SDR No. 254	Rev0	
		5 Organization Holmes & Narv		s Person(s) C R. Sabol	Contacted			e Due Da king Days Transmitt	from
	ginating QA	a Requirement (Audit Checklist Reference, if Applicable) NNWSI-SOP-17-01, Rev. 0, para. 5.4.4, "Project participants are responsible for performing the following activities in support of the QARMS: Collect QA Records as soon as possible after records completion, not to exceed 30 days."							
	Completed by Originating	9 Deficiency Contrary to the above requirement, closed Corrective Action Reports (CARs 1, 5 through 10, 36, 46, and 47) have not been transmitted to Records Management processing. Reports are being stored in 2-drawer fil cabinets by H&N							
	Complet	10 Recommended Action(s): X Remedial I Investigative Corrective 1. Transmit the identified completed (closed) QA Records to Records Management as required.							
	Aprvl.	11 QAE/Lead An	uditor Date 12-12-08		Manager Date	13 P	Project Qualit	y Mgr. k 12/19	Date /fy
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	ganization in Bl								
	ð	16 Cause of the Condition & Corrective Action to Prevent Recurrence 17 Effective Date							
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	g. QA	21 Verifi-	Satisfactory		AE/Lead Auditor/Date		Branch Mana	ger/Date	
	by Orig.	22 Remarks							
	Comp.								
	Ŭ	23 QA CLOSURE	QAE/Lead Au	ditor/Date   	Branch Manager/Date	PQ	M/Date		

NX S		CANDARD DEFICIENCY REPORT	N-QA-03 10/86
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8 Requirement ( c	continued )		
9 Deficiency ( co	ontinued )		
	, do not addres	WSI QAPP, Section 17, and H&N procedure ss the 30 day requirement specified in	
10 Recommended Ac	tions ( continu	ued )	
requirements.		dures to address the current Project Office to revised procedural requirements.	
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	Organization	3 Discovered H&N Audit S89	During 30 Iden 9-01 B. Camp Hamptor	tified By	36 Branch	Chief rence Date	4 SDR №. 255	Rev0
	QA Orga	5 Organization Holmes & Nary		Person(s) Co . Sabol	ontacted		20 Worl	e Due Date is king Days from Transmittal
	Originating Q	<ul> <li>Requirement (Audit Checklist Reference, if Applicable) (Audit Checklist Item 1-72)</li> <li>H&amp;N NNWSI Quality Assurance Program Plan, Rev. 1, Section 18, "Audits", para. III.E.4, "Audit report shall contain summary of the audit results, including</li> </ul>						
	Completed by C	Contrary address	9 Deficiency Contrary to the above requirement, audit reports No. 87-02 and 87-10 do not address the effectiveness of each element audited.					
		eacn	<ul> <li>10 Recommended Action(s): X Remedial I Investigative Corrective</li> <li>1. Revise the audit report format to include a statement of effectiveness for each element audited.</li> </ul>					
	Aprvl.	11 QAE/Lead A	uditor Date は、して、ものの	12 Branch	-	Date 12/12/98	13 Project Qualit	ty Mgr. Date L 12/19/88
	n in Block 5	14 Remedial/Inv	vestigative Actio	ín(s)	Ì	15 Eff	ective Date	
	ed by Organization in	16 Cause of the Condition & Corrective Action to Prevent Recurrence 17 Effective Date						
	Completed by	18 Signature/Date						
		19 Response	Reject Re	nended Q/ sponse	AE/Lead Aud	itor/Date	Branch Mana	ger/Date
	Org	20 Amended Response	□Accept □Reject	0/	AE/Lead Aud	itor/Date	Branch Mana	ger/Date
		21 Verifi- cation	Satisfactory		AE/Lead Aud	itor/Date	Branch Mana	ger/Date
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	8 Requirement ( cont: a statement of the e:	inued ) ffectiveness of the QA program elements audited	±¤.	
	10 Recommended Action	ns ( continued )		
	2. Train Audit person	nnel to the revised procedural requirements.		
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	Organization	3 Discovered H&N Audit S89	During 30 ld 9-01 W. Ma	entified By Insel	3b Branch Chief Concurrence Date		DR No.	Rev. <u>0</u>	
		5 Organization Holmes & Nary		6 Person(s) C C. Wright/R		2	esponse 0 Workin ate of Tr	g Days	from
	<b>Originating QA</b>	8 Requirement (Audit C 1. H&N N para.	hecklist Ite NWSI Quality	em 1-64) Assurance P	e, if Applicable) Program Plan, Rev. 1, external audits shal				er
	λq	Contrary and crite							
	Completed	<ul> <li>10 Recommended Action(s): X Remedial I Investigative Corrective</li> <li>1. Develop a plan which describes how H&amp;N will provide coverage of criteria</li> <li>16 and 18. The plan should be provided with response to the SDR.</li> </ul>							
	7 11 QAE/Lead Auditor Date 12 Branch Manager Date 13 Project Que								Date /{¥
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	ig. QA	21 Verifi-	Satisfactor		AE/Lead Auditor/Date	Branc	h Manage	er/Date	
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organizations' activities" 2. H&N Procedure scheduled in a	erage of all app s QA Manual, as	appropriate, com O, "Audits", par de coverage of a	mensurate with a. 6.1.2, "Aud 11 applicable	ongoing its shall be elements of	the
10 Recommended Ac	tions ( continue	d )			
2. Revise the cur	rent audit sched	ule to include c	riteria 16 and	18.	
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	3 Discovered During H&N Audit S89-01 5 Organization		36 Branch Chief Concurrence Date	4 SDR No. 257 Rev. 0				
	i Holmes & Narver	6 Person(s) C R. Schreiner		7 Response Due Date is 20 Working Days from Date of Transmittal				
	Audit Checklis	8 Requirement (Audit Checklist Reference, if Applicable) (Audit Checklist Items 1-10, 1-11, 1-12, 1-14, 1-19, 1-20 and 1-22) H&N QAPP, Rev. 1, Section 5, Paragraph III.B.1 states:						
	9 Deficiency Contrary to the cited requirement, H&N procedures do not contain appropriate quantitative or qualitative acceptance criteria for determining that prescribed activities have been satisfactorily accomplished. The following							
			X Investigative X Co cited deficiencies.	rrective				
		111		13 Project Quality Mgr. Date ames Blaybock 12/19/85				
Continue in Black E		e Action(s)	15 Eft	Fective Date				
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	23 QA CLOSURE QAE/Le	ad Auditor/Date I I	Branch Manager/Date	PQM/Date				

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S	DR No. 257 Rev. 0 Page 2	of	3
8	8 Requirement ( continued )		
	"Instructions, plans, procedures, etc., shall: Include or reference appropriate quantitative or qualitative acceptance criteria for determining that prescribed activities have been satisfactorily accomplished."		
9	9 Deficiency ( continued )		·
	examples indicate the areas in which H&N procedures fail to provide a suffic level of detail or guidance to those responsible for implementation.	cient	
1	1. H&N NNWSI-007, Rev. O, with ICN-002, Rev. O, "Work Initiation, Criteria Gathering, and Reporting," and NNWSI-015, Rev. O, "Design Input Control" do not instruct those responsible for implementation with regard to what aspects of design input must be reviewed in order to arrive at acceptance of the input. Instructions directing such a review should, at a minimum include the following:	; ; ;e	
	1) a comparison of subject input with known values, standard tables, information, and codes;		
	2) a check to determine if the input is complete such as a reference to Attachment 8.1 of NNWSI-015;		
	3) a check to confirm accuracy of the input;		
	4) a check to determine if the input requires a change to established input and an assessment of related input that requires a change and;		
	5) an assessment of whether the input will result in the use of standard available technology and ëquipment or some arrangement that is beyond the state of the art.		
2	2. H&N NNWSI-006, Rev. 1, "Design Analysis," does not impart the message th an analysis is more than a set of calculations. This procedure concen- trates heavily on who prepares, where the analyses are sent to next, etcbut fails to convey the fundamental purpose of an analysis. That is, an analysis must prove through use of progressive and orderly logic that the design of the item will serve safely and effectively under the established design conditions. The designer must postulate what the design conditions are, including worse case conditions, and prove or disprove that design objectives of safety and effectiveness can be met.	nat	
3	3. H&N NNWSI-029, Rev. 1, "Design Interface Control," does not contain pro- visions to assure that traceability is achieved between Design Interface		•

	WMPO STANDARD DEFICIENCY REPORT CONTINUATION SHEET	N-QA-038 10/86
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	ontinued ) on Sheets, Component Interface Drawings, System Interface the Design Output Drawings used for procurement and const	ruc-
4. H&N NNWSI-01	5, Rev. 0, does not provide instructions on how comments a see Para. 6.3.2.	re
responsible selected cor method was u are to be in responsible have learned instructions	4, Rev. 0, does not provide instructions on how those are expected to assess whether design inputs have been rectly, whether assumptions are valid, whether a proper de- sed etcThe procedure does not explain how these questi- corporated into the Design Verification Report nor how tho- indicate their satisfaction or dissatisfaction with what the of the design. Further, the procedure does not provide regarding resolutions of comments made by the verifier the satisfaction with the design.	ons se hey
engineering	5, Rev. 1, does not contain instructions regarding which disciplines are required to review a drawing. No instruct to indicate how review comments are resolved.	ions
10 Recommended A	ctions ( continued )	C C
2. Perform and of similar d	document QA review to determine extent and depth eficiencies.	•
Revise proce	e adequacy of past QA reviews of subject procedures. dures to reinforce requirements for QA reviews including n of comments and resolutions.	tindir
4. Train approp	riate personnel to revised procedural requirements.	
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		285	WMPO STAND	ARD DEFICIENCY REF	PORT N-QA-038 3/87				
	ç	• Date November 29	, 1988 2 Sev	verity Level 🗆 1 🛛 2	<u>3</u> Page 1 of 3				
	Organization	3 Discovered During H&N Audit S89-01	30 Identified By J. Jardine	36 Branch Chief Concurrence Date	4 SDR No. 258 Rev. 0				
		5 Organization Holmes & Narver	6 Person(s) R. Schrein	Contacted er, D. Brown	7 Response Due Date is 20 Working Days from Date of Transmittal				
	<b>Originating QA</b>	8 Requirement (Audi (Audit Checkli H&N QAPP, Rev.	8 Requirement (Audit Checklist Reference, if Applicable) (Audit Checklist Items 1-10, 1-12, 1-13 and 1-34) H&N QAPP, Rev. 1, Section 5, Para. III.C. states:						
	2	9 Deficiency Contrary to the cited requirements, appropriate quality requirements have not been included in H&N procedures and where omissions have been corrected, the effort to correct these omissions has not been timely. The following examples							
	Completed	10 Recommended Ac See SDR No. 25	• • • •	al 🛛 Investigative 🖾 C	Corrective				
	Aprvl.	11 QAE/Lead Auditor	Date 12 Branc	h Manager Date N 13/12/81	13 Project Quality Mgr. Date Lans Blayfork 12/19/88				
	14 Remedial/Investigative Action(s)								
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	anization in		•						
	Organiz		dition & Corrective	Action to Prevent Recu 17 E	rrence ffective Date				
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	all instructions, procedures, plans and dra						
to assure te ments."	chnical adequacy and inclusion of appropria	te quality require-					
H&N QAPP Rev.	1, Section 6, Para. III.A.3 states:						
"The [document control] procedure shall provide for implementation of the following:							
	uments for technical adequacy, completeness appropriate quality requirements prior to a						
9 Deficiency (	continued )						
	eas where H&N procedural reviews have faile ion of QA requirements from the H&N QAPP in						
contained a and approva regarding t apprear in l and Reportin the require NNWSI-007, 1	he H&N QAPP, approved for use by the Project requirement in Section 3, Para. III.B.1. d by the responsible design organization and he selection of design inputs. This requir Rev. 0 of H&N NNWSI-007 "Work Initiation, 0 ng," (effective date, 4/3/87). Approximate ment appeared in Rev. 0 of the H&N QAPP, IO Rev. 0, corrected the omission. In the int tion Forms were generated that did not require	directing the review and the QA organization rement did not Criteria Gathering, cely, 115 days after CN-001, Rev. 0 to cerim period, several					
Para. III.D design input [to be] spectinstructions NNWSI-014, 1 fied?" This identify and design of spectrum	Rev. 1 of the H&N QAPP contained a requirem .5.a(6), directing design reviews to consid ts and verification requirements for interf cified in design documents or in supporting s." This requirement appears in Para. 6.3 Rev. 0 as, "Have the design interface requi s translation eliminated the emphasis on the d verify design inputs that establish a com ystems, structures and components for which nization has responsibility for verification	deration of "necessary acing organizations g procedures or 3.1.4 of H&N arements been satis- ne necessity to mmon basis for the n more than one					
Para. C.1., (including	Rev. 1 of the H&N QAPP contained a requirem directing that calculations shall be ident structure, system, or component). Rev. 1 c lysis" does not contain provisions for impl	cifiable by subject of H&N NNWSI-006,					

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9 I	Deficiency ( con	tinued)		
4.	Para. C.1.a., objective of t H&N NNWSI-006, approximately period, analys	directing design a he analysis. This "Design Analysis" seven months later	PP contained a requirement analysis to contain a de s requirement did not ap , until ICN-001, Rev. 0 , in September, 1988. I prmed to support the Tit requirement.	finition of the pear in , was issued n the interim
5.	Para. C.2.g.,	directing a QA rev	PP contained a requireme view be performed on des tain provisions to imple	ign analyses.
6.			P contains a requiremen on verification efforts	
	necessary desi interfacing or not contain pr design input h	gn input and verif ganizations. H&N ovisions to implem	fication requirements we NNWSI-029, "Design Inte ment this requirement. ed for areas in the ESF	re specified for rface Control, does Hence, no common
7.	necessary desi interfacing or not contain pr design input h responsible de Rev. O and Rev ment that sign by appropriate	gn input and verif ganizations. H&N ovisions to implem as been establishes sign organizations . 1 of H&N QAPP, S atures and dates of personnel on desi	fication requirements we NNWSI-029, "Design Inte ment this requirement. ed for areas in the ESF	re specified for rface Control, " does Hence, no common design where contains a require- hall be provided NNWSI-006, Rev. 1,
7.	necessary desi interfacing or not contain pr design input h responsible de Rev. O and Rev ment that sign by appropriate	gn input and verif ganizations. H&N ovisions to implem as been establishes sign organizations . 1 of H&N QAPP, S atures and dates of personnel on desi	NNWSI-029, "Design Intenent this requirement. ed for areas in the ESF s interface. Section 3, Para. C.2.g., of review and approval s ign analysis documents. the Design Section Chie	re specified for rface Control, " does Hence, no common design where contains a require- hall be provided NNWSI-006, Rev. 1,
7.	necessary desi interfacing or not contain pr design input h responsible de Rev. O and Rev ment that sign by appropriate	gn input and verif ganizations. H&N ovisions to implem as been establishes sign organizations . 1 of H&N QAPP, S atures and dates of personnel on desi	NNWSI-029, "Design Intenent this requirement. ed for areas in the ESF s interface. Section 3, Para. C.2.g., of review and approval s ign analysis documents. the Design Section Chie	re specified for rface Control, " does Hence, no common design where contains a require- hall be provided NNWSI-006, Rev. 1, f.
7.	necessary desi interfacing or not contain pr design input h responsible de Rev. O and Rev ment that sign by appropriate	gn input and verif ganizations. H&N ovisions to implem as been establishes sign organizations . 1 of H&N QAPP, S atures and dates of personnel on desi	NNWSI-029, "Design Intenent this requirement. ed for areas in the ESF s interface. Section 3, Para. C.2.g., of review and approval s ign analysis documents. the Design Section Chie	re specified for rface Control, " does Hence, no common design where contains a require- hall be provided NNWSI-006, Rev. 1, f.
7.	necessary desi interfacing or not contain pr design input h responsible de Rev. O and Rev ment that sign by appropriate	gn input and verif ganizations. H&N ovisions to implem as been establishes sign organizations . 1 of H&N QAPP, S atures and dates of personnel on desi	NNWSI-029, "Design Intenent this requirement. ed for areas in the ESF s interface. Section 3, Para. C.2.g., of review and approval s ign analysis documents. the Design Section Chie	re specified for rface Control, " does Hence, no common design where contains a require- hall be provided NNWSI-006, Rev. 1, f.
7.	necessary desi interfacing or not contain pr design input h responsible de Rev. O and Rev ment that sign by appropriate	gn input and verif ganizations. H&N ovisions to implem as been establishes sign organizations . 1 of H&N QAPP, S atures and dates of personnel on desi	NNWSI-029, "Design Intenent this requirement. ed for areas in the ESF s interface. Section 3, Para. C.2.g., of review and approval s ign analysis documents. the Design Section Chie	re specified for rface Control, " does Hence, no common design where contains a require- hall be provided NNWSI-006, Rev. 1, f.
7.	necessary desi interfacing or not contain pr design input h responsible de Rev. O and Rev ment that sign by appropriate	gn input and verif ganizations. H&N ovisions to implem as been establishes sign organizations . 1 of H&N QAPP, S atures and dates of personnel on desi	NNWSI-029, "Design Intenent this requirement. ed for areas in the ESF s interface. Section 3, Para. C.2.g., of review and approval s ign analysis documents. the Design Section Chie	re specified for rface Control, " does Hence, no common design where contains a require- hall be provided NNWSI-006, Rev. 1, f.

#### YMP AUDIT REPORT NO. 589-1

ENCLOSURE 4

#### **OBSERVATIONS**

		WMPO O	BSERVATION	NO		N-QA-012 8/88
		Noted During:	Identified	Ву:		Date:
-	8	QA Audit S89-1	J. Jard	ine		11/4/88
	1	Organization:	Person(s)	Contacted:		Response Due Date Is
	Ē	Yucca Mountain Project Offi	ce C. Ward	/P. Gehner		20 Days from Date of Transmittal
	Completed by Originating QA Organization	Discussion: It was observed durin been made to establin interface within the verification of those occur. This situation ESF design interface clear whether provise	its for points whe lll be a significa the ESF design wh elevance to the po sign of the Reposi	re designs nt obstacl ere interi ints at wi tory. It	s le to the laces uich the is not	
ľ	0   	QAE/Lead Auditor	Date	Branch Manager		Date
	·	SAlina	1-6-89_	AL A	awell	18 Ann 89
		Classica		<b></b>		 
	╞	Signature:	<u></u>	Date	):	
		Response Receipt Verified/Closed QAE/Lead Auditor	Date	Branch Manager		Date
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Observation No. 1 (continued)

the ESF design and the Repository design interface. It is recommended that the Project Office initiate a revision to AP5.6Q that establishes requirements for documenting and therefore controlling change to design inputs unique to each point at which the Repository and ESF interface. A description of the common design input is necessary to verify interfacing designs.

		WMP	OOBSERVA	TION	<b>Ю.</b> <u></u>	-02		N-QA-012 8/88
	Noted During	g:	ki	entified B	γ: 			Date:
8	QA Audit S	89-1	J.	Jardir	ie .	_		11/4/88
stanization of the second s	Organization Yucca Moun	: tain Project Of			Contacted: . Gehner			Response Due Date is 20 Days from Date of Transmitial
Completed by Originating QA Organization	Discussion:	H&N procedure 6/9/88, requir (DIIS), Attach prepare this f such as the ca pants, it was either of the to H&N for the procedure woul action, it was situation.	es the use ment 8.4 or form where 1 use where Fa learned that two particles preparation d require 1	of a " f the I H&N is &S and at the ipants on of S F&S and	Design In CN. Inqu not involu- Los Alamos Sheet was and then f IDs and/os /or Los Alamos	terface I iring as ved in a s/EG&G ard expected the sheet r CIDs. 1 lamos/EG&G	dentific to who is design is to the so to be p would h Inquirin 5 to tak	cation Sheet" is expected to interface, ole partici- prepared by be forwarded ng as to what ke such an
	QAE/Lead Au	ditor	Date		Branch Ma	nager	01	Date
	<u>S</u> A	from	1-6-8	7	A.	Calu		18 Jan 89
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### WMPO OBSERVATION NO. 589-1-02 CONTINUATION PAGE

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2 OF 2

Observation No. 2 (continued)

The responsible design organization simply "agreed" that the Sheet would be the vehicle to identify interfaces among responsible design organizations. The DIIS is the only document that exists at this time, (SIDs and CIDs are in preparation, ETA first draft at 30% Title II Design) by which the Project may substantiate that interface control is being implemented among responsible ESF design organizations. This is a compelling reason for the Project Office to require its systematic use by all ESF responsible design organizations by way of Administrative Procedure (AP) 5.6Q, "Exploratory Shaft Facility Technical Elements Baseline and Interface Control Procedure."

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		Noted During:	Identified B	۶.	Date:	
ノ	8	QA Audit S89-1	J. Jardi	ne	11/4/88	
		Organization: Holmes & Narver (H&N)	Person(s) ( C. Ward/	Contacted: P. Gehner	Response Due Date is 20 Days from Date of Transmittel	
	Completed by Originating QA Organization	Discussion: No provisions (and the H&N design pro to points at which izations. The H&N faces appears to b the physical chara account for the ne serve both interfa will be very diffi interfaces occur. H&N as the agent o	gram to estable design inter interface co e focused pri cteristics of ed to establi cing design o cult, if not This in an in	o means) are currently available design input faces occur with external of introl program regarding ext marily on developing a deso an interface and thereby is sh a common base of design rganizations. Without such impossible, to verify design G, can contribute significa	lable within uts relevant design organ- ternal inter- cription of fails to input that h a base, it ms where control where	
		QAE/Lead Auditor	Date -6-81	Branch Manager	18 Jan 89	
	Completed By Respondee	Response: Signature:		Dete:		
		Response Receipt Verified/Closed				
		QAE/Lead Auditor	Date	Branch Manager	Dete	
	Completed By OA Org.	Remarks:				

	WMPO (	OBSERVATION	NO	N-QA-012 8/88
	Noted During:	Identified	Ву:	Date:
8	QA Audit S89-1	J. Jardi	ne	11/4/88
	Organization:	Person(s)	Contacted:	Response Due Date is
	QA Audit S89-1 Organization: Holmes & Narver (H&N) Discussion: Neither H&N NNWSI-4 1, "Design Input Co and controlling por to release. The p (DVR) be prepared to verified, however, accompany the ports procedural step, the QAE/Lead Auditor	R. Schri	ener	20 Days from Date of Transmittal
completed by Originating QA	WSI-005, Rev. of identifying verified prior fication Report ave not been NAN and not wing this not be aware of			
0	QAE/Lead Auditor	Date 1-6-89	Branch Manager	Date 18 Aan 89
Completed By Respondee				
	Signature:	· · · · · · · · · · · · · · · · · · ·	Date:	
	Response Receipt Verified/Closed			
	QAE/Lead Auditor	Date	Branch Manager	Date
Completed By QA On.	Remarks:			

#### WMPO OBSERVATION NO. <u>S89-1-04</u> CONTINUATION PAGE

N-QA-012 8/88

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Observation No. 4 (Continued)

the verification status of the design he/she has received. In the event the DVR does accompany the released design documents, a real possibility exists that the DVR will become separated from the design documents and the verification status will be lost. I suggest NNWSI-014, Rev. 0, and NNWSI-005, Rev. 1, be revised to establish a check of the design verification status prior to release and to indicate on the design documents that are to be released, what the verification status is as well as what the intended purpose for release is.

WMPO OBSERVATION NO S89-1-05 8/88						
Noted During:	Identified	Ву:	Date:			
QA Audit S89-1	F. J. R	uth	11/4/88			
Organization:	Person(s)	Contacted:	Response Due Dete Is			
Holmes & Narver	C. Aiel	lo/R. Deklever	20 Days from Date of Transmittal			
1 activity during the las to verify control points position descriptions for each surveyer who perform establishing position des whether they meet the min not meet the minimum requ	at the Nevada survey personed work (as i criptions (for imum requirem irements, H&N	2). The purpose of the su a Test Site (NTS). Since onnel at that time, H&N sh dentified above) prior to be union survey personnel; ments. If the survey personnel; should address what acti	irvey work was there were no hould evaluate H&N to determine sonnel do			
QAE/Lead Auditor	Date (-89	Branch Manager A(0)	18 Jun 89			
	-601_	A TT/Callwell	10/01/01			
Signatura:		Dete:				
Response Receipt Verified/Closed	۵					
QAE/Leed Auditor	Date	Branch Manager	Date			
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	Noted During: QA Audit S89-1 Organization: Holmes & Narver Discussion: The survey work that was 1 activity during the last to verify control points position descriptions for each surveyer who perform establishing position des whether they meet the minimum requine taken to reassess the CAE/Leed Auditor Response: Signature: Response Receipt Verified/Closed CAE/Leed Auditor	Noted During:       identified         QA Audit S89-1       F. J. R         Organization:       Person(s)         Holmes & Narver       C. Aiel         Discussion:       The survey work that was performed in 1 activity during the last audit (88-2 to verify control points at the Nevada position descriptions for survey personeach surveyer who performed work (as i establishing position descriptions (for whether they meet the minimum requirements, RAN be taken to reassess the survey work performed.         QAE/Leed Auditor       Date         Signature:       Response Receipt Verified/Closed         QAE/Leed Auditor       Date	Noted During:       Kientified By:         QA Audit S89-1       F. J. Ruth         Organization:       Person(s) Contacted:         Holmes & Narver       C. Aiello/R. Deklever         Discussion:       The survey work that was performed in March, 1988 was identified:         1 activity during the last audit (68-2). The purpose of the sn to verify control points at the Nevada Test Site (NTS). Since position descriptions (for union survey personnel at that time, HEN SI each survey row point on descriptions (for union survey personnel) whether they meet the minimm requirements. If the survey personnel at the NTS.         OAEA.ead Auditor       Date         Branch Manager       MARAMAR         Response:       Date         Bignature:       Date:         Response Receipt Verified/Closed       Date         GAE/Leed Auditor       Date         Branch Manager       March			

	N-QA-012 8/88			
	Noted During:	Identified B	Å:	Date:
ş	QA Audit S89-1	F. J. Ru	th	11/4/88
	Organization:	Person(s) (	Contacted:	Response Due Date Is
	Holmes & Narver	C. Aiell	o/R. Deklever	20 Days from Date of Transmittal
S S	Discussion:			
d by Originating QA Org	<ol> <li>Upon reviewing the indoc the records indicate tra procedure revision to whe identified.</li> </ol>	aining was re	cords of specific design per ceived to specific procedur ning was conducted was not	
Completed by		s should be identified on t als have received the neces he procedures.		
<b>P</b>	QAE/Lead Auditor	Date	Branch, Manager m al	Date
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	Signature:		Date:	
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	QAE/Lead Auditor	Date	Branch Manager	Dete
Completed By CA Org.	Remarks:			

### WMPO OBSERVATION NO. <u>\_S89-1-06</u> CONTINUATION PAGE

Observation No. 6 (continued)

2. Indoctrination records of specific design personnel indicate training to the H&N QAPP was accomplished by the use of a project film which does not provide design personnel sufficient detail, as a minimum, to the purpose, scope, methods of implementation, and applicability of the QAPP as it relates to the work to be accomplished.

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2	OF	2			

WMPO OBSERVATION NOS89-1-07 8/68							
Noted During:	Identified B	y:	Date:				
8 QA Audit S89-1	M. Brake		11/4/88				
Organization: Holmes & Narver			Response Due Date is 20 Days from Date of Transmittei				
Discussion: No provisions are evident in Preparation and Control" and Control", for the resolution technical assessment reviews procedure to cover this, the covered. Response to this observation H&N to address the above state							
GAE/Lead Auditor	Date	Branch Manager	BARN BY				
Signature:	•	Dete:					
QAE/Lead Auditor	Date	Branch Manager	Date				
Remarks:							
	Noted During: QA Audit S89-1 Organization: Holmes & Narver Discussion: No provisions are evident in Preparation and Control" and Control", for the resolution technical assessment reviews procedure to cover this, the covered. Response to this observation H&N to address the above sta OAE/Lead Auditor Signature: Response Receipt Verified/Closed QAE/Lead Auditor	Noted During:       Identified B         QA Audit S89-1       M. Brake         Organization:       Person(s) C         Holmes & Narver       R. Schreit         Discussion:       No provisions are evident in H&N proceed         Preparation and Control" and NNVSI-005, Control", for the resolution and implem technical assessment reviews. Even the procedure to cover this, the activity is covered.         Response to this observation should include H&N to address the above stated program         QAE/Lead Auditor       Date         Signature:       Response:         Signature:       Response Receipt Verified/Closed         QAE/Lead Auditor       Date         Signature:       Response Receipt Verified/Closed         QAE/Lead Auditor       Date         Signature:       Response Receipt Verified/Closed         QAE/Lead Auditor       Date	Noted During:       Identified By:         QA Audit S89-1       M. Brake         Organization:       Person(a) Contacted:         Holmes & Narver       R. Schreiner         Discussion:       No provisions are evident in HAN procedures NNMSI-003, Rev 0, "Sp Preparation and Control" and NNMSI-005, Rev 1, "Drawing Preparati- Control", for the resolution and implementation of comments recei- technical assessment reviews. Even though there is no Project le procedure to cover this, the activity is being performed and shou covered.         Response to this observation should include what actions will be than to address the above stated program weakness.         OAE/Lead Auditor       Date         Branch Manager         Response:         Bignature:       Deta:         Response Receipt Verified/Closed       Date         Branch Manager         Response Receipt Verified/Closed       Date         Branch Manager				

Analysis", to define the ne (Life Safety Systems) and 1 analyses to show why altern Response to this observation	ed for analy .2.6.9.3 (D atives were n should in	Contacted: iner rocedure NNWSI-006; Rev 2 yses. The files for 1.2 ata Cabling) should conta selected, however, they clude what actions will 1	.6.7.1.2 ain do not.			
Organization: Holmes & Narver Discussion: There is no method identific Analysis", to define the ne (Life Safety Systems) and 1 analyses to show why altern Response to this observation H&N to address the above st	Person(s) C R. Schre ed in H&N p ed for analy .2.6.9.3 (D atives were n should in	Contacted: iner rocedure NAWSI-006; Rev 2 yses. The files for 1.2 ata Cabling) should conta selected, however, they clude what actions will 1	Response Due Date is 20 Days from Date of Transmittel 1, "Design .6.7.1.2 ain do not.			
Holmes & Narver <b>Discussion:</b> There is no method identific Analysis", to define the ne (Life Safety Systems) and 1 analyses to show why altern Response to this observation H&N to address the above st	R. Schre ed in H&N p ed for analy .2.6.9.3 (D atives were n should in	iner rocedure NAWSI-006; Rev 2 yses. The files for 1.2 ata Cabling) should conta selected, however, they clude what actions will 1	20 Days from Date of Transmitted 1, "Design .6.7.1.2 ain do not.			
There is no method identific Analysis", to define the ne (Life Safety Systems) and 1 analyses to show why altern Response to this observation H&N to address the above st	ed for analy .2.6.9.3 (D atives were n should in	yses. The files for 1.2 ata Cabling) should conta selected, however, they clude what actions will 1	.6.7.1.2 ain do not.			
OAEA and Auditor	There is no method identified in H&N procedure NNWSI-006; Rev 1, "Design Analysis", to define the need for analyses. The files for 1.2.6.7.1.2 (Life Safety Systems) and 1.2.6.9.3 (Data Cabling) should contain analyses to show why alternatives were selected, however, they do not. Response to this observation should include what actions will be taken by H&N to address the above stated program weakness.					
	Date 5-89	Branch Manager	18 Jan 39			
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Ē	QA Audit S89-1	S. Dana		11/4/88
	Organization:	Person(a)	Contacted:	Response Due Date
	Holmes & Narver	Ċ. Wrigh	nt/R. Schreiner	20 Days from Date of Transmittel
	Discussion: H&N QAPP, Rev 1, Section criteria letters, design codes, standards, manufac identified, documented, a accepted by the responsil organization" H&N QA has not been invol design inputs used for T	bases, perform cturer's design and their select ble design orga lved in the rev	nance and regulatory re h data, and quality sta ction reviewed, approve anization and the respo view, approval and/or a	quirements, ndards shall be d, and/or nsible QA cceptance of
3	QAE/Lead Auditor	Date	Branch Manager	Ch Date
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	QAE/Lead Auditor	Date		
		Date		

Observation No. 9 (continued)

procedure NAWSI-015, Rev 0 (effective date 9/13/88), H&N QA is procedurally involved in the review and approval of design inputs. The approval will be documented on the Design Input Control Document (DICD); however, initial issuance of the DICD had not occured at the time of the audit.

The above deficiencey has been identified by H&N QA on Corrective Action Report (CAR) No. N88-A-007 (dated 11/04/88). Therefore, this observation will serve to track corrective action of CAR N88-A-007.

Response to this observation should include the following actions taken by H&N relative to CAR N88-A-007:

1. Remedial,

2. Investigative, and

3. Corrective.

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$\smile$	g	QA Audit S89-1	S. Dana		11/4/88
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i		Holmes & Narver	C. Wrigh	t/R. Schreiner	20 Days from Date of Transmittal
	ð	Discussion:			
	Completed by Originating QA Orga	HAN QAPP, Rev 1, Section review and approval cycl construction, or release activities. As a minimu participation of technic organization and the WMP HAN QA performs a review specifications) prior to	e has been ach to another or m, the review al and QA elem O" and approval	aieved prior to release ganization for use in o and approval cycle shal wents of both the respon- of design output docume	for procurement, other design l include the sible design ents (drawings,
	ð	QAE/Lead Auditor	Date	Branch Manager, 00 /	)// , Date
		SAM	1-6-89	AGA Aller	ston 89
		Response:			
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		Signature:	~	Date:	
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	Completed By OA Orp.	Remarks:			
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#### WMPO OBSERVATION NO. <u>589-1-10</u> CONTINUATION PAGE

Observation No. 10 (continued)

subsequent to design verification. The QA review should be performed after design verification to assure that the documents are prepared, reviewed, and approved in accordance with documented procedures (e.g., NNWSI-014, Design Verification) and applicable QA requirements. It should be noted that no design verification has taken place, therefore, the above deficiency is a program weakness at this time.

The response to this observation should include what actions will be taken by H&N to address the above stated program weakness.

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·	WMPO OBSE	RVATION N	<b>O.</b>	N-QA-012 8/88
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/ <b> </b> 8	QA Audit S89-1	S. Dana		11/4/88
	Organization:	Person(s) (	Contacted:	Response Due Date Is
	Holmes & Narver	C. Wright	:/R. Schreiner	20 Days from Date of Transmittel
Completed by Originating QA Organization	Discussion: H&N QAPP, Rev 1, Section 3, designs shall require verific those changes on the overall H&N procedure NNWSI-014, "Do above requirement. The above deficiency has been	para. III. ication ind 1 design." esign Verij	D.4, "Changes to previousl cluding evaluation of the e Eication", Rev 0, does not	y verified ffects of address the
S	QAEAsed Auditor	Date 5-89	Branch Manager	Date 18 Jan 39
Completed By Respondee		· · ·		
	Signature:		Data:	
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Completed By OA Orp.	Remarks:			
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Observation No. 11 (continued)

(CAR) N88-A-009 (dated 11/03/88). Therefore, this observation will serve to track corrective action of CAR N88-A-009.

Response to this observation should include the following actions taken by H&N relative to CAR N88-A-009:

1. Remedial.

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	WMPO OBS	ERVATION	<b>NO.</b> <u>589-1-12</u>	N-QA-0 8/88
_	Noted During: QA Audit S89-1	Identified I S. Dana	<b>β</b> γ:	Date: 11/4/88
	Organization: Holmes & Narver		<b>Contacted:</b> t/R. Schreiner	Response Due Date is 20 Days from Date of Transmittal
Comprehend by Originating QA Organization	2. Drawings were found H&N has identified the ab however, no resolution wa audit.	that did no that referen ove discreps s provided ( ion should :	t reference a QALAS; and nce unapproved QALASS. ancies on a "Comment Revie on the review sheet at the include those actions take	w Sheet", time of the
	QAEA.ead Auditor	<b>Date</b> 6-99	Branch Manager Hag Ashuell 18	Jen 39
	Signatura:		Deto:	
	Signature: Response Receipt Verified/Closed QAE/Leed Auditor	C Date	Dete: Branch Manager	Dete

	WMPO OB	SERVATION N	<b>VO.</b>	N-QA-012 8/88
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8	QA Audit S89-1	W. B. Mar	nsel	11/4/88
nization	Organization:		Contacted:	Response Due Date Is 20 Days from Date of
	Holmes & Narver	D. Brown		Transmittal
Completed by Originating QA Orge	Discussion: H&N procedure NNWSI-008, R 6.1.5.3, "Access to the LR authorized entry. A contri- personnel that have access The H&N access list to the personnel who have access, are. Response to this observation	C files shall olled access to the files LRC files do no names are	ty Assurance Records Manager l be controlled to preclude list shall be maintained de s." bes not list the administrate given to designate who the clude what actions will be t	un- esignating tive e personnel
8	H&N to address the above s	tated program	weakness.	· · · · · · · · · · · · · · · · · · ·
	QAE/Lead Auditor	<b>Date</b> -6-89	Branch Manager 16	Deto Aan 89
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Completed By OA Org.	Remarks:			

	WM	PO OBSERVATION I	<b>10.</b>	N-QA-01 8/88
	Noted During:	identified E	Зү:	Date:
8	QA Audit S89-1	F. Ruth		11/4/88
	<b>Organization:</b> Holmes & Narver		Contacted: o/R. DeKlever	Response Due Date Is 20 Days from Date of Transmittal
Completed by Originating QA Organization	Assurance Program", and experience comm position description Upon reviewing person that a H&N design i	, para. III.D.2, " mensurate with the sons." sonnel files for H& individual does not al does not possess	lan, Rev. 1, Section 2 Personnel selected sha minimum requirements s N design personnel it meet the position des a degree which meets	ll have education pecified in was determined cription in his
	OAEAead Auditor	Date 1-6-89	Branch Manager	18 for 89
Completed By Respondee				
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Τ	Response Receipt Verified/Clo	eed 🖸		
	QAE/Lead Auditor	Date	Branch Manager	Date
Completed By OA Org.	Remarks:		F	-

#### WMPO OBSERVATION NO. <u>S89-1-14</u> CONTINUATION PAGE

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Observation No. 14 (continued)

The above deficiency has been identified by H&N QA on Corrective Action Report (CAR) No. 88-S-005, Rev. 1 (dated 11/15/88). Therefore, this observation will serve to track corrective action of the CAR.

Response to this observation should include the following actions taken by H&N relative to CAR 88-S-005:

1. Remedial;

2. Investigative; and

3. Corrective.

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·	WMPO OF	BSERVATION I	NO	N-QA-012 8/88
	Noted During:	Identified I	Ву:	Dete:
/ 8	QA Audit S89-1	M. Brake		11/4/88
	Organization:	Person(s)	Contacted:	Response Due Date is
Ī	Holmes & Narver	R. Schre	einer	20 Days from Date of Transmittal
Completed by Otlainatina QA Organization	Discussion: Title I outline specificat accordance with H&N proceed And Control". If outline requirements of a formal a include the exclusion.	dure NNWSI-003 specification	being prepared and review 3, Rev. 0, "Specification in hs are to be excluded from , NNWSI-003 should be revi	Preparation the
ľ	QAE/Lead Auditor	Date -6-89	Branch Manager	Date 8 Apr 89
Completed By Respondee		•		
	Signature:		Dete:	
	Response Receipt Verified/Closed		·	
	QAE/Lead Auditor	Date	Branch Manager	Date
Completed By OA Org.	Remarks:	·		



#### **Department of Energy**

Nevada Operations Office P. O. Box 98518 Las Vegas, NV 89193-8518

WBS 1.2.9.3

## DEC 21 1988

Joseph C. Calovini Technical Project Officer for Yucca Mountain Project Holmes & Narver, Inc. 101 Convention Center Drive Phase II, Suite P-280 Las Vegas, NV 89109

YUCCA MOUNTAIN PROJECT OFFICE (PROJECT OFFICE) QUALITY ASSURANCE (QA) STANDARD DEFICIENCY REPORTS (SDRS) RESULTING FROM AUDIT S89-01 OF HOLMES & NARVER, INC. (H&N), SUPPORT OF THE YUCCA MOUNTAIN PROJECT (NN1-1989-0679)

Enclosed are 10 SDRs, Nos. 249 through 258, which were generated during the course of Project Office QA Audit S89-01 of the H&N Yucca Mountain Project QA Program Plan and technical activities. Please note that you are required to provide responses to each SDR by completing blocks 14 through 18 as appropriate on the first page of each SDR. Be advised that the audit checklist references provided on each SDR are for Project Office internal use and should have no bearing on your ability to respond to the cited deficiencies.

A copy of your response is due back to this office 20 working days from the date of this letter. You are asked to concurrently send the original of each SDR response to Nita J. Brogan of Science Applications International Corporation (SAIC), Las Vegas, Nevada.

If you have any questions, please contact Wendell B. Mansel of my staff at 794-7945 or Stephen R. Dana of SAIC at 794-7176.

James Blaylock Project Quality Manager Yucca Mountain Project Office

YMP: JB-1113

Enclosures: SDRs 249-258

#### Joseph C. Calovini

cc w/encls: Ralph Stein, HQ (RW-30) FORS L. H. Barrett, HQ (RW-3) FORS A. E. Gurrola, H&N, Las Vegas, NV R. M. Ivy, H&N, Las Vegas, NV C. O. Wright, H&N, Las Vegas, NV S. H. Klein, SAIC, Las Vegas, NV H. H. Caldwell, SAIC, Las Vegas, NV E. P. Ripley, SAIC, Las Vegas, NV O. D. Smith, SAIC, Las Vegas, NV J. W. Estella, SAIC, Las Vegas, NV S. R. Dana, SAIC, Las Vegas, NV F. J. Ruth, SAIC, Las Vegas, NV W. H. Camp, SAIC, Las Vegas, NV M. C. Brake, SAIC, Las Vegas, NV J. A. Jardine, SAIC, Las Vegas, NV B. A. Tabaka, SAIC, Las Vegas, NV N. J. Brogan, SAIC, Las Vegas, NV J. J. Holonich, NRC, Washington, D.C. John Gilray, NRC, Las Vegas, NV P. T. Prestholt, NRC, Las Vegas, NV Robert Clark, W, Washington, D.C. S. W. Zimmerman, NWPO, Carson City, NV R. W. Gray, MED, NV V. F. Witherill, NTSO A. R. Veloso, NTSO C. P. Gertz, YMP, NV M. B. Blanchard, YMP, NV W. R. Dixon, YMP, NV L. P. Skousen, YMP, NV N. A. Voltura, YMP, NV W. B. Mansel, YMP, NV A. C. Williams, YMP, NV C. E. Hampton, YMP, NV E. L. Wilmot, YMP, NV

DEC 21 1988

2 2 ¥ v N-QA-038 WMPO STANDARD DEFICIENCY REPORT 3/87 Date Nov 29, 1988 2 ⊠ 3 of 2 2 Severity Level Page 1 1 Organization 3ª Identified By W.B. Mansel 3 Discovered During 3b Branch Chief 4 SDR No. H&N Audit S89-01 Concurrence Date 249 Rev. 0 7 Response Due Date is 20 Working Days from e Person(s) Contacted 5 Organization Holmes & Narver H. Tuthill/C. Wright/D. Brown Date of Transmittal 80 a Requirement (Audit Checklist Reference, if Applicable) Originating (Audit Checklist Item 2-6) 1. Reference: WMPO letter JB-1158, dated 3/20/87, Vieth to TPOs, page 2, last paragraph, requires H&N to issue revised procedures upon receipt of WMPD 9 Deficiency Contrary to the above, H&N has not developed and issued a procedure covering 2 procurement of QA Level I & II activities. This deficiency was previously Completed identified in WMPO Audit 88-1, Observation No. 7. H&N committed to producing 10 Recommended Action(s): 🖾 Remedial 🖾 Investigative 🗆 Corrective 1. Prepare a procurement procedure for YMP QA Level I & II activities. 2. Train appropriate personnel to procedural requirements. 11 QAE/Lead Auditor Date 12 Branch Manager Aprvl 13 Project Quality Mgr. Date Date ЪЦ 12/88 12/19/2 toustr 12/12/88 14 Remedial/Investigative Action(s) S Block **15 Effective Date** 2. Completed by Organization 16 Cause of the Condition & Corrective Action to Prevent Recurrence 17 Effective Date 18 Signature/Date Amended QAE/Lead Auditor/Date Branch Manager/Date 19 Response Reject Response б Б **QAE/Lead** Auditor/Date Branch Manager/Date 20 Amended Response Reject **B O** QAE/Lead Auditor/Date **Satisfactory** Branch Manager/Date 21 Verifi-Unsatisfactory cation ò 22 Remarks à Comp. PQM/Date QAE/Lead Auditor/Date Branch Manager/Date 23 QA CLOSURE

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SDR No. 2	249 Rev. 0		Page 2	of 2
appro 2. Refer audit		1, Observation No. 7, "As of a procedure covering procur		and
9 Defici	ency ( continued )	heir observation response by	06/30/88.	
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	5 Organization Holmes & Narver		Contacted ner/D. Brown	7 Response Due Date is 20 Working Days from Date of Transmittal
Originating QA	8 Requirement (Au (Audit Check H&N Procedur Section 6.2		1, "Design Drawing Pre	eparation And Control <sup>*</sup> , sonnel whose qualifications
م م	Contrary to drafting che	-	ent, no Title I drawin	ngs have evidence of a
Completed	10 Recommended 1. Perform o review.		ial 🛛 Investigative 🖾 ( drawings independent d	Corrective From the interdiscipline
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	WMPO STANDARD DEFICIENCY REPORT CONTINUATION SHEET		N-QA-0: 10/86	38
	SDR No. 250 Rev. 0 Page 2	2	of 2	
	8 Requirement ( continued ) are sufficient to have originated the original work and did not originate ( original work <sup>*</sup> .	the	1	
	10 Recommended Actions ( continued )			
	2. Develop a plan to investigate what impact the lack of a drafting check has had on the drawings. The plan should be provided with response to t SDR.	the		
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N-QA-038 WMPO STANDARD DEFICIENCY REPORT 3/87 2 Severity Level 🗔 1 🕅 2 🗔 3 Date NOV 29, 1988 Page 1 of 2 Organization 3 Discovered During H&N AUDIT S89-01 3º Identified By M. Brake 3b Branch Chief 4 SDR No. Concurrence Date 251 Rev. 0 7 Response Due Date is 20 Working Days from 5 Organization 6 Person(s) Contacted Holmes & Narver R. Schreiner/D. Brown Date of Transmittal g 8 Requirement (Audit Checklist Reference, if Applicable) Completed by Originating (Audit Checklist Item T-9) H&N Procedure NNWSI-007, Rev. 1, "Work Initiation", Sections 6.4.1 & 6.4.2, "Any revision of criteria or work scope changes from the original WI requires 9 Deficiency 1. WIs 88-15, 88-16, 88-17, 88-19, 88-21, 88-22, 88-27, 88-31, 88-32, and 88-33 have not been revised when criteria or work scope were revised. 2. In the same WIs, the references to the Design Basis Document (DBD), Rev 2, 10 Recommended Action(s): X Remedial X Investigative X Corrective 1. Revise the WIs to reference the latest criteria documents when revisions are received/made to the criteria documents. Apryl. 11 QAE/Lead Auditor Date 12 Branch Manager Date 13 Project Quality Mgr. Date dans to 12/12/88 61 12/19/88 12-12-88 an 14 Remedial/Investigative Action(s) 2 Block 15 Effective Date 2. Completed by Organization 16 Cause of the Condition & Corrective Action to Prevent Recurrence 17 Effective Date . 18 Signature/Date Accept Amended QAE/Lead Auditor/Date Branch Manager/Date 19 Response Response QAE/Lead Auditor/Date Branch Manager/Date 20 Amended δ Response ð **QAE/Lead** Auditor/Date □ Satisfactory Branch Manager/Date 21 Verifi-Unsatisfactory cation p 22 Remarks 6 Comp. QAE/Lead Auditor/Date | Branch Manager/Date PQM/Date 23 QA CLOSURE

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SDR No. 251	Rev. 0	Page 2 of 2
	continued ) sed, using the same number <sup>#</sup> , and <sup>#</sup> At <sup>.</sup> ia revision to the revised WI <sup>#</sup> .	tach or reference the
9 Deficiency (		
	Actions ( continued )	
changes, the 3. Develop a pla identified in The plan show	nagement control system to ensure the effected documents are revised accor- an to investigate what impact the inden n block 9 has had on the quality of d uld be provided with response to the riate personnel to revised procedural	rdingly. correct design information design output documents. SDR.
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		THE STATE ST	WMPO STA	NDARD	DEFICIENC	Y REPORT	Г	N-QA-038 3/87
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	Organization	3 Discovered During H&N Audit S89-01	3º Identified M. Brake	Ву Зь	Branch Chie Concurrence		4 SDR No. 252	Rev. <u>0</u>
				n(s) Contac reiner/D.				Due Date is ng Days from ransmittal
	Completed by Originating QA	8 Requirement (Audit (Audit Checklis H&N NNWSI Qual para. III.C.1,	st Item T-8) ity Assurance	Program	Plan, Rev.			
	ted by Ori	9 Deficiency Contrary to the contain suffic and verified w	ient detail s ithout the or	uch that iginator	the analysi present [E-	is can be -0002, E-0	understood, r 020, and E-00	eviewed,
	Comple	10 Recommended Ac 1. Verify that stand alone		ions (des	ign analysi			n
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	WMPO STANDARD DEFICIENCY REPOR CONTINUATION SHEET	T	N-QA-038 10/86
SDR No. 252	Rev. 0	Page 2	of 2
8 Requirement ( c	continued )		
	cailsuch that a technically qualified person wrify the analysis without recourse to the or		
9 Deficiency ( co	ontinued )		
It should be note	vil calculation does not meet the above required that H&N Surveillance N88-5-0011 covered mathematical does not cover the above deficiency, but it does not cover the source of the source deficiency.	any of the item	5
are incomplete. of the analysis, of applicable ref data, identificat verification as t	tes cannot be checked without the originator la The analyses do not contain a definition of a definition of design input and their source derences, results of literature searches or of the design proceeds, and indication of those where the analyses could stand alone and be reperified.	the objective es, a listing ther background hich require es. If these	
10 Recommended Ac	ctions ( continued )	,	
had on the qua response to th 3. Take action to	assure future calculation packages are gener	e provided with	
program requir	ements.		

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Originating Q	εR	(Audit Cl H&N NNWS)		em 1-45) ssurance	Prog	ram Plan,	Rev. 1,		n 6, "Docume 11 be prescr		
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8 Requirement	( continued )		
	dures appropriately reviewed and concu ne procedure shall provide for impleme		:
1. Identifica	tion of documents to be controlled.		
	tion of assignment of responsibility f and issuing documents.	or preparing, reviewing,	
	locuments for technical adequacy, comp of appropriate quality requirements pr	• •	nd
9 Deficiency	( continued )		
2. A procedur completene	and issuing the DBD. that addresses review of the DBD for s, correctness, and inclusion of appr s prior to approval and issuance.		
10 Recommende	Actions ( continued )		
2. Train appr	priate personnel to new procedural re	quirements.	

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		5 Organization Holmes & Nary		n(s) Contacted 1	7 Response Due Date is 20 Working Days from Date of Transmittal
	<b>Originating QA</b>	8 Requirement NNWSI-SO for perfe Records	orming the following	ra. 5.4.4, "Project parts g activities in support of	icipants are responsible of the QARMS: Collect QA n, not to exceed 30 days."
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WMPO STANDARD DEFICIENCY REPORT N-QA-038 10/86 CONTINUATION SHEET SDR No. 254 Rev. 0 Page 2 of 2 8 Requirement ( continued ) 9 Deficiency ( continued ) personnel. In addition, H&N NNWSI QAPP, Section 17, and H&N procedure NNWSI-008, Rev. 2, do not address the 30 day requirement specified in NNWSI-SOP-17-01, Rev. 0. 10 Recommended Actions ( continued ) 2. Revise the appropriate procedures to address the current Project Office requirements. 3. Train appropriate personnel to revised procedural requirements. . =; 

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		5 Organization Holmes & Narver		6 Person(s) R. Sabol	Contacted	1		20 Work	e Due Date is ing Days from Transmittal
	ginating Q/	s Requirement (A (Audit Chec H&N NNWSI Q III.E.4, "A	cklist It Juality A	em 1-72) ssurance Pro	ogram Pla	blicable) n, Rev. 1, Se mmary of the		18, "Audit	s", para.
	Completed by Originating QA	9 Deficiency Contrary to address the		•		t reports No. nt audited.	87-02	and 87-10	do not
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	WMPO STANDARD DEFICIENCY REPORT CONTINUATION SHEET			N-QA 10/86	-038
	SDR No. 255 Rev. 0	Page	2	of	2
	8 Requirement ( continued ) a statement of the effectiveness of the QA program elements audited	₫¶.			
	10 Recommended Actions ( continued )				
	2. Train Audit personnel to the revised procedural requirements.				
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	5 Orga Holmes	nization & Narve	r	6 Person C. Wrig					e Due Da king Days Transmitt	from
<b>Originating QA</b>	8 Requ (A 1.	udit Che H&N NNW	cklist SI Qual	Item 1-64) ity Assuran	nce P	e, if Applicable) Program Plan, Rev. external audits s				her
bу	Co: an	ntrary t		bove requir Corrective		t, H&N is not auc on).	liting cr	iteria 18	(Audits)	
Completed		Develop 16 and	a plan 18. The	which desc e plan shou	ribe	Investigative s how H&N will pr e provided with r	rovide co	verage of		
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r 1		WMPO STANDARD DEFICIENCY REPORT CONTINUATION SHEET	N-QA-038 10/86
$\bigcirc$	SDR No. 256	Rev. 0 Page 2	of 2
	organizations's QA activities" 2. H&N Procedure NNWS scheduled in a mann	e of all applicable elements of this QAPP or the Manual, as appropriate, commensurate with ongoing I-031, Rev. O, "Audits", para. 6.1.2, "Audits shall be her to provide coverage of all applicable elements of t zation's QA Manual commensurate with ongoing	he
	2. Revise the current	audit schedule to include criteria 16 and 18.	
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)	c	1 Date November	29, 1988 2 5	Severity Level	1 🛛 2 🗔 3	3 Page 1 of 3
-	Organization	3 Discovered Durin H&N Audit S89-01	ng 30 Identified By J. Jardine	y 3b Branch Concurr	Chief rence Date	4 SDR No. 257 Rev. 0
	-	i Holmes & Narver		b) Contacted iner/D. Brown		7 Response Due Date is 20 Working Days from Date of Transmittal
	Originating QA	i a nequirement (Au	dit Checklist Reference list Items 1-10, v. 1, Section 5,	1-11, 1-12, 1-	14, 1-19, 1-20	
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E N	WMPO STANDARD DEFICIENCY REPORT CONTINUATION SHEET		N-QA-038 10/86
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8	Requirement ( continued ) Instructions, plans, procedures, etc., shall: Include or reference appropriate quantitative or qualitative acc criteria for determining that prescribed activities have been satisfactorily accomplished."	eptance	
8	Deficiency ( continued )		
	mples indicate the areas in which H&N procedures fail to provide el of detail or guidance to those responsible for implementation		ient
1.	H&N NNWSI-007, Rev. 0, with ICN-002, Rev. 0, "Work Initiation, Gathering, and Reporting," and NNWSI-015, Rev. 0, "Design Input do not instruct those responsible for implementation with regar aspects of design input must be reviewed in order to arrive at of the input. Instructions directing such a review should, at include the following:	Control <sup>®</sup> d to what acceptanc	e
	1) a comparison of subject input with known values, standard ta information, and codes;	bles,	
	<ol> <li>a check to determine if the input is complete such as a refe Attachment 8.1 of NNWSI-015;</li> </ol>	rence to	
	3) a check to confirm accuracy of the input;	•	
	4) a check to determine if the input requires a change to estab input and an assessment of related input that requires a cha		
	5) an assessment of whether the input will result in the use of available technology and ëquipment or some arrangement that the state of the art.		
2.	H&N NNWSI-006, Rev. 1, "Design Analysis," does not impart the m an analysis is more than a set of calculations. This procedure trates heavily on who prepares, where the analyses are sent to etcbut fails to convey the fundamental purpose of an analysis is, an analysis must prove through use of progressive and order that the design of the item will serve safely and effectively u established design conditions. The designer must postulate wha design conditions are, including worse case conditions, and pro disprove that design objectives of safety and effectiveness can	concen- next, s. That ly logic nder the t the ve or	at
3.	H&N NNWSI-029, Rev. 1, "Design Interface Control," does not convisions to assure that traceability is achieved between Design		

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9 U	eficiency ( con	tinued )			
				gs, System Interface procurement and constru	1C-
4.		Rev. O, does not e Para. 6.3.2.	provide instructio	ons on how comments are	•
5.	responsible ar selected corre method was use are to be inco responsible in have learned o instructions r	e expected to ass ctly, whether ass d etcThe proc rporated into the dicate their sati f the design. Fu	cedure does not expl e Design Verification isfaction or dissation wither, the procedur ions of comments made	inputs have been , whether a proper desi lain how these question on Report nor how those isfaction with what the	ns e ey
6.	engineering di	sciplines are req	t contain instructio quired to review a d eview comments are r	lrawing. No instruction	ns
10 ·	Recommended Act	ions ( continued	)		
2.	Perform and do of similar def	•	to determine extent	; and depth	
	Revise procedu	res to reinforce	QA reviews of subje requirements for QA resolutions.	ect procedures. I reviews including	ndrø -
<b>4.</b> .	Train appropri	ate personnel to	revised procedural	requirements.	
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8 Requirement ( continued )

SDR No. 258

"A review of all instructions, procedures, plans and drawings shall be made to assure technical adequacy and inclusion of appropriate quality requirements."

H&N QAPP Rev. 1, Section 6, Para. III.A.3 states:

"The [document control] procedure shall provide for implementation of the following:

Review of documents for technical adequacy, completeness, correctness, and inclusion of appropriate quality requirements prior to approval and issuance."

9 Deficiency ( continued )

indicate the areas where H&N procedural reviews have failed to assure proper and timely translation of QA requirements from the H&N QAPP into procedures.

1. Rev. O of the H&N QAPP, approved for use by the Project Office on 2/29/88, contained a requirement in Section 3, Para. III.B.1. directing the review and approval by the responsible design organization and the QA organization regarding the selection of design inputs. This requirement did not apprear in Rev. O of H&N NNWSI-007 "Work Initiation, Criteria Gathering, and Reporting," (effective date, 4/3/87). Approximately, 115 days after the requirement appeared in Rev. O of the H&N QAPP, ICN-001, Rev. O to NNWSI-007, Rev. O, corrected the omission. In the interim period, several Work Initiation Forms were generated that did not require such a review.

2. Rev. O and Rev. 1 of the H&N QAPP contained a requirement in Section 3, Para. III.D.5.a(6), directing design reviews to consideration of "necessary design inputs and verification requirements for interfacing organizations [to be] specified in design documents or in supporting procedures or instructions ." This requirement appears in Para. 6.3.1.4 of H&N NNWSI-014, Rev. O as, "Have the design interface requirements been satisfied?" This translation eliminated the emphasis on the necessity to identify and verify design inputs that establish a common basis for the design of systems, structures and components for which more than one i design organization has responsibility for verification of the interfacing design.

3. Rev. O and Rev. 1 of the H&N QAPP contained a requirement in Section 3, Para. C.1., directing that calculations shall be identifiable by subject (including structure, system, or component). Rev. 1 of H&N NNWSI-006, "Design Analysis" does not contain provisions for implementation of this requirement.

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