

**OBSERVATION OF  
DOE OFFICE OF CIVILIAN RADIOACTIVE WASTE  
MANAGEMENT  
QUALITY ASSURANCE AUDIT HQ-95-01 OF THE  
CIVILIAN RADIOACTIVE WASTE MANAGEMENT SYSTEM AND  
OPERATING CONTRACTOR (M&O)  
CONTROL OF SUBCONTRACT WORK**

*Prepared for*

**Nuclear Regulatory Commission  
Contract NRC-02-93-005**

*Prepared by*

**Tom Trbovich**

**Center for Nuclear Waste Regulatory Analyses  
San Antonio, Texas**

**December 1994**

This report was prepared to document work performed by the Center for Nuclear Waste Regulatory Analyses (CNWRA) for the Nuclear Regulatory Commission (NRC) under contract No. NRC-02-93-005. The activities reported here were performed on behalf of the NRC Office of Nuclear Material Safety and Safeguards (NMSS), Division of Waste Management (DWM). The report is an independent product of the CNWRA and does not necessarily reflect the views or regulatory position of the NRC.

Mr. Ronald A. Milner, Acting Director  
Office of Program Management and Integration  
Office of Civilian Radioactive Waste Management  
U.S. Department of Energy  
1000 Independence Avenue, SW  
Washington, D.C. 20585

Dear Mr. Milner:

**SUBJECT: OBSERVATION AUDIT OF THE CIVILIAN RADIOACTIVE WASTE  
MANAGEMENT SYSTEM (CRWMS) MANAGEMENT AND OPERATING  
CONTRACTOR (M&O) CONTROL OF SUBCONTRACT WORK**

I am transmitting the Nuclear Regulatory Commission (NRC) Observation Audit Report 95-01 for the U.S. Department of Energy (DOE), Office of Civilian Radioactive Waste Management (OCRWM), Office of Quality Assurance (OQA) audit of the Civilian Radioactive Waste Management System and Operating Contractor (M&O). The audit, HQ-95-01, was conducted from October 10-14, 1994, at the M&O offices in Vienna, Virginia. The limited-scope, performance-based audit evaluated the effectiveness of the M&O activities performed under quality assurance (QA) Program Elements 4.0, "Procurement Document Control," and 7.0, "Control of Purchased Items and Services." No other organizations participated as observers of this audit.

The NRC staff observed the audit to evaluate the DOE audit process and to gain confidence that the M&O organization is properly implementing its procurement processes. The NRC staff based its evaluation on direct observations of the audit team members; discussions with the audit team and M&O personnel; and reviews of the audit plan, the audit checklists, and pertinent M&O documents.

The NRC staff has determined that Audit HQ-95-01 was useful and effective. The audit was well organized and conducted in a thorough and professional manner.

The NRC staff agrees with the preliminary audit team findings that the overall implementation of the M&O procurement controls are marginal. One preliminary Corrective Action Request (CAR) was discussed by the audit team at the post-audit meeting. Five other potential CARs were acceptably resolved by the CRWMS M&O organization during the audit. Nine recommendations were also made to improve various aspects of the subcontract control program. Though the preliminary CAR and items corrected during the audit were minor in nature, three of the CRWMS M&O control of subcontract work process steps were judged marginal and therefore require continued CRWMS M&O management attention.

The NRC staff expects to participate in closely monitoring the corrective actions of the M&O and may perform its own independent audits at a later date to assess the M&O implementation of its QA program.

If you have any questions, please call Jack Spraul of my staff at (301) 415-6715.

Sincerely,

Joseph J. Holonich, Chief  
High-Level Waste & Uranium Recovery  
Projects Branch  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

Enclosure: As stated

cc: R. Loux, State of Nevada  
T. J. Hickey, Nevada Legislative Committee  
J. Meder, Nevada Legislative Counsel Bureau  
R. Nelson, YMSCO  
M. Murphy, Nye County, NV  
M. Baughman, Lincoln County, NV  
D. Bechtel, Clark County, NV  
D. Weigel, GAO  
P. Niedzielski-Eichner, Nye County, NV  
B. Mettam, Inyo County, CA  
V. Poe, Mineral County, NV  
F. Mariani, White Pine County, NV  
R. Williams, Lander County, NV  
L. Fiorenzi, Eureka County, NV  
J. Hoffman, Esmeralda County, NV  
C. Schank, Churchill County, NV  
L. Bradshaw, Nye County, NV  
W. Barnard, NWTRB

A written response to this letter or the enclosed report is not required. If you have any questions, please call Jack Spraul of my staff on (301) 415-6715.

Sincerely,

Joseph J. Holonich, Chief  
High-Level Waste & Uranium Recovery  
Projects Branch  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

Enclosure: As stated

cc: R. Loux, State of Nevada  
T. J. Hickey, Nevada Legislative Committee  
J. Meder, Nevada Legislative Counsel Bureau  
R. Nelson, YMPO  
M. Murphy, Nye County, NV  
M. Baughman, Lincoln County, NV  
D. Bechtel, Clark County, NV  
D. Weigel, GAO  
P. Niedzielski-Eichner, Nye County, NV  
B. Mettam, Inyo County, CA  
V. Poe, Mineral County, NV  
F. Mariani, White Pine County, NV  
R. Williams, Lander County, NV  
L. Fiorenzi, Eureka County, NV  
J. Hoffman, Esmeralda County, NV  
C. Schank, Churchill County, NV  
L. Bradshaw, Nye County, NV  
W. Barnard, NWTRB  
R. Holden, NCAI  
E. Lowery, NIEC  
S. Broccum, YMPO

**DISTRIBUTION:** Central File PUBLIC ACNW LSS CNWRA  
DWM r/f HLUR r/f JSurmeier JAustin MBell  
MFederline PPBrooks On-Site Reps

*MFO -*  
S:\DWM\HLUR\JGS\ENL\LOA2.Rpt

OFFICIAL RECORD COPY

In small Box on "OFC" line enter: C = Cover Only; E = Cover & Enclosure; N = No Copy  
In small Box on "DATE" line enter: M = E-Mail Distribution; H = Hard Copy

OFC	HLUR	E	HLUR		HLUR					
NAME	JGSpraul/jk		RLJohnson		JJHolonich					
DATE	12/01/94		12/ /94		12/ /94					

U.S. NUCLEAR REGULATORY COMMISSION  
OBSERVATION AUDIT REPORT 95-01  
OF THE  
U.S. DOE OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT  
AUDIT HQ-95-01  
OF THE  
CIVILIAN RADIOACTIVE WASTE MANAGEMENT SYSTEM  
MANAGEMENT AND OPERATING CONTRACTOR  
(TRW Environmental Safety Systems, Inc.)

12/ /94  
Thomas C. Trbovich (per telephone)  
Center for Nuclear Waste  
Regulatory Analyses

12/ /94  
John G. Spraul  
High-Level Waste & Uranium  
Recovery Projects Branch  
Division of Waste Management

Reviewed and approved by:

12/ /94  
Robert L. Johnson, Chief  
High-Level Waste & Uranium  
Recovery Projects Branch  
Division of Waste Management

## **1.0 INTRODUCTION**

During October 10-14, 1994, members of the U. S. Nuclear Regulatory Commission (NRC) Division of Waste Management Quality Assurance staff observed a U. S. Department of Energy (DOE), Office of Civilian Radioactive Waste Management (OCRWM), Office of Quality Assurance (OQA) audit of the Civilian Radioactive Waste Management System (CRWMS), Management and Operating (M&O) Contractor QA Program relative to the control of subcontract work. The audit, HQ-95-01, was conducted at the TRW Environmental Safety Systems, Inc. offices in Vienna, Virginia. The focus of the audit was a performance-based evaluation of the processes and products to determine the effectiveness of the M&O QA program with regard to the control of subcontracted work. In addition, the clarity of task descriptions provided to the CRWMS M&O were also evaluated. There were no other interested organizations participating in this audit.

This report addresses the effectiveness of the audit and the adequacy of QA controls in the audited area of the CRWMS M&O QA program.

## **2.0 OBJECTIVES**

The objectives of the audit team were to determine whether the CRWMS M&O QA program for subcontract control and its implementation meet the applicable requirements and commitments of the OCRWM "Quality Assurance Requirements and Description" document (QARD, DOE/RW-0333P) and associated implementing procedures.

The NRC staff's objective was to gain confidence that OQA and the CRWMS M&O are properly implementing the requirements of their QA programs in accordance with the OCRWM QARD and Title 10 of the Code of Federal Regulations (10 CFR), Part 60, Subpart G (which references 10 CFR Part 50, Appendix B).

## **3.0 MANAGEMENT SUMMARY AND CONCLUSIONS**

The NRC staff has determined that audit HQ-95-01 was useful and effective. The audit was very well organized and conducted in a thorough and professional manner. Audit team members were independent of the activities they audited. The audit team was well qualified in the QA discipline, and its assignments and checklist items were adequately described in the audit plan.

The NRC staff agrees with the preliminary audit team finding that the overall implementation of the M&O QA program relative to subcontract control is marginal. One preliminary Corrective Action Request (CAR) was discussed by the audit team at the post-audit meeting. Five other potential CARs were acceptably resolved by the M&O organization during the audit. Nine recommendations were also made to improve various aspects of the subcontract control program. Though the preliminary CAR and items corrected during the audit were minor in nature, two of the M&O control of subcontract work process steps dealing with work classification, evaluation and acceptance were judged marginal and therefore require continued M&O management attention. Four other process steps were judged effective and one step dealing with supplier evaluation and acceptance could not be evaluated due to lack of activity.

The M&O QA program should continue to be monitored to ensure that the deficiencies identified during this audit and previous audits are corrected in a timely manner and that future QA program implementation is effective. The NRC staff expects to participate in this monitoring as observers and may perform its own independent audits at a later date to assess implementation of the M&O QA program.

#### **4.0 AUDIT PARTICIPANTS**

##### **4.1 NRC**

John Spraul	Observer	
Thomas Trbovich	Observer	Center for Nuclear Waste Regulatory Analyses (CNWRA)

##### **4.2 DOE**

Dennis Threatt	Audit Team Leader (ATL)	Headquarters Quality Assurance Division (HQAD)/Quality Assurance Technical Support Services (QATSS)
Fred Bearham	Auditor	HQAD/QATSS
Water Coutier	Auditor	HQAD/QATSS
Hugh Lentz	Auditor	HQAD/QATSS
Tom Swift	Auditor	HQAD/QATSS
Gary Wood	Auditor	HQAD/QATSS

#### **5.0 REVIEW OF THE AUDIT AND AUDITED ORGANIZATION**

This audit of the CRWMS M&O subcontract control was conducted in accordance with OCRWM Quality Assurance Administrative Procedure (QAAP) 18.2, "Audit Program" (Revision 6) and QAAP 16.1, "Corrective Action" (Revision 6). The NRC staff observation of this audit was based on the NRC procedure, "Conduct of Observation Audits," issued October 6, 1989.

##### **5.1 Scope of the Audit and Observations**

###### **5.1.1 QA Programmatic Elements**

Audit HQ-95-01 was a limited scope, performance-based evaluation addressing two programmatic elements involved with subcontract controls which are listed below:

- 4.0 Procurement Document Control
- 7.0 Control of Purchased Items and Services

###### **5.1.2 Technical Areas**

The audit of the CRWMS M&O subcontract controls did not include a technical evaluation.

###### **5.1.3 Observations**

The NRC staff observed the majority of the audit team evaluations.

##### **5.2 Timing of the Audit**

The NRC staff believes the general timing of this audit was appropriate for HQAD to evaluate the pertinent subcontract controls established by the CRWMS M&O and for the NRC staff to evaluate the OCRWM audit process.

### 5.3 Examinations of QA Programmatic Elements

To conduct this audit in a performance-based manner, the CRWMS M&O control of subcontract work, as identified in Quality Administrative Procedure (QAP) 4-1, "Procurement Document Control," and QAP-7-1, "Control of Purchased Items and Services," was characterized into seven critical process steps by the audit team. These steps included:

- 1) Work Definition
- 2) Work Classification ✓
- 3) Procurement Planning
- 4) Procurement Document Preparation
- 5) Supplier Evaluation and Selection/P. O. Award
- 6) Post Award Activities
- 7) Evaluation and Acceptance ✓

An overall evaluation of the products and interviews led to the determination of the final step entitled "Adequate Process Control."

The audit team was divided into two sub-teams, with three auditors covering process steps 1, 2, and 3 and two auditors covering process steps 4, 5, 6, and 7. Each auditor evaluated step 8 based on his individual review. The audit consisted of the review of appropriate memos, correspondence and contractual documents as well as interviews with various CRWMS M&O personnel involved with preparation, placement, and monitoring of five procurement packages that involved the following subcontractors:

- 1) National Underground Storage
- 2) Security Archives of Las Vegas
- 3) Sandia National Laboratory
- 4) Oak Ridge National Laboratory
- 5) General Atomics

The CRWMS procedures governing subcontract controls appeared to be adequate; however, the implementation of the required activities among all groups needed improvement. The M&O QA personnel had a good understanding of requirements, but spend much of their time directing activities or "fighting fires." Individual M&O procurement personnel appear to perform their function, but expect QA to integrate the requirements with other M&O groups. QA personnel have not been kept totally informed of subcontract activities, thus the audit team recommended that status reports that are being submitted by suppliers (weekly, monthly, and quarterly) should be copied to the Quality Engineering Support organization and other appropriate groups to assist in planning and conducting supplier performance evaluation activities.

The lack of an apparent defined overall responsibility for procurement activities to include coordination of QA functions led to an additional recommendation that one individual be assigned responsibility for coordination of both technical and QA functions for procurement activities.

The National Underground Storage contract had difficulty due to noncompliance with temperature and humidity controls. This had been reported in previous OQA and M&O audits, and corrective action completion dates were set for June 1995. After much discussion about the small number of records being stored, M&O management provided additional actions and promised completion by December 1994. This does not speak well for the M&O corrective action program since there was apparent disagreement internally on the proper resolution, and commitments were apparently not being tracked, thus affecting timely resolution.



#### **5.4 Qualification of Audit Personnel**

The qualification of the ATL and auditors were previously found to be acceptable, each having met the requirements of QAAP 18.1, "Qualification of Audit Personnel." One of the auditors was relatively new to the program; thus, his auditor qualification sheet and resume were reviewed by the NRC Observer with no deficiencies being noted.

#### **5.5 Audit Team Independence**

The audit team was composed of QATSS personnel who support HQAD and were familiar with the CRWMS procedures on subcontract control. However, the HQAD/ QATSS auditors were assigned to areas where they did not have prior responsibility or involvement. The audit team members had sufficient independence to carry out their assigned functions without adverse pressure and influence.

#### **5.6 Summary of NRC Staff Findings**

The NRC staff agrees with the preliminary HQAD audit team findings that the overall implementation of the CRWMS M&O Subcontract Controls is marginal. This determination was based on deficiencies corrected during the audit, and several M&O CARs, for which corrective action was not being implemented in a timely manner.

The NRC staff observed that each of the auditors reviewed an appropriate amount of documentation and interviewed sufficient CRWMS M&O personnel to make valued judgments on the adequacy of each critical process step. In addition, the audit team performed a follow up of corrective actions involved with the subcontractors identified in previous OCRWM OQA audits. Planned corrective action completion dates identified with the National Underground Storage subcontract deficiencies were moved ahead six months from June 1995 to December 1994 by CRWMS M&O management.

The auditors followed the prepared checklists, deviating when necessary to assure complete understanding of the process. Interviews were conducted in a professional manner, with questioning continuing until the auditor felt confident that the personnel were familiar and understood the process. In addition, CRWMS M&O personnel departmental interfaces were also evaluated. Weaknesses were found in the interfaces, and the audit team made four recommendations to improve communication and coordination in this area.

Though the audit findings were minor in nature, the NRC is concerned that the lack of attention to detail on the procurement process for the five subcontracts, if left unchecked, could cause major difficulties with a major subcontract for multi-purpose canisters in the future.

##### **5.6.1 Good Practices**

The audit team was thoroughly prepared and understood the programmatic and technical aspects of performance-based auditing. The auditors were thorough, persistent, and professional in approach.

The ATL was very effective in the performance of his function. When difficulties arose in contacting M&O personnel, immediate action was taken to resolve the problem. His use of the "numbered" concerns led to good caucus discussions and effective tracking of concerns throughout the week.

The daily management meetings were very effective and conducted in a professional manner, making sure M&O personnel fully understood the problem. The closing meeting was short but provided a detailed summary of the week's activities, making effective use of charts and computer-generated summaries.

### **5.6.2 Weakness**

The assignment of a number of subcontracts to one M&O quality engineer slowed the interview process and caused some audit delay. The functions of M&O Quality Engineering and Quality Engineering support need to be more clearly defined. CRWMS M&O personnel were sometimes confused over which QA organization handles what during the interview questioning.

### **5.7 Audit Team Findings**

The audit team determined that the overall implementation of QA Programmatic Elements 4.0, "Procurement Document Control," and 7.0, "Control of Purchased Items and Services," were marginally effective. The deficiencies identified during this audit and through M&O CARs contributed to this determination.

One preliminary CAR was issued at the close of the audit dealing with the review of Work Authorization Directive/Technical Direction Letter (WAD/TDL) for the impact of quality-affecting work being performed without a documented QA implementing procedure.

In addition, five deficiencies that were considered isolated in nature were corrected by CRWMS M&O personnel during the audit. These covered timely resolution of CARs, issuance of control changes, and improper correction records.

Nine recommendations for improvements were also presented for CRWMS M&O consideration.