

United States Government

Department of Energy

Carlsbad Area Office
Carlsbad, New Mexico 88221

Memorandum

DATE: March 30, 2000

REPLY TO
ATTN OF: CAO:QA:SAV:00-0270 UFC 2300

SUBJECT: CAO Audit Report A-00-10, Rocky Flats Environmental Technology Site (RFETS) TRU Waste Characterization Program Recertification

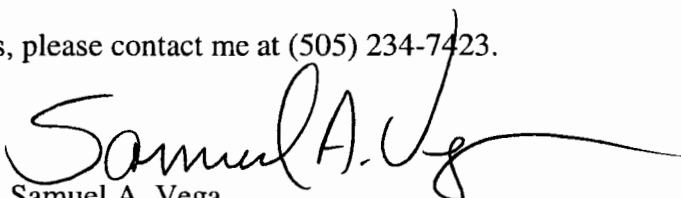
to: Joseph Legare, Assistant Manager for Environment and Compliance, RFFO

The Carlsbad Area Office (CAO) conducted an audit of the Rocky Flats Environmental Technology Site (RFETS) TRU Waste Characterization Program activities on March 6-8, 2000. The audit team concluded that the RFETS technical and quality assurance programs, for these activities were adequate in accordance with the CAO QAPD and WAC. The audit team also concluded that the RFETS procedures were being satisfactorily implemented and the evaluated processes were effective.

Two Corrective Actions Reports (CARs) have been forwarded under separate cover.

One observation and one recommendation were identified during the audit. Neither requires a response.

If you have any questions or comments, please contact me at (505) 234-7423.


Samuel A. Vega
Quality Assurance Manager

Attachments

cc w/ attachments:

- L. Chism, CAO
- B. Stroud, CAO
- M. Eagle, EPA
- J. Oliver, EPA
- S. Monroe, EPA
- J. Jeffries, EFO
- ✓ S. Zappe, NMED
- B. Walker, EEG
- D. Winters, DNFSB
- C. Ferrera, RFETS
- J. O'Leary, RFETS
- T. Bowden, CTAC
- C. Riggs, CTAC

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**U.S. DEPARTMENT OF ENERGY
CARLSBAD AREA OFFICE**

AUDIT REPORT

OF THE

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

GOLDEN, COLORADO

AUDIT NUMBER A-00-10

March 6-8, 2000

**TRU WASTE CHARACTERIZATION PROGRAM
RECERTIFICATION AUDIT**



Prepared By: *Charles L. Riggs*
Charles L. Riggs
Audit Team Leader

Date: 3/29/00

Approved By: *Samuel A. Vega*
Samuel A. Vega
CAO QA Manager

Date: 3/30/00

1.0 EXECUTIVE SUMMARY

Carlsbad Area Office (CAO) Audit A-00-10 was conducted to evaluate the adequacy, implementation, and effectiveness of selected portions of the Rocky Flats Environmental Technology Site (RFETS) Transuranic (TRU) waste characterization program.

The audit was conducted at the RFETS facility March 6-8, 2000. The audit evaluated the proper maintenance of the RFETS QA Program since the last recertification audit in March 1999. The Canberra isotopic gamma scanner (IQ3), passive neutron (PN), and segmented gamma scanner (SGS) were also evaluated.

The audit team concluded that the adequacy of the RFETS quality assurance (QA) and technical programs, as applicable to these activities, was satisfactory in meeting the CAO Quality Assurance Program Document (QAPD), which establishes the applicable elements of NQA requirements in 40 CFR 194.22, and Waste Acceptance Criteria (WAC) requirements. The audit team also concluded that the defined QA and technical programs were being implemented in accordance with the RFETS QA plan found in Section 3 of 1-MAN-008-WM-001, revision 3, *Rocky Flats Environmental Technology Site Transuranic (TRU) Waste Management Manual*, RFETS Quality Assurance Project Plan (QAPjP), and RFETS implementing procedures and that, for the technical areas evaluated, the RFETS processes were effective.

The audit was performed in parallel with an inspection performed by personnel representing the United States Environmental Protection Agency (USEPA). The Environmental Evaluation Group (EEG) was present in an observer capacity.

The audit team identified two conditions adverse to quality resulting in the issuance of two Corrective Action Reports (CARs) in the areas of not including Nonconformance reports (NCRs) in a batch data report and not performing scale response checks. Three deficiencies, isolated in nature and requiring only remedial corrective actions, were Corrected During the Audit (CDA). One Recommendation is being offered for management consideration and action. One Observation was identified. The Observation and Recommendation are described in Section 6.0 of this report.

2.0 SCOPE

The audit team evaluated the adequacy, implementation, and effectiveness of quality assurance program activities and technical processes supporting the Rocky Flats Environmental Technology Site (RFETS) Waste Characterization and Certification Program.

The following quality assurance (QA) program elements were evaluated in accordance with the requirements of the CAO QAPD. The remainder of the applicable NQA-1 criteria not addressed in this audit were evaluated by CAO during recent CAO audits. Therefore, all NQA-1 elements relevant to RFETS were evaluated within the previous year. Attachment 4 depicts these audits.

- Organization and Interface Control
- Document Control
- Records
- Training
- Grading
- Corrective Action

The following technical elements were evaluated in accordance with the CAO WAC:

- Canberra Segmented Gamma Scanner (SGS)
- Canberra Passive Neutron (PN)
- Canberra Isotopic Gamma Scanner (IQ-3)

The evaluation of RFETS TRU waste activities and documents was based on current revisions of the following documents:

RFETS QAPjP for the Transuranic Waste Characterization Program, 95-QAPjP-0050

RFETS Transuranic Waste Management Manual, 1-MAN-008-WM-001

Related RFETS technical and quality assurance implementing procedures

3.0 AUDIT TEAM AND OBSERVERS

CAO AUDITORS/TECHNICAL SPECIALISTS

Samuel Vega	Quality Assurance Manager, CAO
Charlie Riggs	Audit Team Leader, CTAC
Jack Walsh	Auditor, CTAC
Wayne Ledford	Auditor, CTAC
Jim Schuetz	Auditor-in-training, CTAC
Ken Coop	Technical Specialist, CTAC

INSPECTORS/OBSERVERS

Mike Eagle	Inspector, EPA
Ben Walker	Observer, EEG

4.0 AUDIT PARTICIPANTS

RFETS individuals contacted during the audit process are identified in Attachment 1. A preaudit meeting was held at RFETS Building 460 on March 6, 2000. A meeting was held with RFETS management and staff to discuss issues and potential deficiencies on March 7, 2000. The audit was concluded with a postaudit meeting held at RFETS Building 460 on March 8, 2000.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy, Implementation, and Effectiveness

The audit team concluded that the adequacy of the RFETS QA program, as described in the RFETS implementing procedures for these activities, satisfactorily meets the requirements of the CAO QAPD, Revision 3 and the WAP, Revision 7. The audit team concluded that the QA program was being satisfactorily implemented. For the technical processes evaluated, the RFETS program was determined to be effective.

A summary table of audit results is provided as Attachment 2. Details of audit activities, including specific objective evidence reviewed, are contained within the audit checklists. Checklists are retained as CAO quality records. Attachment 3 identifies the RFETS implementing procedures that were included in the audit.

5.2 Quality Assurance

The audit team evaluated the QA program organization, interfaces, and grading process. The evaluation included a review of the current RFETS organizational charts, interface documents, approved FY2000 Transuranic Waste Characterization (TWCP) QA Grading Forms, and interviews with the Site Project Manager and Site Project QA Officer. The audit team determined that the RFETS TWCP organization, interface structures, and grading process are adequate, satisfactorily implemented, and effective.

The audit team also discussed a proposed reorganization and new grading process with RFETS management. These proposed changes will require procedures 1-MAN-008-WM-001, *Transuranic (TRU) Waste Management Manual*, and PRO-486-WIPP-006, *TRU Waste Characterization Project QA Grading*, to be revised and submitted to CAO for review and approval.

Records and document control processes were evaluated to the requirements of applicable RFETS documents (PRO-767-WIPP-001, Rev. 0; 1-PRO-007-WIPP-005, Rev. 1; RMRS-DC-06.01, Rev. 1; RMRS-QA-05.01, Rev. 1; MAN-063-DC, Rev. 0; and MAN-001-SDRM, Rev. 2). The evaluation included a review of document control files for five controlled documents and a sample of 34 of approximately 2500 records. An

additional 30 records were accessed and examined during the evaluation of training. One WIPP Record Transmittal/Receiving Form (WRT/RF) did not accurately reflect the number of pages of a training roster transmitted to the WIPP records center. This was corrected during the audit (CDA-3). The audit team determined that the document control and records processes are adequate, satisfactorily implemented, and effective.

The training process was evaluated to the requirements of RFETS document PLN-97-006, Rev. 6. The evaluation included a review of ten training files from the management and support staff. The audit team determined that the training process is adequate, satisfactorily implemented, and effective.

The corrective action report (CAR) process was reviewed to the requirements of RFETS procedure 3-X31-CAP-001. The evaluation included a review of selected CARs initiated since the previous CAO re-certification audit in March 1999. The audit team determined that the CAR process is adequate, satisfactorily implemented, and effective.

5.3 Technical Activities

The audit team examined the procedures and processes associated with the use of the Canberra mobile assay systems at RFETS. This system consists of three Nondestructive Assay (NDA) instruments: the IQ3 gamma counter, the PN passive neutron counter, and the SGS gamma scanner. The first two instruments have previously been qualified to make direct assay measurements; the IQ-3 also performs isotopic abundance measurements. During the audit, it was determined that both the SGS and IQ-3 instruments can be used to provide isotopics for the PN counter provided that both gamma instruments have been shown to provide equivalent isotopic ratios and both have passed the appropriate Quality Assurance Objectives (QAO) and Performance Demonstration Program (PDP) tests.

A problem with Canberra's failure to verify calibration of the instruments within the required one-year period was satisfactorily resolved for the effected drums. However, the data packages for these drums were forwarded to RMRS without including the open Nonconformance Reports (NCRs) (CAO CAR 00-017). For the same drums, Canberra did not meet the monthly scale check specified in their procedures (CAO CAR 00-018), but this was determined to have had no impact on the quality of the assay data.

The audit team made a recommendation that Canberra specify the exact meaning of the various time intervals (daily, weekly, monthly, etc.) used in their procedures (Recommendation # 1). An Observation was written regarding the need to use detailed technical checklists and software problem-detection capabilities to aid in the technical review process (Observation # 1).

Overall, the Canberra NDA process was found to be adequate, satisfactorily implemented, and effective.

6.0 CORRECTIVE ACTIONS, OBSERVATIONS, and RECOMMENDATIONS

6.1 Corrective Action Reports

6.1.1 CAO CAR 00-017

The annual calibration verifications for the IQ3 and PN were due in December 1999, but were not completed until March 8, 2000. The systems were used for data collection in January and February 2000, but the batch reports transmitted to RFETS containing the data generated during this period did not contain the NCRs documenting that the systems had not received the required calibration verification.

6.1.2 CAO CAR 00-018

Although routine-counting operations with the IQ3 and PN resumed on January 24, 2000, no scale response check had been performed on the IQ3 (the last response check was on September 30, 1999). The PN was scale checked on February 25, 2000, exceeding the monthly requirement.

6.2 Deficiencies Corrected During the Audit (CDA)

Three deficiencies, requiring only remedial action, were identified during the audit. All three were corrected before the completion of the audit. These are identified in the completed audit checklists, which are kept as QA Records.

6.3 Observation

Observations document marginally acceptable conditions that, if not controlled, might later escalate into a deficiency.

The Independent Technical Reviewer and the Technical Supervisor do not use detailed technical checklists to aid their reviews of NDA data and results. The analysis software does not flag all possible problems associated with the assay. In order to decrease the probability that out-of-bounds assay data will be accepted inadvertently, Canberra should use detailed technical checklists in their review process and enhance the problem-detection capability of their software.

6.4 Recommendation

Recommendations are presented for RFETS management consideration.

Canberra should clearly define, in their procedures, terms such as daily, weekly, monthly, and annually. This would eliminate any confusion as to the status of required periodic performance checks.

7.0 LIST OF ATTACHMENTS

Attachment 1: Personnel Contacted During the Audit

Attachment 2: Summary Table of Audit Results

Attachment 3: Table of RFETS Implementing Procedures Audited

Attachment 4: QA Elements Audited by CAO at RFETS During 1999

PERSONNEL CONTACTED DURING THE AUDIT

RFETS PERSONNEL CONTACTED DURING AUDIT A-00-10				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Anderson, Scott	KH/Waste Ops; Program Manager	X	X	X
Armour, Faith	SOM; Waste Record Specialist	X		
Ater, Ed	TRU Waste Projects; Eng	X	X	
Ballenger, R. J.	SSOC/WIPP; Residue Compliance Manager	X		X
Bradford, Jeff	KH W&RO; Dep Manager	X		X
Cannon, C. Y.	KH Quality Program; Senior Technical Advisor		X	
Castagneri, Mark	RMRS/QA; TWCP QAO	X	X	X
Crowe, Steve	KH Closure Projects	X		X
Dahl, Dave	SSOC NDA; QE			X
Davidson, Craig	Canberra, Project Manager	X	X	X
Davidson, Dorothy R.	Canberra/NDA; VP NDA Services	X		X
Davis, Robert E.	KH CP E&I/Special Projects	X	X	X
Eschenbaum, R. A.	SSOC/LATA/WIPP/Residue Compliance; Deputy	X		X
Ferguson, Jim	TRU Waste Projects; Eng	X		
Ferrera, Carol L.	Waste Certification and Oversight; TRU Waste Certification Official	X		X
Ferrera, Ken	KH/707 Project Dir	X		X
Fisher, A. J.	SSOC; QA Manager	X		X
Gillespie, Bruce	Canberra; Sr. Scientist	X	X	
Grady, Frank	RMRS/TRU Waste Projects; TRU Project Engineer	X	X	X
Hamann, Lynn	RMRS/Doc. Control		X	

RFETS PERSONNEL CONTACTED DURING AUDIT A-00-10				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Hinkhouse, Cheryl	CA/PATS; Site Analyst		X	
Kirschenmann, Harley	RMRS/TWCP; Engineer		X	X
McGavin, Andrew	Source One; Manager	X	X	X
McKinney, Ruth	Source One; Executive Vice President/Acting Program Manager	X	X	X
McLellan, Jeana	SOM/WRC; Micro Sup.		X	
O'Leary, Jerry	RMRS/TRU Waste Project Manager	X	X	X
Pennala, Eric	MCS; General Manager		X	
Pigeon, Paul	RMRS/Training Programs; TWCP Training Officer	X	X	X
Powell, Mark	MCS; Quality Assurance Manager		X	
Raulston, John A.	KH Ind. Safety; Senior Technical Advisor		X	
Robbins, Elver	DOE/RFFO/QPD	X		X
Robbins, Jan	RMRS/Doc. Control; Acting Manager		X	
Rogers, Alan	KH W&RO; WM Manager	X	X	
Seyfert, Warren	DOE/RFFO; General Eng.			X
Smart, Kim	KH/IRM; Manager	X	X	X
Smith, L. C.	KH/Quality Program Mgr.	X	X	X
Stewart, Judith	SAIC/SSOC NDA; QA/QC Engineer			X
Stoddard, Ann	Source One/Doc. Control		X	
Tressell, John	RMRS/TRU Waste QA; Eng.		X	
Turner, C. A.	SSOC; Lab Manager	X		
Williams, Linda	RMRS/Records; Compliance Specialist		X	

RFETS PERSONNEL CONTACTED DURING AUDIT A-00-10				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Wolfe, Mike	SOM; Waste Records Center Manager	X	X	X
Xuan, Lam	DOE/RFFO/EC/General Engineer/WIPP Interface	X	X	X

AUDIT SUMMARY TABLE A-00-10

Documents	Concern Classification				QA Evaluation		Technical
	CARs	CDAs	Obs	Rec	Adequacy	Implementation	Effectiveness
Activity							
ORGANIZATION					A	S	E
GRADING					A	S	E
CORRECTIVE ACTION					A	S	E
DOCUMENT CONTROL					A	S	E
RECORDS					A	S	E
TRAINING		3			A	S	E
PN	1,2		1	1	A	S	E
SGS			1	1	A	S	E
IQ-3	1,2	1,2	1	1	A	S	E
TOTALS	2	3	1	1	A	S	E

Definitions

E = Effective
S = Satisfactory
I = Indeterminate

CAR = Corrective Action Report
CDA = Corrected During Audit
NE = Not Effective

Obs = Observation
Rec = Recommendation
A = Adequate
NA = Not Adequate

RFETS PROCEDURES AUDITED FOR A-00-10

No.	Procedure Number	Title
2	1-MAN-008-WM-001, R3	Transuranic (TRU) Waste Management Manual
3	1-MAN-012-SCARM, R2	Site Corrective Action Requirements
4	1-PRO-077-WIPP-005, R1	Management of WIPP Information Prior to Transmittal to WIPP Project Records
5	1-V41-RM-001, R1	Records Management Guidance for Records Sources
6	3-X31-CAP-001, R1	Corrective Action Process
7	MAN-001-SDRM, R2	Site Document Requirements Manual
8	MAN-062-CAUSEANALYSIS, R2	Cause Analysis Requirements Manual
9	MAN-063-DC, R0	Document Control Program Manual
10	PLN-97-007, R6	TRU Waste Characterization Program Training Implementation Plan
11	RMRS-DC-06.01, R1	Document Control Program
12	RMRS-QA-05.01, R1	Preparation and Control of RMRS Documents
13	RMRS-QA-09.01, R4	Management Assessments
14	PRO-767-WIPP-001, R0	WIPP Project Office Records
15	PRO-486-WIPP-006, R0	TRU Waste Characterization Project QA Grading
16	WIPP-007, R2	TRU Waste Characterization Project Conditions Adverse to Quality Trending and Analysis
17	SQM-007, 2/16/2000	IQ3 Waste Assay Trailer Operating Procedure – Operating and Calibrating the Canberra IQ3 Gamma Scanner
18	SQM-008, 2/16/2000	Operating & Calibrating the Canberra Passive Neutron Counter
19	SQM-009, 2/16/2000	Operating & Calibrating the Canberra Segmented Gamma Scanner
20	SQM-010, 2/21/2000	Review, Validation, & Reporting Nondestructive Assay (NDA) Data & Results
21	SQM-011, 2/03/2000	Canberra Nuclear NDA Implementation Plan for RFETS Transuranic Waste Characterization Program
22	SQM-016, 2/03/2000	Overview of Canberra Mobile NDA Services RFETS Project
23	SQM-120, 2/24/2000	Mobile Software Configuration Management
24	SQM-130, 6/03/1999	RFETS Transuranic Waste Expert Review

QA ELEMENTS AUDITED BY CAO AT RFETS DURING 1999

Element	99-07 3/99	99-13 3/99	99-09 4/99	99-16 4/99	99-21 6/99	99-17 9/99	00-02 11/99
1. Organization	X		X				
2. Quality Assurance Program	X						
3. Design Control	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4. Procurement Document Control	X	X	X			X	
5. Instructions, Procedures, and Drawings	X		X			X	
6. Document Control	X		X			X	
7. Control of Purchased Items and Services	X	X	X			X	
8. Identification and Control of Items	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9. Control of Processes	X		X			X	
10. Inspection	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11. Test Control	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12. Control of Measuring and Test Equipment	X		X			X	
13. Handling, Storage, and Shipping	X		X			X	
14. Inspection, Test, and Operating Status	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15. Control of Nonconforming Items	X		X	X		X	
16. Corrective Action	X		X	X			
17. Quality Assurance Records	X		X			X	
18. Audits	X		X			X	
A. Personnel Training and Qualification	X		X	X		X	
B. Software QA	X	X	X	X		X	
C. Sampling	X		X				

- A-99-07 Recertification Audit
- A-99-09 Salts Audit
- A-99-13 SQA (Recertification follow-up) Audit
- A-99-16 EPA Salts Audit
- A-99-17 Residues Repackaging Audit
- A-99-21 Draft WAP Audit
- A-00-02 EPA Residues Repackaging Audit