

AUDIT PLAN  
AUDIT NUMBER: HQ-93-03  
AUDIT OF THE CRWMS M&O

An audit of M&O will be conducted the week of February 1-5, 1993, in their offices at Vienna, Va.

The Audit will be conducted by:

Dennis Brown	CER Corp., Arlington, VA	Audit Team Leader
Fred Bearham	CER Corp., Arlington, VA	Auditor
Hank Green	CER Corp., Arlington, VA	Auditor
Hugh Lentz	CER Corp., Arlington, VA	Auditor
Marlin Horseman	CER Corp., Arlington, VA	Auditor
Les Wagner	CER Corp., Arlington, VA	Auditor
Rob Howard	Weston, Washington, D.C.	Auditor
Leonard Gordan	Weston, Washington, D.C.	Auditor

Observers from the State of Nevada, the NRC, the Edison Electric Institute and other interested parties may accompany the team as observers.

AUDIT SCOPE

This compliance-based audit will evaluate the adequacy and effectiveness of the M&O Quality Assurance Program.

QA PROGRAM ELEMENTS

Implementation of the following QA Program Elements will be evaluated during the audit:

1. - Organization
2. - Quality Assurance Program
3. - Design Control
4. - Procurement Document Control
5. - Instructions, Procedures, and Drawings
6. - Document Control
7. - Control of Purchased Items and Services
- 16.- Corrective Action
- 17.- Quality Assurance Records
- 18.- Audits
- 19.- Computer Software

QA Program Elements 8-15 were considered during development of this Audit Plan and determined to be not applicable to the M&O, Vienna scope of work.

Checklists developed from the M&O Quality Assurance Program Description Document (QAPD) and implementing Quality Assurance Procedures (QAPs) will be used to conduct the audit. If the audit team identifies a need to verify additional areas during the audit, they will be added to the audit checklist and verified accordingly.

## PRELIMINARY AUDIT SCHEDULE

Audit Team Briefing	February 1	8:30 am
Preaudit Meeting	February 1	9:00 am
Conduct of Audit	February 1	9:30 am - 4:00 pm
	February 2	8:30 am - 4:00 pm
	February 5	8:30 am - 12:00 pm
Postaudit Meeting	February 5	2:30 pm - 3:30 pm
Daily Audit Team Debriefing		4:00 pm
Daily Summary to M&O/TRW		8:30 am

The audit may be extended as necessary to ensure adequate coverage of each QA Program Element.

Prepared by: *R. Dennis Brown*  
Dennis Brown, CER Corporation  
Audit Team Leader

Date: *1/12/93*

Approved by: *Donald G. Horton*  
Donald G. Horton, Director  
Office of Quality Assurance

Date: *1/14/93*

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U.S. DEPARTMENT OF ENERGY  
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PAGE 1 OF 5  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST**

ORGANIZATION EVALUATED  CRWMS M&O		<input checked="" type="checkbox"/> EXTERNAL  <input type="checkbox"/> INTERNAL	<input checked="" type="checkbox"/> AUDIT  <input type="checkbox"/> SURVEILLANCE	PREPARED BY <u>F. H. Lentz</u> DATE <u>1/6/93</u>	
DATES OF EVALUATION  2/1-5/93					
CONTROLLING DOCUMENT (Title, Number, Revision) <u>QAP-2-4, Rev. 1</u> <u>Quality Assurance Program Status and Trend Reporting</u>				ACTIVITY EVALUATED QA Program Status and Trending	
ITEM NO.	CHARACTERISTICS TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted			* RESULTS
1	Obtain copy of information (printout) included in the QMIS Data Base.  Verify the QMIS Data Base includes information from the following areas:  <ul style="list-style-type: none"> <li>• QA Procedures</li> <li>• QAPD</li> <li>• Audit Reports</li> <li>• Surveillance Reports</li> <li>• CARs</li> <li>• Management Assessment Reports</li> <li>• Stop Work Notification Reports</li> <li>• Significant Quality Issues</li> <li>• Dispute Evaluation Forms</li> </ul> (Para. 4.4.6)				
* INDICATE RESULTS: SATISFACTORY (SAT), UNSATISFACTORY (UNSAT), NOT APPLICABLE (N/A)					

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SHEET 2 OF 5  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
2	Verify that the Systems Engineering QA Manager evaluates and reports on significant items identified from the database on a monthly basis. (Para. 5.1.1)		
3	Verify that the Systems Engineering QA Manager prepares and releases the Quarterly QA Program status and Trend Report. (Obtain copies of reports) (Paras. 5.2.1 and 5.2.2)		

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

SHEET 3 OF 5  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
4	<p>Verify that the following summary and status information is included in the Status and Trend report:</p> <ul style="list-style-type: none"> <li>• QA program development/implementation</li> <li>• QA procedures development/implementation</li> <li>• Open/closed disputes</li> <li>• Deviations/waivers</li> <li>• Root causes/Actions to correct adverse trends</li> <li>• Audit reports</li> <li>• Surveillance reports</li> <li>• CARs</li> <li>• Management Assessment of QA Program</li> <li>• Previously reported trends/Corrective Action (Para. 5.2.1)</li> </ul>		
5	<p>Verify that QA Manager has approved Status/Trend Reports. (Para. 5.2.2)</p>		

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WASHINGTON, D.C.

SHEET 4 OF 5  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
6	Verify that SEQA manager distributed Status/Trend report IAW Para. 5.3.1.		
7	Verify that the Monthly and Quarterly QA Program Status/Trend Reports are collected and maintained as QA Records. (Para. 6.1.1) (Coordinate with Team D)		

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

SHEET 5 OF 5  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
8	Verify that the QAP for trending includes the following: <ul style="list-style-type: none"> <li>• quarterly indicators trended</li> <li>• methods of data handling</li> <li>• statistical processes</li> <li>• actions taken when adverse trend is identified</li> <li>• type, distribution, and frequency of issuance (CRWMS M&amp;O QAPD, Rev. 2, Para. 16.7)</li> </ul>		
9	Evaluate the adequacy of this procedure. (General)		

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U.S. DEPARTMENT OF ENERGY  
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PAGE 1 OF 5  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST**

ORGANIZATION EVALUATED  CRWMS M&O	<input checked="" type="checkbox"/> EXTERNAL  <input type="checkbox"/> INTERNAL	<input checked="" type="checkbox"/> AUDIT  <input type="checkbox"/> SURVEILLANCE	PREPARED BY <u>F.H. Lentz</u> DATE <u>1/6/93</u>  <div style="text-align: right;"><i>R. J. K.</i></div>	
DATES OF EVALUATION  2/1-5/93				
CONTROLLING DOCUMENT (Title, Number, Revision) <i>QAP-2-5, Rev. 1, QA Surveillance</i>			ACTIVITY EVALUATED Surveillances	
ITEM NO.	CHARACTERISTICS TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS	
1	Determine number of surveillances performed for FY92 and FY93. Select sample from working files and closed QA Records file. (General)  Determine how surveillances are planned and scheduled. Verify that the QA Audits Manager schedules surveillances. (Para. 5.1)			
2	Verify that surveillance team selected is qualified, trained, independent and led by a certified auditor. (Are the technical experts independent of activities under surveillance?) (Coordinate with Team C) (CRWMS M&O QAPD, Rev. 2, Para. 2.6)			

\* INDICATE RESULTS: SATISFACTORY (SAT), UNSATISFACTORY (UNSAT), NOT APPLICABLE (N/A)



**OFFICE OF CIVILIAN  
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WASHINGTON, D.C.**

SHEET 2 OF 5  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
3	Verify that checklist/annotated procedures are used for the surveillance. (Select sample from working files.) (Para. 5.2)		
4	Verify that the surveillance report includes the following: <ul style="list-style-type: none"> <li>• Date of surveillance</li> <li>• Persons conducting surveillance</li> <li>• Persons contacted</li> <li>• Activity/item under surveillance</li> <li>• Procedures governing activity</li> <li>• Conditions adverse to quality</li> <li>• Corrective action</li> <li>• Items of concern</li> <li>• Equipment used</li> </ul> (Para. 5.5.1)		

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WASHINGTON, D.C.

SHEET 3 OF 5  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
5	Determine who approves, issues and receives copy of Surveillance Report. (General)		
6	Verify that the Surveillance Report is collected and maintained as a QA Record. (Para. 6) (Coordinate with Team D)		

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

SHEET 4 OF 5  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
7	Evaluate the surveillance for adequacy and effectiveness (Did the surveillance determine the adequacy and compliance with established implementing procedures or the effectiveness of the implementation?) (Para. 3.2.3)		
8	Verify that surveillance open items are being tracked to closure. (Para. 4.3.6) (What procedure covers this requirement?)		

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

SHEET 5 OF 5  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
9	Evaluate the adequacy of the procedure. (General)		

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

PAGE 1 OF 9  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST**

ORGANIZATION EVALUATED  CRWMS M&O	<input checked="" type="checkbox"/> EXTERNAL  <input type="checkbox"/> INTERNAL	<input checked="" type="checkbox"/> AUDIT  <input type="checkbox"/> SURVEILLANCE	PREPARED BY <u>F.H. Lentz</u> DATE <u>1/6/93</u>  <div style="text-align: right;"><i>RJB</i></div>	
DATES OF EVALUATION  2/1-5/93				
CONTROLLING DOCUMENT (Title, Number, Revision) <i>QAP-16-1, Rev. 0, PCN P01, Corrective Action Report</i>			ACTIVITY EVALUATED Corrective Action	
ITEM NO.	CHARACTERISTICS TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS	
1	<p>Determine the number of CARs opened and closed during FY92 and FY93. Select a sample of open and closed CARs from the working/QA Records files, respectively. (General)</p> <p>Obtain copies of the related CAR status logs and the Quarterly CAR Status Reports for FY92 and FY93. (General)</p> <p>Obtain list of personnel involved in CAR process who require training. (Coordinate with Team C)</p> <p>Determine which CARs were identified by organizations other than QA organizations. (General)</p> <p>Verify that the CARs are being filled out completely and correctly. (General)</p>			

\* INDICATE RESULTS: SATISFACTORY (SAT), UNSATISFACTORY (UNSAT), NOT APPLICABLE (N/A)

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

SHEET 2 OF 9  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
2	Verify that the CARs are numbered IAW Attachment III. (Para. 5.1.2)		
3	Verify that the CARs identified to have "No adverse condition" are voided and rejection justified. (Para. 5.1.3)		

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

SHEET 3 OF 9  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
4	Evaluate the condition adverse to quality for significance (Do we agree with CAR determination? - reference criteria in Para. 5.2.1).		
5	Evaluate the condition adverse to quality for stop work condition (Do we agree with CAR determination? - reference criteria in Para. 5.2.2).		

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

SHEET 4 OF 9  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
6	<p>Verify that the Interfacing Manager and QAR approve/concur with the following decisions (signatures):</p> <ul style="list-style-type: none"> <li>• CAR is correct and valid (Para. 5.1.3)</li> <li>• Classification (Para. 5.2.3)</li> <li>• Cause analysis (Para. 5.3)</li> <li>• Action planned to correct adverse condition (Para. 5.4.2)</li> <li>• Planned action to preclude recurrence (Para. 5.4.4)</li> <li>• Effectiveness of the corrective/preventative actions (Para. 5.5.2)</li> </ul>		
7	<p>Evaluate root cause analysis and impact on related activities (Do we agree with analysis?). (Para. 5.3)</p>		



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

SHEET 5 OF 9  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
8	Verify that planned action to correct the adverse condition and actions to preclude recurrence of significant conditions adverse to quality contain start/completion dates. (Para. 5.4.1)		
9	Verify that responses to significant conditions adverse to quality are forwarded to the CAR Coordinator within 30 days. (Para. 5.4.3)		

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

SHEET 6 OF 9  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
10	Verify that extensions are requested in writing prior to the original due date. (Para. 5.4.5)		
11	Verify that the implementation of corrective/preventative actions for conditions adverse to quality are verified by QA. (Para. 5.5.1)		

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

SHEET 7 OF 9  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
12	Verify that the QA Manager concurs (signature) with closeout of the CAR by the CAR Coordinator. Verify that closeout is accomplished in a timely manner. (Para. 5.5.5)		
13	Verify that the status of CARs is being documented in a CAR Status Log. (Para. 5.6.1)		

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

SHEET 8 OF 9  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
14	Verify that the QA Manager is preparing and distributing a Quarterly CAR Status Report which includes: <ul style="list-style-type: none"><li>• Open CAR List</li><li>• Summary of CARs Closed.</li></ul> (Para. 5.6.3)		
15	Verify that the completed CARs and supporting documentation are collected and maintained as QA Records. (Para. 6) (Coordinate with Team D)		

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

SHEET 9 OF 9  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
16	Evlauate the adequacy of this procedure. (General)		

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

SHEET 1 OF 7  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST**

ORGANIZATION EVALUATED  CRWMS M&O	<input checked="" type="checkbox"/> EXTERNAL  <input type="checkbox"/> INTERNAL	<input checked="" type="checkbox"/> AUDIT  <input type="checkbox"/> SURVEILLANCE	PREPARED BY <u>F. H. Lentz</u> DATE <u>1/5/93</u>  <div style="text-align: right;"><i>RLH</i></div>		
DATES OF EVALUATION  2/1-5/93					
CONTROLLING DOCUMENT (Title, Number, Revision) <i>QAP-16-2, Rev. 0, Stop Work</i>			ACTIVITY EVALUATED Stop Work		
ITEM NO.	CHARACTERISTICS TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS		
1	Determine if any Stop Work Notification Reports have been initiated in FY92 or 93. Review all reports and related records.  Verify that the QAP-SWNR has been completed properly. <ul style="list-style-type: none"> <li>• By originator</li> <li>• By Responsible QA Manager</li> </ul> (Para. 5.1.1, 5.1.5)				

\* INDICATE RESULTS: SATISFACTORY (SAT), UNSATISFACTORY (UNSAT), NOT APPLICABLE (N/A)

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

SHEET 2 OF 7  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
2	Verify that rejected SWNRs have been documented and justified. (Para. 5.1.3)		
3	Verify that originator, Responsible QA Manager, and M&O QA Manager have signed SWNR. (Also dated) (Para. 5.1.1.B.3 and 5.1.4)		

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

SHEET 3 OF 7  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
4	Verify that SWNR is logged and assigned CAR has been logged. (Para. 5.1.5 A&B)		
5	Verify that SWNR is handled expeditiously and all parties are notified. Copies issued to required people. (Para. 5.1.5 E, F & G)		



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

SHEET 4 OF 7  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
6	Verify that Responsible Manager has signed/dated the SWNR indicating work has been stopped. (Para. 5.1.5 E)		
7	Verify that proper Corrective Action was implemented and verified via QAP-16-1. (Para. 5.2.1 and 5.2.2)		

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

SHEET 5 OF 7  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
8	Verify that M&O QA Manager and M&O General Manager approved the resuming of work by signing/dating SWNR. (Para. 5.2.2 and 5.2.4)		
9	Verify that Responsible Manager acknowledged the notification to resume work by signing/dating the SWNR. (Para. 5.3.2)		

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

SHEET 6 OF 7  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
10	Verify that the completed SWNR was provided to personnel in Para. 5.3.3.		
11	Verify that original completed SWNR and related documents are handled as QA records. (Para. 6) (Coordinate with Team D)		

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

SHEET 7 OF 7  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
12	Evaluate Description, Reasoning, Corrective Action, and the CAR verification for effectiveness of the Stop Work procedure. (General)		
13	Evaluate the adequacy of this procedure. (General)		

**OFFICE OF CIVILIAN  
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U.S. DEPARTMENT OF ENERGY  
WASHINGTON, D.C.**

PAGE 1 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST**

ORGANIZATION EVALUATED  CRWMS M&O	<input checked="" type="checkbox"/> EXTERNAL  <input type="checkbox"/> INTERNAL	<input checked="" type="checkbox"/> AUDIT  <input type="checkbox"/> SURVEILLANCE	PREPARED BY <u>F. H. Lentz</u> DATE <u>1/5/93</u>  <div style="text-align: right;"><i>RWB</i></div>	
DATES OF EVALUATION  2/1-5/93				
CONTROLLING DOCUMENT (Title, Number, Revision) <i>QAP-18-1, Rev. 0, Certification of Audit Personnel</i>			ACTIVITY EVALUATED Certification of Audit Personnel	
ITEM NO.	CHARACTERISTICS TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS	
1	Determine number of personnel certified as auditors, lead auditors, auditors-in-training, and technical experts. Select sample of each group.          Determine how auditors are qualified/certified. <ul style="list-style-type: none"> <li>• experience and training</li> <li>• orientation</li> <li>• training program</li> <li>• on-the-job training</li> </ul> (NQA-1, Supplement 2S-3, Para. 2.1)			

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**OFFICE OF CIVILIAN  
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U.S. DEPARTMENT OF ENERGY  
WASHINGTON, D.C.**

SHEET 2 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
2	<p>Verify that Lead Auditor Qualification Form has been completed properly.</p> <ul style="list-style-type: none"> <li>• 10 verifiable credit points</li> <li>• Auditor Training Program</li> <li>• Passed exam with grade of 80</li> <li>• Oral interview</li> <li>• 5 QA audits (3 years)/1 Nuclear (1 year)</li> <li>• Communication skills</li> <li>• QA Manager approval (Para. 4.2.3)</li> </ul> <p>(Para. 5.2)</p>		
3	<p>Verify that the 10 credit point items (education, experience, professional accomplishment, and management justification) have been verified. (Para. 5.2.1)</p> <p>(Coordinate with Team C)</p>		

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

SHEET 3 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
4	Verify that personnel have attended Auditor Training Program and have passed exam with a grade of at least 80. (Para. 5.2.2)		
5	Verify that personnel have participated in 5 audits within last 3 years and 1 nuclear within last year. (Para. 5.2.3)		

SHEET 4 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
6	Verify that communication skill have been evaluated. (Para. 5.2.4)		
	Determine if any lead auditors have been certified based on person having current certification. Select sample.		
7	Verify that supporting evidence justifies acceptance of current certification to NQA-1 and that Quality Manager has documented the acceptance with a Memorandum to the M&O Training files. (Para. 5.1.2)		



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

SHEET 5 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
8	Verify that lead auditors are maintaining proficiency with two audits each year (see block 13 of the L/A Qualification form). (Para. 5.3.1)		
9	Verify that QA manager evaluates each Lead Auditor annually. (Para. 5.3.3)		

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

SHEET 6 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
10	Verify that Auditor/TE Qualification Form has been completed properly for Auditors. <ul style="list-style-type: none"> <li>• Orientation training</li> <li>• Auditor Training Program</li> <li>• Pass exam with grade 80</li> <li>• 2 audits as Auditor-in-Training</li> </ul> (Para. 5.5.1)		
11	Verify that personnel have attended training and have passed exam with a grade of at least 80. (Paras. 5.5.1A and B)		

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

SHEET 7 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
12	Verify that personnel have participation on two audits. (Para. 5.5.1C)		
13	Verify that QA Manager has signed the Auditor/TE Qualification Form. (Para. 5.5.2)		

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

SHEET 8 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
14	<p>Verify that Auditor/Technical Expert Qualification Form has been completed properly for Technical Experts.</p> <ul style="list-style-type: none"> <li>• Orientation training</li> <li>• M&amp;O Technical Expert Training Program</li> <li>• Passed exam with grade of 80</li> </ul> <p>(Para. 5.6.1)</p>		
15	<p>Verify that personnel have attended training programs and have passed the exam with a grade of at least 80. (Paras. 5.6.1A and B)</p>		

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

SHEET 9 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
16	Verify that the Auditor/TE Qualification Form is signed by the QA Audit Manager. (Para. 5.6.2)		
17	Verify that the M&O HR manager retains the following records: <ul style="list-style-type: none"> <li>• L/A Qualification Forms</li> <li>• Auditor/TE Qualification Forms</li> <li>• Resumes</li> <li>• Examinations</li> </ul> (Para. 6.1.1) (Coordinate with Team D)		

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

SHEET 10 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
18	Verify that lead auditor files are updated annually. (NQA-1, Supplement 2S-3, Para. 6.3)		
19	Evaluate adequacy of this procedure. (General)		

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

SHEET 1 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST**

ORGANIZATION EVALUATED  CRWMS M&O	<input checked="" type="checkbox"/> EXTERNAL  <input type="checkbox"/> INTERNAL	<input checked="" type="checkbox"/> AUDIT  <input type="checkbox"/> SURVEILLANCE	PREPARED BY <u>F.H. Lentz</u> DATE <u>1/5/93</u>  <div style="text-align: right;"><i>RDA</i></div>	
DATES OF EVALUATION  2/1-5/93				
CONTROLLING DOCUMENT (Title, Number, Revision) <i>QAP-18-2, Rev. 1, Audits</i>			ACTIVITY EVALUATED Audits	
ITEM NO.	CHARACTERISTICS TO BE EVALUATED		REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
1	<p>Determine the number of audits performed during FY92 &amp; FY93 to-date. Select sample from each year for evaluation.</p> <p>Verify that an audit schedule was prepared and approved for each year and they were reviewed quarterly by the QA Audits Manager. (Evaluate whether schedule includes the important QA activities in progress.)</p> <p>Does the annual schedule include audits to be performed, activities to be audited, frequency, and schedule dates? (Para. 5.2)</p>			

\* INDICATE RESULTS: SATISFACTORY (SAT), UNSATISFACTORY (UNSAT), NOT APPLICABLE (N/A)

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

SHEET 2 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
2	Verify that all M&O implemented criteria (QARD/NQA-1) are audited internally on an annual basis. (Para. 5.2)		
3	Verify that supplier QA programs are audited on a triennial basis and are evaluated at least annually. (Obtain list of suppliers - coordinate with Team B) (CRWMS QAPD, Rev. 2, Para. 18.2)		



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

SHEET 3 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
4	<p>Verify that the supplier evaluations are documented. Determine what was reviewed:</p> <ul style="list-style-type: none"> <li>• Supplier-furnished documents</li> <li>• Results of verifications</li> </ul> <p>(QARD, Para. 18.4)</p>		
5	<p>Verify that the audit team selected was qualified, trained, independent and led by a certified lead auditor. (Para. 5.3.1) (Coordinate with Team C)</p>		

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

SHEET 4 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
6	Verify that the Technical Experts have technical experience, are independent, and have been indoctrinated/trained in the audit process prior to the audit. (Para. 5.3.2)		
7	Verify that the audit plan addresses the following: <ul style="list-style-type: none"> <li>• scope</li> <li>• requirements</li> <li>• audit personnel</li> <li>• activities to be audited</li> <li>• organizations to be notified</li> <li>• applicable documents</li> <li>• schedule</li> <li>• verification of implementation for CARs</li> </ul> (Para. 5.4.2)		

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

SHEET 5 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
8	Verify that the QA audit manager approves the audit plan. (Para. 5.4.3)		
9	Verify that written notification has been provided to the organization to be audited prior to the audit. (Para. 5.5.2)		

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

SHEET 6 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
10	Verify that a pre-audit conference was conducted. (Who attended the conference; management?) (Para. 5.5.3)		
11	Verify that a post audit conference with the management of the audited organization was conducted. (Para. 5.5.5)		

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

SHEET 7 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
12	Verify that the ATL prepared an audit report IAW Attachment II within 30 days of the exit meeting. (Para. 5.6)		
13	Verify that the audit results are reported to Management having responsibility for the area audited. (CRWMS M&O QAPD, Rev. 2, Para. 18.6)		

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

SHEET 8 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
14	Verify that QA Audits Group evaluates adequacy of the audit responses. (CRWMS M&O QAPD, Rev. 2, Para. 18.6)		
15	Verify that the audit records include the following: (Coordinate with Team D) <ul style="list-style-type: none"> <li>• Audit Plans</li> <li>• Audit Notifications</li> <li>• Audit Reports</li> <li>• CARs</li> <li>• Written responses to audit reports</li> <li>• Records of completion of corrective action</li> <li>• Audit Logs</li> <li>• Audit Schedules</li> </ul>		

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

SHEET 9 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
16	Evaluate the ability of the audit conducted to determine the effectiveness of the QA program elements. (Based on audit report and on other related/available documentation.) (General)		
17	Verify that an index of effectiveness for audited elements was produced. Verify that a periodic summary of effective index data is used to provide a program-wide assessment of the effectiveness of the QA Program. (Para. 5.1.3)		

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

SHEET 10 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
18	Evaluate adequacy of this procedure. (General)		



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

PAGE 1 OF 18  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST**

ORGANIZATION EVALUATED  M&O/TRW (Vienna)	<input checked="" type="checkbox"/> EXTERNAL  <input type="checkbox"/> INTERNAL	<input checked="" type="checkbox"/> AUDIT  <input type="checkbox"/> SURVEILLANCE	PREPARED BY <u>L. W. Wagner</u> DATE <u>01/26/93</u>  <div style="text-align: right;"><i>RWR</i></div>	
DATES OF EVALUATION  February 1-5, 1993				
CONTROLLING DOCUMENT (Title, Number, Revision) <i>Computer Software Verification and Validation, QAP-19-1, Rev. 1</i>			ACTIVITY EVALUATED Verification and Validation	
ITEM NO.	CHARACTERISTICS TO BE EVALUATED		REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
1	Verify that the V&V Analyst received and utilized the approved Requirements Applicability Assessment (RAA) and Software Development Plan (SDP), as a minimum, for input in the planning and performance of V&V Activities. (para 5.1.2)			

\* INDICATE RESULTS: SATISFACTORY (SAT), UNSATISFACTORY (UNSAT), NOT APPLICABLE (N/A)

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

SHEET 2 OF 18  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
2	Verify the V&V Analyst performing verification activities utilize the appropriate checklist for recording results and that the checklist are filled out correctly and completely. (para 5.1.3)		

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

SHEET 3 OF 18  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
3	<p>Verify that V&amp;V Activities are documented in a set of V&amp;V reports containing the following: (para 5.1.4)</p> <p>A. V&amp;V reports which include</p> <ol style="list-style-type: none"> <li>1. Summaries of activity results</li> <li>2. Any problems encountered</li> <li>3. Any resolution of problems</li> <li>4. General assessment of the phase</li> <li>5. Recommendations</li> </ol> <p>B. Problem reports which include</p> <ol style="list-style-type: none"> <li>1. Exact origin of the discrepancy</li> <li>2. Complete description of the discrepancy</li> <li>3. Discovery method</li> <li>4. Severity of the discrepancy</li> <li>5. Impact on software project, including any requirements violated</li> <li>6. Detailed recommended resolutions</li> </ol> <p>C. Trace Matrix used to list the software requirements (refer 5.2.1.2 B)</p> <p>D. Completed checklist.</p>		

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

SHEET 4 OF 18  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
4	<p>Verify the V&amp;V Team Leader develops a V&amp;V Plan which describes the following: (para 5.1.5.1)</p> <ul style="list-style-type: none"> <li>• Type of software</li> <li>• Objectives of the software</li> <li>• V&amp;V activities to be performed</li> <li>• Justification for activities omitted</li> <li>• Schedule for the activities</li> <li>• Inputs required from other organizations</li> <li>• Special tools and techniques to be used</li> <li>• V&amp;V team member assigned</li> <li>• Responsibilities assigned</li> <li>• Documents and reports to be delivered</li> </ul>		

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

SHEET 5 OF 18  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
5	Verify the V&V Activity Plan is submitted to the software project Supervising Manager/V&V Organization Manager and the QA Manager for approval before V&V activities are initiated. (para 5.1.5.3)		

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

SHEET 6 OF 18  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
6	<p>Verify that the V&amp;V Analyst performed a review or analysis of the Software Requirements Specification (SRS), using the appropriate checklist. This review or analysis shall cover: (para 5.2.1.2)</p> <ul style="list-style-type: none"> <li>• Document format</li> <li>• Requirements</li> <li>• Processing and data flows</li> <li>• Design assumptions, limitations, constraints and special needs</li> <li>• Acceptance criteria</li> <li>• Model validation criteria</li> </ul>		

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

SHEET 7 OF 18  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
7	Verify the V&V Analyst constructed a Trace Matrix with the assistance of the software team by extracting the requirements in the SRS, grouping the requirements functionality and placing the Trace Matrix, which is updated in subsequent life-cycle phases. (para 5.2.1.2 B)		

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

SHEET 8 OF 18  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
8	Verify the appropriate portions of the required checklist are completed in sequence with the software testing phases when reviewing the Test Plan in the Preliminary, Updated and Final test phases of the software. Also verify that the Trace Matrix is updated at these times, as necessary. (paras 5.2.2, 5.2.4 and 5.2.6)		



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

SHEET 9 OF 18  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
9	Verify the V&V Analyst, using the proper checklist, updates the Trace Matrix accordingly and performs the design verification activities reviewing System Design Description (SDD) for the following: (para 5.2.3) <ul style="list-style-type: none"><li>• SDD document format</li><li>• SDD/SRS compliance</li><li>• SDD module descriptions</li><li>• SDD data elements</li><li>• SDD processing and data flows</li><li>• SDD interfaces</li><li>• SDD limitations and assumptions</li><li>• SDD summary checks</li></ul>		

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

SHEET 10 OF 18  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
10	Verify the V&V Analyst, using the proper checklist, updates the Trace Matrix accordingly and performs the code verification activities evaluating the code for the following and document the results in the Source Code Verification Report: (para 5.2.5) <ul style="list-style-type: none"><li>• Code format</li><li>• SDD compliance</li><li>• Data analysis</li><li>• Logic analysis</li><li>• Programming practices</li><li>• Documentation</li><li>• Summary Checks</li></ul>		

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

SHEET 11 OF 18  
AUDIT/SURVEILLANCE  
NO. HO-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
11	<p>Verify the V&amp;V Analyst, using the Test Verification and the Test Witness checklists, updates the Trace Matrix accordingly, checks &amp; witnesses the following and documents the results in the Test Verification Report: (para 5.2.7)</p> <ul style="list-style-type: none"> <li>• Test environment</li> <li>• Test resources</li> <li>• Test schedules</li> <li>• Test results</li> </ul>		

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

SHEET 12 OF 18  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
12	Verify the V&V Analyst, using the Installation Verification checklist, reviews the Installation Manual for the following: (para 5.2.8) <ul style="list-style-type: none"><li>• All installation procedures are included</li><li>• All installation procedures are clear and consistent</li><li>• Test adequately demonstrate proper installation</li><li>• Expected outputs are included and consistent</li></ul>		

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

SHEET 13 OF 18  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
13	Verification the V&V Analyst, upon successful completion of software testing, performs a final V&V Assessment, which includes the following and documents the results in the Final V&V Report. The V&V Analyst shall also issue a Software Qualification Recommendation Letter to QA: (para 5.2.9) <ul style="list-style-type: none"><li>• Review of all action items to ensure closure</li><li>• Ensure that all discrepancies have been resolved</li><li>• Ensure required documentation has been completed</li></ul>		

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

SHEET 14 OF 18  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS <i>Record objective evidence reviewed, method of verification, personnel contacted</i>	RESULTS
14	Verify that existing software has V&V assessment performed and results documented, prior to use on CRWMS quality affecting work. (para 5.3)		

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

SHEET 15 OF 18  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
15	Verify for modifications to software, that has already been "Qualified," that a Test Plan is developed which test the modifications and a regression test is performed to ensure the functions and capabilities of the software that were not modified perform as required. (para 5.4.1)		

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

SHEET 16 OF 18  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
16	Verify for modifications to software, that has not been "Qualified," that the complete software has V&V assessment performed and results documented in the same manner as existing software. (para 5.4.2)		



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

SHEET 17 OF 18  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
17	Verify the following V&V reports are delivered to the Software Project Manager, V&V Manager or supervising manager (whichever applies) and to the Quality Assurance Manager (or designee) who approves the V&V Report. (para 6.0) <ul style="list-style-type: none"><li>• V&amp;V Activity Plan</li><li>• Requirements Report</li><li>• Design Verification Report</li><li>• Code Verification Report</li><li>• Test Plan Verification Report</li><li>• Test Verification Report</li><li>• Installation Verification Report</li><li>• Software Qualification Recommendation Report</li></ul>		

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

SHEET 18 OF 18  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
18	Verify that the V&V reports are submitted to the Local Records Center. (para 6.0)		

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

PAGE 1 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

*RDB*

**QUALITY ASSURANCE CHECKLIST**

<b>ORGANIZATION EVALUATED</b>  M&O/TRW (Vienna)	<input checked="" type="checkbox"/> EXTERNAL  <input type="checkbox"/> INTERNAL	<input checked="" type="checkbox"/> AUDIT  <input type="checkbox"/> SURVEILLANCE	PREPARED BY <u>L. W. Wagner</u> DATE <u>01/26/93</u>	
<b>DATES OF EVALUATION</b>  February 1-5, 1993				
<b>CONTROLLING DOCUMENT</b> (Title, Number, Revision) <i>Software Configuration Management, QAP-19-2, Rev. 1, PCN P01</i>			<b>ACTIVITY EVALUATED</b> Computer Software Configuration Management	
<b>ITEM NO.</b>	<b>CHARACTERISTICS TO BE EVALUATED</b>		<b>REMARKS</b> Record objective evidence reviewed, method of verification, personnel contacted	* <b>RESULTS</b>
1	Verify that Software Requirements, Design Requirements and Product ("as-Built") baselines are being maintained for Software Configuration Management (SCM) controlled quality affecting software. (para 5.1)			

\* INDICATE RESULTS: SATISFACTORY (SAT), UNSATISFACTORY (UNSAT), NOT APPLICABLE (N/A)

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

SHEET 2 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
2	Verify all SCM controlled quality affecting software, submitted to M&O Software Configuration Management Organization (SCMO) is either "Approved" or "Conditionally Approved." (para 5.1.1)		

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

SHEET 3 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
3	Verify that all "Approved" software baseline has: (para 5.1.1.1) 1. Completed the approved requirements Applicability Assessment (RAA) and all required baseline lifecycle tasks as detailed in the M&O CSQAP. 2. Been submitted to and approved by the local, M&O or both SCCBs for use in quality affecting work and SCM control.		

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

SHEET 4 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
4	Verify that "Approved" software baselines has been controlled and issued in accordance with SCMP-1.		

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

SHEET 5 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
5	Verify that all "Conditionally Approved" software baseline can be determined to be not approved by the Software Configuration Control Board (SCCB) for use in quality affecting work. (para 5.1.1.2 step 3)		

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

SHEET 6 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
6	Verify the Software Requirements Baseline has been established upon completion of the Software Requirements Review (SRR) and that it consist of the approved Software Requirements Specification (SRS). (para 5.1.2)		



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

SHEET 7 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
7	Verify the Design Requirements Baseline has been established upon completion of the Software Design Review (SDR) and that it consist of the following: (para 5.1.3) 1. The authenticated SDD 2. Approved SPRs 3. Baselined (prior version) source code 4. Baselined documentation 5. Revised SRS		

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

SHEET 8 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
8	Verify the Product Baseline has been established upon completion of the Turnover Review (TOR) and that it consist of the following: (para 5.1.4) 1. The final SRS and SDD 2. Any proposed changes to the SRS and SDD 3. Final VDD 4. Final source code on electronic media 5. Final Software Test Plans/Procedures 6. Final Test Source Code on electronic media 7. Final Test Data Sets on electronic media		

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

SHEET 9 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
9	Verify for all interactive software, submitted to SCMO for baseline approval that the baseline computer display (for at least 3 seconds) and the top of each page of hardcopy printouts contain the SCM status message. (para 5.1.5)		

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

SHEET 10 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
10	Verify that deviations from, and waivers of, M&O software standards for quality affecting software have been prepared and processed in accordance with SCMP-3. (paras 4.1.10.1 i & 4.1.10.2 g)		

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

SHEET 11 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
11	Verify that the M&O Software Configuration Control Board (SCCB) performs the following in accordance with SCMP-4: (paras 4.1.10.1 b, 5.4.1, 5.5 & 5.6) 1. Approve the establishment and modification of baseline CSCIs 2. Approve creation/modification of baseline CSCIs for use throughout the M&O		

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

SHEET 12 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
12	Verify that the local Software Configuration Control Board (SCCB) performs the following in accordance with SCMP-4: (paras 4.1.10.1 b, 5.4.1, 5.5 & 5.6) 1. Approve the creation/modification of baseline CSCIs for use only within the respective site 2. Submission of baseline CSCIs and their modifications to the M&O SCCB for M&O - wide approval		

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

SHEET 13 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
13	Verify that Version Description Document (VDD) preparation is in accordance with SCMP-10. (para 5.4.1)		

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

SHEET 14 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
14	Verify that Software Change Orders (SCO) have been prepared and processed in accordance with SCMP-7. (paras 4.1.10.1 h, 4.1.10.2 f, 5.5, 5.5.2.1 & 5.6.3)		



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

SHEET 15 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
15	Verify that Software Problem Reports (SPR) have been prepared and processed in accordance with SCMP-5. (paras 4.1.10.1 h, 4.1.10.2 f, 5.3, 5.4, 5.5 & 5.5.2.2)		

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

SHEET 16 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
16	Verify that Software Modification Records (SMR) have been processed in accordance with SCMP-9. (paras 4.1.10.1 h, 4.1.10.1 m, 4.1.10.2 f, 5.5.2.3 & 5.6.3)		

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

SHEET 17 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
17	Verify that Design/Document Problem Reports (DPR) and Document Modification Records (DMR) have been prepared and processed in accordance with SCMP-2. (paras 5.5, 5.5.2.4 & 5.5.2.7)		

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

SHEET 18 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
18	Verify that Document Change Notices (DCN) and Revision/Change Records (RCR) have been prepared and processed in accordance with SCMP-12. (paras 5.5.2.5 & 5.5.2.6)		

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

SHEET 19 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
19	Verify that Software Request for Change (SRFC) have been prepared and processed in accordance with SCMP-13. (paras 4.1.10.1 h, 4.1.10.2 f, 5.3, 5.4, 5.5 & 5.5.2.8)		

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

SHEET 20 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
20	Verify their are a CSCI Master List (maintained by the M&O SCM Manager) and CSCI Lists (maintained by the local SCM Managers ) and also, that these lists identify the SCM controlled software and software documentation by nomenclature, version number, location, current status and responsible organization. (paras 5.5.3 & 5.6.5)		

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

SHEET 21 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
21	Verify the Software Media Identification and Control is in accordance with SCMP-8. (para 5.5.3)		

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

SHEET 22 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
22	Verify that DPRs, SPRs and SRFCs are: 1. assigned a number 2. logged into the status accounting system 3. forwarded to the responsible Development Team Leader for initial screening and technical evaluation 4. forwarded to the SCCB for acceptance or rejection and identification as either Class I or Class II.		



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

SHEET 23 OF 23  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
23	Verify the SCMs have, and are maintaining current, a status accounting system for tracking open DPRs, SPRs and SRFCs and ensure that each local SCM and the M&O SCM exchange this information. (para 5.5.5 & 5.6.5)		

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

PAGE 1 OF 1  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST**

ORGANIZATION EVALUATED  <b>M&amp;O (Vienna, VA)</b>	<input checked="" type="checkbox"/> EXTERNAL  <input type="checkbox"/> INTERNAL	<input checked="" type="checkbox"/> AUDIT  <input type="checkbox"/> SURVEILLANCE	PREPARED BY <u>LEONARD GORDON</u> DATE <u>January 28, 1993</u>	
DATES OF EVALUATION  <b>February 1 to 5, 1993</b>				
CONTROLLING DOCUMENT (Title, Number, Revision) <b>Audit Report 92-MRA-04</b>			ACTIVITY EVALUATED <b>RFP J852-RDT-91-283</b>	
ITEM NO.	CHARACTERISTICS TO BE EVALUATED	REMARKS <small>Record objective evidence reviewed, method of verification, personnel contacted</small>	* RESULTS	
1.	Verify that M&O reviewed RFP J852-RDT-91-283 to determine if provisions identified on RFP are in compliance with M&O QAP's 3-8, 4-1 and 7-1, which was issued prior to completion of the RFP.	<i>What is RFP J852-RDT-91-283</i>		

\* INDICATE RESULTS: SATISFACTORY (SAT), UNSATISFACTORY (UNSAT), NOT APPLICABLE (N/A)

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

PAGE 1 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST**

ORGANIZATION EVALUATED  <b>M&amp;O (Vienna, VA)</b>	<input checked="" type="checkbox"/> EXTERNAL  <input type="checkbox"/> INTERNAL	<input checked="" type="checkbox"/> AUDIT  <input type="checkbox"/> SURVEILLANCE	PREPARED BY <u>Robert L. Howard</u> DATE <u>January 28, 1993</u>	
DATES OF EVALUATION  <b>February 1 to 5, 1993</b>				
CONTROLLING DOCUMENT (Title, Number, Revision) <b>Technical Document Review, QAP-3-1, Revision 2</b>			ACTIVITY EVALUATED <b>Technical Document Review</b>	
ITEM NO.	CHARACTERISTICS TO BE EVALUATED		REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
1.	Verify the Department manager and the lead document preparer chose the review team. Verify the documentation of competence, references, academic degrees, professional certifications and affiliations, and that it summarizes recent experience in accordance with QAP-2-2, Verification of Personnel Qualifications. [5.1.2]		<i>What Department Manager? What document (s)?</i>	

\* INDICATE RESULTS: SATISFACTORY (SAT), UNSATISFACTORY (UNSAT), NOT APPLICABLE (N/A)

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

SHEET 2 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
2.	Verify the review team includes the QA Manager and reviewers knowledgeable in the technical areas addressed in the in the document. Verify reviewers did not review any portion of the document they directly participated in developing or were responsible for preparing. [5.1.3]		
3.	Verify that a unique document identifier is assigned to the technical document in accordance with QAP-3-13, Document Identifiers, before the document is issued for review. Verify that the identifier appears on the upper right hand corner of the document. [5.1.4]		

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

SHEET 3 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
4.	<p><b>INITIATING THE REVIEW</b></p> <p>Verify the Department Manager, in coordination with the lead document preparer, initiates the technical review by:</p> <ul style="list-style-type: none"> <li>A. Designating the review team</li> <li>B. Establishing the review schedule</li> <li>C. Establishing or referencing evaluation/acceptance criteria as documented in program requirements documents, industry codes, standards, NUREGs, Federal Regulations, and interfacing technical documents</li> <li>D. Initiating the Document Review Record (Attachment I) and completing the top portion</li> <li>E. Providing to the review team the document with a Document Review Record, the above information, and any other pertinent information [5.2.1]</li> </ul>		

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

SHEET 4 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
	<p><b>TECHNICAL DOCUMENT REVIEW</b></p> <p>5. Verify Reviewers review the technical document in accordance with the guidance provided by the requesting Department Manager. [5.3.1]</p> <p>6. Verify comments are recorded on the Document Review Record (Attachment I). Verify Mandatory comments are indicated by an asterisk (*) [5.3.2]</p>		

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

SHEET 5 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
7.	Verify that if a reviewer does not have comments, it is noted on the DRR and returned to the document preparer. [5.3.3]		
8.	<p><b>TECHNICAL DOCUMENT VERIFICATION FOR VERIFICATIONS REQUIRED BY M&amp;O QAP-3-5</b></p> <p>Verify the technical document is verified by individuals other than the preparer. Verify that individuals verifying the technical document did not:</p> <ul style="list-style-type: none"> <li>A. Have immediate supervisory responsibility for the individual preparing the document.</li> <li>B. Specify a single design approach.</li> <li>C. Rule out certain design considerations</li> <li>D. Establish the design inputs for any particular design aspects being verified. [5.4.1]</li> </ul>		

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

SHEET 6 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
9.	<p>For non-design technical documents, verify the reviewers reviewed for the following:</p> <ul style="list-style-type: none"> <li>A. Correct selection, verification, and approval of inputs</li> <li>B. Assumptions necessary to perform the activity are adequately described and reasonable</li> <li>C. Correct incorporation of inputs</li> <li>D. The necessary input and verification requirements for interfacing organizations are specified in the documents or in supporting procedures or instructions. [5.4.2]</li> </ul>	<p><i>What are "non-design technical documents"? What non-design technical documents are being audited?</i></p>	



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

SHEET 7 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
10.	<p><i>Switch from non-design to design doc.</i></p> <p>For design documents verify a review was performed to address:</p> <ul style="list-style-type: none"> <li>A. Correct selection, verification, and approval of design inputs.</li> <li>B. Assumptions necessary to perform the activity are adequately described and reasonable.</li> <li>C. That an appropriate design method was used</li> <li>D. That design inputs were correctly incorporated into the design</li> <li>E. Whether the design output is reasonable to the design input</li> <li>F. That the necessary design input and verification requirements for interfacing organizations are specified in the design documents or in supporting procedures or instructions. [5.4.3]</li> </ul>	<p><i>Which design documents?</i></p> <p><i>Quality affecting?</i></p>	

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

SHEET 8 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
	<p><b>COMMENT RESOLUTION</b></p> <p>11. Verify all reviewers return DRRs to the lead document preparer. [5.5.1]</p> <p>12. Verify that mandatory comments are resolved. [5.5.5]</p>		

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

SHEET 9 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
13	<p>Verify the technical document was revised to incorporate accepted comments.</p> <p><b>Procedure Adequacy Questions:</b></p> <p>What is the criteria for determining what comments are considered mandatory? Should that criteria be specified in the procedure? [5.3.3]</p> <p>Step 5.4.1 requires Individuals verifying the technical document shall not:</p> <ul style="list-style-type: none"> <li>A. Have immediate supervisory responsibility for the individual preparing the document.</li> <li>B. Specify a single design approach.</li> <li>C. Rule out certain design considerations</li> <li>D. Establish the design inputs for any particular design aspects being verified.</li> </ul> <p>This is somewhat inconsistent with OCRWM QARD Section 3 and NQA-1, Section 3.</p> <p>Why does the procedure not explicitly require the reviewer to initial acceptance of response on the DRR?</p>	<p style="text-align: center;">So?</p>	

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

SHEET 10 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
14.	Record the names of personnel performing work in accordance with QAP-3-1. Submit the list to Team C for verification of training and qualification.		

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

PAGE 1 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST**

ORGANIZATION EVALUATED  <b>M&amp;O (Vienna, VA)</b>	<input checked="" type="checkbox"/> EXTERNAL  <input type="checkbox"/> INTERNAL	<input checked="" type="checkbox"/> AUDIT  <input type="checkbox"/> SURVEILLANCE	PREPARED BY <u>Robert L. Howard</u> DATE <u>January 28, 1993</u>	
DATES OF EVALUATION  <b>February 1 to 5, 1993</b>				
CONTROLLING DOCUMENT (Title, Number, Revision) <b>System Conformance Reviews, QAP-3-2, Revision 2</b>			ACTIVITY EVALUATED <b>System Conformance Reviews</b>	
ITEM NO.	CHARACTERISTICS TO BE EVALUATED	REMARKS <small>Record objective evidence reviewed, method of verification, personnel contacted</small>	*	RESULTS
1.	Determine what system designs were formally reviewed by the M&O Contractor.	<i>What systems have been designed? Quality-Affecting?</i>		

\* INDICATE RESULTS: SATISFACTORY (SAT), UNSATISFACTORY (UNSAT), NOT APPLICABLE (N/A)

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

SHEET 2 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
2.	Verify the Assistant General Manager, Systems, assigns a System Conformance Review leader, determines the type and rigor of the review required, and documents this information on a System Conformance Review Notice, Attachment 1, and transmits this information to the cognizant office manager. [5.3.2]		

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

SHEET 3 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
3.	<p>Verify that the System Conformance Review Leader develops a review plan and that the plan documents the following:</p> <ul style="list-style-type: none"> <li>A. The exact scope of the review, including the specific system, structure, component, or item subject to the review.</li> <li>B. Identifies all design output documents subject to the review.</li> <li>C. A determination of all disciplines that might affect or be affected by the system, structure, or component, or item subject to the review. Consideration should be given to operations, maintenance, construction, radiological safety, environmental compliance, and materials engineering disciplines.</li> <li>D. Considering the complexity and state of the art of the design, establish System Conformance Review Team qualification requirements.</li> <li>E. Consideration of design requirements documents, safety analysis documents, calculations, computer code and hardware documentation, background information supporting advanced or state of the art engineering techniques, codes, standards, and interface control documents from the information provided by the design organization [5.4.3]</li> </ul>		

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

SHEET 4 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
4.	Verify the Assistant General Manager, Systems, approves the plan. [5.4.4]		
5.	Verify that reviewers' independence from the design organization is documented on Attachment III, Reviewer Qualification statement. [5.4.6]		



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

SHEET 5 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
6.	Verify demonstrated competence of the reviewers in their assigned aspects of the review is documented. This documentation should reference academic degrees, professional certifications and affiliations, and summarize relevant experience. [5.4.6.1] Submit list of personnel to Team C.		
7.	Verify the cognizant office manager approves review team members prior to executing the review. [5.4.7]	Who is the "cognizant office manager"?	

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

SHEET 6 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
8.	<p><b>PREPARATION</b></p> <p>Verify the review leader ensures the team is prepared for the review. Preparation should include the following:</p> <ul style="list-style-type: none"> <li>A. Team members are aware of the scope, schedule, and plan for the review and the technical requirements of the particular design. Copies of applicable requirements documents must be provided to team members.</li> <li>B. Team members must be familiar with QAP-3-2. <b>Note: this should be verified by the auditor covering criterion 2.</b></li> <li>C. Team members should be familiar with the structure, system, component, or item designs.</li> <li>D. Assignment of team members to design areas and preparation of checklists or instructions to be used for the review, as appropriate.</li> <li>E. Checklists developed by review team members.</li> </ul>		

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

SHEET 7 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
9.	Verify the System Conformance Review Leader reviews and approves checklists or instructions developed by review team members. [5.5.2]		

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

SHEET 8 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
10.	<p><b>EXECUTION</b></p> <p>Verify that the review team conducts the review in their assigned areas according to the review plan and the checklist or instructions that have been developed. [5.6.2]</p>		
11.	<p>Verify that the review team documents the review comments in comment resolutions in accordance with M&amp;O QAP-3-1, Technical Document Review. [5.6.4]</p>		

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

SHEET 9 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
12.	<p><b>REPORTING</b></p> <p>Verify the review leader prepares a report of the review results. Verify the report includes the following:</p> <ul style="list-style-type: none"> <li>A. Scope of the review, including specific systems, structures, components, and items.</li> <li>B. Identity of the review team members and design organization personnel contacted during the review.</li> <li>C. Summary of the results of the review.</li> <li>D. Any significant problems encountered or deficiencies identified and the resolutions, including corrective actions initiated.</li> <li>E. Open issues and actions to be taken.</li> <li>F. Recommendations. [5.7.1]</li> </ul>		

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

SHEET 10 OF 10  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
13.	Verify the review leader signs the report and forwards it to the Assistant General Manager, Systems. [5.7.3]		
14.	Verify a package consisting of the review plan, checklists, or procedures, comments, and resolution records, reviewer qualification records, and reports have been submitted to M&O records management system. [5.7.4] (Coordinate with Team D.)		

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

PAGE 1 OF 17  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST**

ORGANIZATION EVALUATED  <b>M&amp;O (Vienna, VA)</b>	<input checked="" type="checkbox"/> EXTERNAL  <input type="checkbox"/> INTERNAL	<input checked="" type="checkbox"/> AUDIT  <input type="checkbox"/> SURVEILLANCE	PREPARED BY <u>Robert L. Howard</u> DATE <u>January 28, 1993</u>	
DATES OF EVALUATION  <b>February 1 to 5, 1993</b>				
CONTROLLING DOCUMENT (Title, Number, Revision) <b>Development of Technical Documents, QAP-3-5, Revision 2.</b>			ACTIVITY EVALUATED <b>Technical Document Preparation</b>	
ITEM NO.	CHARACTERISTICS TO BE EVALUATED	REMARKS <small>Record objective evidence reviewed, method of verification, personnel contacted</small>	* RESULTS	
1.	Sample Technical Document Preparation Plans to verify they contain the following: <b>Note: deviations from the prescribed format must be documented via memorandum from the cognizant Office Manager to the Department Manager.</b>	<i>Are there any Tech Doc Prep Plans? If so, what do they cover?</i>		

\* INDICATE RESULTS: SATISFACTORY (SAT), UNSATISFACTORY (UNSAT), NOT APPLICABLE (N/A)

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

SHEET 2 OF 17  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS <i>Record objective evidence reviewed, method of verification, personnel contacted</i>	RESULTS
	<p>A. Objective and scope of the technical document;</p> <p>B. Description of the technical document to be developed using the outline in attachment I and including provisions, as applicable, for:</p> <ol style="list-style-type: none"> <li>1. Translating requirements and information from the appropriate CRWMS requirements document into the engineering and design development.</li> <li>2. Applying quality assurance measures in accordance with the M&amp;O QAPD</li> <li>3. Identifying, documenting, and controlling the inputs to be used in the technical document.</li> <li>4. Identifying, documenting, and controlling interfaces in accordance with QAP-3-6, Interface Control, and QAP-3-13, document Identifier.</li> <li>5. Controlling the use of computer programs in accordance with appropriate software control QAPs.</li> <li>6. Determining requirements for verification review and approval.</li> <li>7. Determining the means for ensuring that the contents of the document are kept current.</li> </ol>		



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

SHEET 3 OF 17  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
	C. Schedule of preparation, review, and issuance of the technical document. [5.1.2]		

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

SHEET 4 OF 17  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
2.	<p>When required, verify the outline identified in Attachment I of QAP-3-5 is used to develop the TDPP and the TDPP is reviewed and approved by the cognizant Department Manager upon its completion. [5.1.3]</p> <p><b>Note: 5.1.3 is a poorly written step in the procedure and may need some clarification.</b></p>		
3.	<p>Verify the completed technical document preparation plan is reviewed and approved by the cognizant Office Manager prior to the preparation of the technical document.</p>		

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

SHEET 5 OF 17  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
4.	<b>TECHNICAL DOCUMENT PREPARATION</b>		
	<p>Verify technical documents are prepared in accordance with TDPPs when required. [5.2.1]</p>		
5.	<p>Verify Technical documents contain the following:</p> <ul style="list-style-type: none"> <li>A. A title page indicating the complete title of the technical document, the appropriate document identifier, applicable QA classification of the technical document, verification method used, signatures and dates for preparation, verification, and approval of the technical document</li> <li>B. The objective and scope of the technical document</li> <li>C. All pertinent requirements from higher level documents, regulatory requirements, and other requirements that are applicable to the subject matter of the technical document</li> <li>D. Identification of all applicable inputs, interfaces, and assumptions</li> <li>E. A list of references used in developing the technical document</li> <li>F. A presentation of all information applicable to the subject matter of the technical document. [5.2.1]</li> </ul>		

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

SHEET 6 OF 17  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted . :	RESULTS
6.	Verify that the preparer signed and dated the title page of the technical document. [5.2.2]		
	<b>TECHNICAL DOCUMENT VERIFICATION</b>		
7.	Verify that the technical document is verified by individuals other than preparer or approver. [5.3.1]		

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

SHEET 7 OF 17  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
8.	<p>Verify that the individuals verifying the technical document do not have the following:</p> <ul style="list-style-type: none"> <li>A. Immediate supervisory responsibility for the individual preparing the document.</li> <li>B. Specified a single design approach.</li> <li>C. Ruled out certain design considerations</li> <li>D. Established the design inputs for any particular design aspect being verified. [5.3.1]</li> </ul>		
9.	<p>Verify the Department Manager specifies one of the following types of review:</p> <ul style="list-style-type: none"> <li>a. a technical review under QAP-3-1</li> <li>b. the verification process described in QAP-3-5 [5.3.2]</li> </ul>		

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

SHEET 8 OF 17  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
10.	<p>For technical documents verified under QAP-3-5 verify one of the following methods was used:</p> <p>Method 1 Verify that a detailed review was performed to provide assurance that the final document is correct and satisfactory. Where applicable, the following shall be addressed:</p> <ol style="list-style-type: none"> <li>1. Correct selection, verification, and approval of inputs.</li> <li>2. Assumptions necessary to perform the activity are adequately described and reasonable.</li> <li>3. Was an appropriate design method used?</li> <li>4. Where design inputs correctly incorporated into the design?</li> <li>5. Is the design output reasonable to the design input?</li> <li>6. The necessary design input and verification requirements for interfacing organizations are specified in the design documents or in supporting procedures or instructions.</li> </ol>		

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

SHEET 9 OF 17  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS <i>Record objective evidence reviewed, method of verification, personnel contacted</i>	RESULTS
11.	<p>Verification Method 2</p> <p>Has the development of the document been repeated independently employing alternate methods as appropriate? Was the appropriateness of assumptions, input data used, and the computer program or other calculation method also reviewed.</p>		
12.	<p>Verification Method 3</p> <p>Qualification testing data under the most adverse conditions by either a prototype or production unit, Where adequacy is to be verified by testing, the test shall be identified and the test clearly defined and documented.</p>		

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

SHEET 10 OF 17  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
13.	Verify that the technical document verifier submits and coordinates corrections with the technical document preparer. [5.3.4]		
14.	Verify that the Technical Document Preparer makes necessary corrections and returns them to the verifier. [5.3.5]		



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

SHEET 11 OF 17  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
15.	Verify that the Verifier has signed and dated the technical document after all interdisciplinary and external reviews are complete. [5.3.6]		
16.	<b>INTERDISCIPLINE REVIEWS</b>  If required, verify that the Department Manager ensures interdiscipline reviews are complete prior to technical document approval. [5.4.1]		

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

SHEET 12 OF 17  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
17.	Verify that interdiscipline reviewers perform reviews for impact to their areas of work and coordinate any required changes for the technical document with the technical document preparer. [5.4.2]		
18.	Verify interdiscipline reviewers sign and date the technical document. [5.4.2]		

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

SHEET 13 OF 17  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
19.	<b>EXTERNAL REVIEWS</b>  Verify external reviews of technical documents, if required, are conducted in accordance with QAP-3-1, Technical Document Review [5.5]		
20.	<b>TECHNICAL DOCUMENT APPROVAL</b>  Verify the Department Manager reviews the technical document for the following: <ul style="list-style-type: none"> <li>a. Conformance to applicable requirements</li> <li>b. Assurance that competent personnel have prepared and verified the technical document</li> <li>c. Ensured applicable QA procedures have been followed in developing the document.</li> <li>d. Ensures input sources, including data received as a result of QAP-3-12, External Transmission of Design Input Data, are properly reviewed, documented, evaluated, and used as appropriate. [5.6.1]</li> </ul>		

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

SHEET 14 OF 17  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
21.	Verify that the Department Manager signs and dates the title page indicating approval. [5.6.2]		
22.	Verify the cognizant Office Manager reviews the document and provides guidance for further action. If necessary, the Office Manager specifies further reviews in accordance with QAP-3-1 [5.6.3]		

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

SHEET 15 OF 17  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
23.	Verify that the cognizant Office Manager forwards the document in accordance with QAP-3-4 or QAP-17-1. [5.6.5]		
24.	<p><b>DOCUMENT REVISION</b></p> <p>Verify revisions to approved technical documents, including TDPPs where required, shall be prepared, verified, reviewed, and approved in the same manner as the original. [5.7.1]</p>		

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

SHEET 16 OF 17  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
25.	<p>Verify revisions to technical documents using or communication interface information are revised in accordance with QAP-3-7, Interface Control, QAP-3-4, Baseline Control, and QAP-3-5. [5.7.2]</p> <p>Procedure Adequacy: Why are there three different points in the procedure for initiating a QAP-3-1 review?</p> <p>Why is <i>Data of Indeterminate Quality</i> defined in this procedure?</p> <p>Step 5.1.2 says that the TDPP must include a "Description of the technical document to be developed using Attachment I and include provisions for....Identifying, documenting, and controlling interfaces in accordance with QAP-3-7, Interface Control, and QAP-3-13, Document Identifiers." How does QAP-3-13 control interfaces?</p>		

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

SHEET 17 OF 17  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
26.	Record the names of personnel performing work in accordance with QAP-3-5. Submit the list to Team C for training and qualification verification.		

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

PAGE 1 OF 4  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST**

ORGANIZATION EVALUATED  M&O (Vienna, VA)	<input checked="" type="checkbox"/> EXTERNAL  <input type="checkbox"/> INTERNAL	<input checked="" type="checkbox"/> AUDIT  <input type="checkbox"/> SURVEILLANCE	PREPARED BY <u>Robert L. Howard</u> DATE <u>January 27, 1993</u>  <div style="text-align: right;"><i>RLH</i></div>	
DATES OF EVALUATION  February 1 to 5, 1993				
CONTROLLING DOCUMENT (Title, Number, Revision) <i>Configuration Item Identifiers, QAP-3-6, Revision 1</i>			ACTIVITY EVALUATED Configuration Item Identifiers	
ITEM NO.	CHARACTERISTICS TO BE EVALUATED		REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
1.	Verify that Configuration Identifiers consist of 9 alpha/numeric characters consistent with the system described in QAP-3-6. [5.1.2]			

\*INDICATE RESULTS: SATISFACTORY (SAT), UNSATISFACTORY (UNSAT), NOT APPLICABLE (N/A)



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

SHEET 2 OF 4  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
2.	Verify that the M&O CM organization assigns Configuration Identifiers at the System, System Element, and Segment levels. [5.2]		
3.	Verify that the M&O submits the recommended CI Identifiers List to the OCRWM CM Branch Chief for approval. Verify the list is made available to CRWMS participants after approval. [5.2.1]		

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

SHEET 3 OF 4  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
4.	Verify the software CM/design organizations complete the Request/Approval for CI Identifier (Attachment I) and submit the original to the M&O CM Organization manager for review and approval. [5.3.1]		
5.	Verify the M&O CM organization verifies the CI identifiers and nomenclature assigned to avoid duplication errors. [5.3.2]		

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

SHEET 4 OF 4  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
6.	<p>Verify the software CM/design organizations impose the requirements of QAP-3-6 on other program participants responsible to the M&amp;O for developing items and activities requiring configuration control. [5.3.3]</p> <p><b>Procedure Adequacy:</b></p> <p>How does the M&amp;O impose the requirements of QAP-3-6 on program participants without imposing the rest of their procedure system on the participant?</p>		

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

PAGE 1 OF 8  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST**

ORGANIZATION EVALUATED  <b>M&amp;O (Vienna, VA)</b>	<input checked="" type="checkbox"/> EXTERNAL  <input type="checkbox"/> INTERNAL	<input checked="" type="checkbox"/> AUDIT  <input type="checkbox"/> SURVEILLANCE	PREPARED BY <u>Robert L. Howard</u> DATE: <u>January 28, 1993</u>	
DATES OF EVALUATION  <b>February 1 to 5, 1993</b>				
CONTROLLING DOCUMENT (Title, Number, Revision) <b>Interface Control, QAP-3-7, Revision 1</b>			ACTIVITY EVALUATED <b>Interface Control</b>	
ITEM NO.	CHARACTERISTICS TO BE EVALUATED		REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
1.	<b>INITIAL IDENTIFICATION OF INTERFACES</b>  Verify that an Interface Control Working Group has been established and has identified, defined, and documented the characteristics of CRWMS interfaces. [5.1.1]			

\* INDICATE RESULTS: SATISFACTORY (SAT), UNSATISFACTORY (UNSAT), NOT APPLICABLE (N/A)

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

SHEET 2 OF 8  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
2.	Verify that the Interface Control Working Group has prepared Interface Control Documents to define the physical, functional, and administrative design requirements for Quality Affecting interfaces. [5.1.2]		
3.	Verify that Interface Control Documents are prepared in accordance with M&O QAP-3-5. [5.1.2]		

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

SHEET 3 OF 8  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
4.	Verify that Interface Control Documents are reviewed in accordance with QAP-3-1. [5.1.2]		

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

SHEET 4 OF 8  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
5.	<p><b>INTERFACE CHANGE PROCESS</b></p> <p>Verify that personnel identifying interface control problems complete an Interface Problem Sheet, (Attachment I of QAP-3-7), and forwarded it to the Interface Control Working Group Secretary. [5.2.1]</p>		
6.	<p>Verify the Interface Control Working Group reviews the Interface Problem Sheet and notifies the initiator of the Interface Problem Sheet of the results of the review. [5.2.2]</p>		

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

SHEET 5 OF 8  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
7.	If a formal change to an Interface Control Document is required, verify the change is initiated using an Interface Revision Notice (Attachment II of M&O QAP-3-7). [5.2.3]		
8.	Verify the ICWG Secretariat initiates the necessary BCP in accordance with M&O QAP-3-4. [5.2.3]		



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

SHEET 6 OF 8  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
9.	Verify the ICWG Secretariat coordinates and numbers all IPSs and IRNs in accordance with the system described in M&O QAP-3-7. [5.2.4]		

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

SHEET 7 OF 8  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
10.	<p><b>RECORDS</b></p> <p>Verify the following records are maintained as records in accordance with M&amp;O QAP-17-1:</p> <ul style="list-style-type: none"><li>A. Interface Control Documents;</li><li>B. Interface Problem Sheets;</li><li>C. Interface Revision Notices. [6.0]</li></ul>		

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

SHEET 8 OF 8  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
	<p><b>Procedure adequacy:</b></p> <p>1. Why are responsibilities for individuals outside of the M&amp;O defined in this procedure?</p> <p>(The Director, System Engineering and Program Integration Division, RW-32 is named the co-chair of the Program ICWG.) [4.1.1]</p> <p>(Any individuals participating in the Civilian Radioactive Waste Program ... [5.2.1]</p> <p>2. The scope of this procedure states that QAP-3-7 is mandatory for the development of Program/System Interfaces and may be adopted for Project/Subsystem interfaces at the discretion of the cognizant office manager. [2.0]</p> <p>The M&amp;O QAPD Section 3.7 states that Internal and External interfaces are identified by an interface control document and controlled in accordance with the M&amp;O Configuration Management Plan and approved procedures. Why is the identification and control of project/subsystem interfaces non-mandatory?</p>		

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

PAGE 1 OF 9

AUDIT/SURVEILLANCE

NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST**

ORGANIZATION EVALUATED  <b>M&amp;O (Vienna, VA)</b>	<input checked="" type="checkbox"/> EXTERNAL  <input type="checkbox"/> INTERNAL	<input checked="" type="checkbox"/> AUDIT  <input type="checkbox"/> SURVEILLANCE	PREPARED BY <u>Robert Howard</u> DATE <u>January 27, 1993</u>  <div style="text-align: right; font-family: cursive;">RJB</div>	
DATES OF EVALUATION  <b>February 1 to 5, 1993</b>				
CONTROLLING DOCUMENT (Title, Number, Revision) <b>Procurement Specifications, QAP-3-8, Revision 1</b>			ACTIVITY EVALUATED <b>Procurement Specification</b>	
ITEM NO.	CHARACTERISTICS TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	*	RESULTS
1.	Verify that the cognizant Department Managers have reviewed design input data for impact, determined if changes are required, and ensured the necessary changes are reflected in all applicable documents. This includes changes and externally transmitted Technical Input Data received in accordance with QAP-3-12. [5.1.1]			

\* INDICATE RESULTS: SATISFACTORY [SAT], UNSATISFACTORY [UNSAT], NOT APPLICABLE [N/A]

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

SHEET 2 OF 9  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
2.	Verify that the Technical Document Preparer has prepared the procurement specifications in accordance with the Procurement Specification Format (Attachments I) and Main Text Outline (Attachment II), as specified in QAP-3-8, or as directed by DOE/OCRWM. [5.1.2]		
3.	Verify that applicable design inputs, such as regulatory requirements, codes, standards, design bases, and quality assurance requirements are clearly stated or referenced in the procurement specification. [5.1.2]		

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

SHEET 3 OF 9  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
4.	Verify that unique document numbers (in accordance with QAP-3-13) and a date of initial issue have been placed on each page of the Procurement Specification. [5.1.4, 5.1.5]		
5.	Verify that Technical Document Preparer has completed appropriate sections of Attachment III to QAP 3-8, <i>Certification of Procurement Specification</i> , [CPS] and all Reviewers have signed and dated the CSP. [5.3.2]		

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

SHEET 4 OF 9  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
6.	<b>PROCUREMENT SPECIFICATION VERIFICATION</b>  Verify that the procurement specification has been verified by a qualified individual independent from the preparer or approver. [5.2.4]		
7.	If an interdisciplinary review is required, verify that the review is performed and that the reviewers signed and dated the Certification of Procurement Specification. [5.3]		

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

SHEET 5 OF 9  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	RESULTS
8.	Verify that External Reviews of the Procurement Specifications have been accomplished, if required, by the cognizant Department Manager in accordance with QAP 3-1. [5.4]		
9.	Verify that the procurement specification verifier has signed and dated the Certification of Procurement Specification after all interdiscipline and external reviews are complete. [5.2.4]		



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

SHEET 6 OF 9  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
10.	Verify that cognizant Department Manager has reviewed Procurement Specifications for conformance to requirements, ensured that competent personnel have prepared, reviewed and verified that applicable QA procedures have been followed, and coordination with all interfacing organizations have been ensured. [5.5.1]		
11.	Verify that the QA Manager has indicated approval of the Procurement Specifications by signing and dating the Certification of Procurement Specification Form (Attachment 111) and forwarded it to QA. [5.5.2]		

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

SHEET 7 OF 9  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
12.	Verify that the QA Manager has reviewed Procurement Specifications for all required quality related information had been included, that it meets the M&O QA program, and indicated approval by signing and dating the Certificate of Procurement Specification Form. [5.5.3]		
13.	Verify that the Procurement Specification has been submitted to the cognizant Office Manager for Disposition and Acceptance into the technical baseline in accordance with QAP 3-4, <i>Baseline Control</i> . [5.5.4]		

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

SHEET 8 OF 9  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
14.	<b>REVISIONS TO PROCUREMENT SPECIFICATIONS</b>  Verify that any revisions to the Procurement Specifications follow procedure described in QAP 3-8, Section 5.6, <i>Revision of Procurement Specification</i> , and annotated on the Revision Description Form, Attachment IV of QAP 3-8. [5.6]		

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

SHEET 9 OF 9  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
15.	<b>RECORDS</b>  Verify that Procurement Specifications are maintained as QA records in accordance with M&O QAP-17-1, <i>Program Records Management</i> . [6.1]		

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

PAGE 1 OF 16  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST**

ORGANIZATION EVALUATED  M&O (Vienna, VA)	<input checked="" type="checkbox"/> EXTERNAL  <input type="checkbox"/> INTERNAL	<input checked="" type="checkbox"/> AUDIT  <input type="checkbox"/> SURVEILLANCE	PREPARED BY <u>Robert L. Howard</u> DATE <u>January 27, 1993</u> <div style="text-align: right; font-size: 1.5em; font-family: cursive;">RSH</div>		
DATES OF EVALUATION  February 1 to 5, 1993					
CONTROLLING DOCUMENT (Title, Number, Revision) <i>Engineering Calculations and Analysis, QAP-3-9, Revision 1</i>			ACTIVITY EVALUATED Engineering Calculations and Analysis		
ITEM NO.	CHARACTERISTICS TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS		
1.	Verify the Responsible Engineer completes the Title and Certification Form (Attachment 1) and includes it as the first page of the calculations package [5.1.2]				

\* INDICATE RESULTS: SATISFACTORY (SAT), UNSATISFACTORY (UNSAT), NOT APPLICABLE (N/A)

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

SHEET 2 OF 16  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
2.	Verify design inputs, such as, applicable regulatory requirements, codes, standards, design bases, and quality assurance requirements, are clearly stated or included by reference in the engineering calculation and analyses. [5.1.2]		

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

SHEET 3 OF 16  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS <i>Record objective evidence reviewed, method of verification, personnel contacted</i>	* RESULTS
3.	<p>Verify documentation for the calculation or analysis includes the following as applicable:</p> <ul style="list-style-type: none"> <li>A. Purpose and objective of the analyses.</li> <li>B. Statement of the relation of the item to the applicable quality affecting item.</li> <li>C. Statement of the design methods used or analytical model employed, and the results of literature searches or other applicable background information.</li> <li>D. A list of applicable codes and standards by name, number, and date, including applicable revision date or addenda.</li> <li>E. Identification of Design inputs and their sources, including other design criteria, and other calculations.</li> <li>F. Identification of criteria cited in regulatory commitments bearing on the calculation, including section and revision date.</li> <li>G. Assumptions used to originate or revise the calculation.</li> <li>H. Identification of sources of information, data, equations, computer programs, computer type, and revision identification employed in the calculation.</li> </ul>		

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

SHEET 4 OF 16  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
	I. Complete presentation of the calculation such that anyone appropriately qualified could review the calculation without recourse to the originator.		
	J. Statement of general conclusions, if appropriate. [5.1.3]		



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

SHEET 5 OF 16  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
4.	Verify assumptions to be verified as the design progresses are identified in a separate section of the calculation. [5.1.4]		
5.	Verify computer program inputs and outputs used in the calculation are identified. [5.1.5] <ul style="list-style-type: none"> <li>a. Verify that the computer program verification is referenced. [5.1.5]</li> <li>b. Verify that the bases that supports the application of the program to the specific problem is documented. [5.1.5]</li> </ul> Coordinate with Team A.		

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

SHEET 6 OF 16  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
6.	Verify that each calculation sheet has a unique document number assigned, as required by M&O QAP-3-13, Document Identifiers. The unique number should be placed on each page. [5.1.6]		
7.	Verify each calculation sheet is sequentially numbered and has the origination date and the initials of the responsible engineer. [5.1.7]		

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

SHEET 7 OF 16  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
8.	Verify supporting documentation, such as, computer printouts that are too lengthy to be part of the main body of the calculation, are included as an attachment. [5.1.8]		
9.	Verify each attachment (except microfiche) is given a sequential number and is bound in a volume. [5.1.8]		

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

SHEET 8 OF 16  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
10.	Verify the document preparer signs and dates the Title Page and Certification of Engineering Calculation (Attachment I). [5.1.9]		

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

SHEET 9 OF 16  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
11.	<p><b>ENGINEERING CALCULATION AND ANALYSIS VERIFICATION AND APPROVAL</b></p> <p>For Calculations and analysis verified by detailed review:</p> <p>Verify the following are addressed:</p> <ul style="list-style-type: none"> <li>a. Correct selection, verification, and approval of inputs?</li> <li>b. Assumptions necessary to perform the activity are adequately described and reasonable?</li> <li>c. Was an appropriate design method used?</li> <li>d. Were design inputs correctly incorporated into the design?</li> <li>e. Is the design output reasonable to the design input?</li> <li>f. The necessary design input and verification requirements for interfacing organizations are specified in the design documents or in supporting procedures or instructions. [5.2.1]</li> </ul>		

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

SHEET 10 OF 16  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
12.	If the calculation has not been verified by a detailed review, verify that it has been verified by a an independent calculation employing alternate methods, as appropriate, or by qualification testing. [5.2.1]		
13.	Verify that the verifier signs and dates the Title and Certification Page after verifying the calculation. Also, verify the verification method is indicated on the Title and Certification Page. [5.2.4]		

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

SHEET 11 OF 16  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
14.	Verify the Department Manager approves the calculation, at a minimum, by reviewing design inputs, concepts, design methods and conformance with applicable codes and standards and signs and dates the certification page. [5.2.5]		
15.	Verify that calculations and analyses are baselined in accordance with QAP-3-4. [5.2.7]		

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

SHEET 12 OF 16  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
16.	<p><b>REVISIONS OF CERTIFIED CALCULATIONS</b></p> <p>Verify that revisions to calculations and analysis are prepared, verified, and approved in the same manner as the original. [5.3.1]</p>		
17.	<p>Verify that the Responsible Engineer has evaluated the work performed in accordance with previous revisions of the calculation for impact by the new revision. [5.3.2]</p>		



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

SHEET 13 OF 16  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
18.	<p>Verify the following:</p> <ul style="list-style-type: none"> <li>A. The revision is given a sequential number starting at one and the revision number appears on each page of the revision.</li> <li>B. The Title Page and Certification of Engineering Calculation form are updated and signed and dated by the Responsible Engineer and verifier.</li> <li>C. Each page of the revision is numbered consistently with the numbers of the pages being revised.</li> <li>D. Revision, deletion, or addition of pages are indicated in the revision log by listing the pages and the associated volume.</li> <li>E. Revision, deletion, or addition of attachments are indicated in the revision log by listing the attachment number and the associated volume number.</li> <li>F. Deletion or addition of volumes are indicated in the revision log.</li> <li>G. A statement documenting the reason for any revisions and a written description of the change are noted on the Calculation Revision Documentation Sheet. [5.3.3]</li> </ul>		

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

SHEET 14 OF 16  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
19.	<b>CONTROL, CERTIFICATION, AND REVISION OF EXTERNALLY SUPPLIED CALCULATIONS</b>  Verify a Title Page and Certification of Engineering Calculation (Attachment 1) is completed and added as the first page of the externally supplied calculation. [5.4.1]		
20.	Verify revisions are prepared in accordance with checklist items 16 through 18. [5.4.2]		

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

SHEET 15 OF 16  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
21.	Verify that an explanatory note in the revision log indicates the highest revision number of the original externally supplied calculation. [5.4.3]		
22.	Verify the revision log "Prepared By" block is sign and dated. [5.4.4]		

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

SHEET 16 OF 16  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST (continuation sheet)**

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
23.	<p>Verify that the following are maintained in accordance with M&amp;O QAP-7-1:</p> <ol style="list-style-type: none"> <li>1. Completed calculation, including Attachments I and II, and supporting documentation;</li> <li>2. Justification for exempting restrictions of verifiers, if applicable.</li> </ol> <p><b>Procedure Adequacy Question:</b></p> <p>Why are the results of the calculator review not required to be maintained?</p> <p>Section 3.4.3 of the M&amp;O QAPD requires that technical reviews are required to be documented.</p>		

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

PAGE 1 OF 2  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

**QUALITY ASSURANCE CHECKLIST**

ORGANIZATION EVALUATED  <b>M&amp;O (Vienna, VA)</b>	<input checked="" type="checkbox"/> EXTERNAL  <input type="checkbox"/> INTERNAL	<input checked="" type="checkbox"/> AUDIT  <input type="checkbox"/> SURVEILLANCE	PREPARED BY <u>Robert L. Howard</u> DATE: <u>January 28, 1993</u>	
DATES OF EVALUATION  <b>February 1 to 5, 1993</b>				
CONTROLLING DOCUMENT (Title, Number, Revision) <b>Assignment of Document Identifiers, QAP-3-13, Revision 1</b>			ACTIVITY EVALUATED <b>Assignment of Document Identifiers</b>	
ITEM NO.	CHARACTERISTICS TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS	
1.	Verify that document identifiers are located in the upper right hand corner of the cover page of documents and on all subsequent pages. [5.3.1]			

\* INDICATE RESULTS: SATISFACTORY (SAT), UNSATISFACTORY (UNSAT), NOT APPLICABLE (N/A)

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

SHEET 2 OF 2  
AUDIT/SURVEILLANCE  
NO. HQ-93-03

QUALITY ASSURANCE CHECKLIST (continuation sheet)

ITEM NO.	CHARACTERISTIC TO BE EVALUATED	REMARKS Record objective evidence reviewed, method of verification, personnel contacted	* RESULTS
2.	Verify document identifiers are consistent with the system described in QAP-3-13.		
3.	Verify that documents that do not have a specific application below the system level are assigned the CRMWS identifier: A0000000. [5.3.4]		