

United States Government

Department of Energy
Carlsbad Area Office

memorandum


ENTERED

DATE: April 27, 1999

REPLY TO
ATTN OF: CAO:QA:MAI:99-0552 UFC 2300.00SUBJECT: CAO Audit Report A-99-13, Rocky Flats Environmental Technology Site (RFETS)
Canberra SQA TRU Waste Characterization, Certification, and Transportation Program

TO: Joseph A. Legare, RFFO

The Carlsbad Area Office (CAO) conducted an audit of the software quality assurance (SQA) activities of Canberra at RFETS on March 24, 1999. The audit team concluded that the combined and defined RFETS/Canberra Quality Assurance (QA) Programs have adequately addressed the CAO Quality Assurance Program Document (QAPD) and the RFETS Quality Assurance Project Plan (QAPjP), as applicable. The audit team also concluded that the defined QA programs were being satisfactorily implemented and effective for the control of software utilized at RFETS for waste characterization.

If you have any questions or comments concerning this report, please contact Mary E. Bennington, RFFO Certification Manager, at (505) 234-7482.



for Marc A. Italiano
Quality Assurance Manager

Attachment

cc w/attachment:

L. Chism, CAO
B. Stroud, CAO
B. Bennington, CAO
S. Vega, CAO
M. Eagle, EPA
S. Monroe, EPA
S. Zappe, NMED
B. Walker, EEG
D. Winters, DNFSB
M. Castagneri, RFETS
J. O'Leary, RFETS
P. Rodriguez, CTAC
T. Bowden, CTAC
D. Davidson, Canberra



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

AUDIT REPORT

OF THE

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITES

Golden, COLORADO

AUDIT NUMBER A-99-13

MARCH 24, 1999

**TRU WASTE CHARACTERIZATION, CERTIFICATION, AND
TRANSPORTATION**



Prepared By: *M. Lea Chism*
for Mary E. Bennington
Audit Team Leader and
Waste Certification Manager

Date: 04/27/99

Approved and
Issued By: *M. Lea Chism*
for Marc A. Italiano
CAO QA Manager

Date: 04/27/99

1.0 EXECUTIVE SUMMARY

Carlsbad Area Office (CAO) Audit A-99-13 was conducted to evaluate the adequacy, implementation, and effectiveness of the quality assurance activities related to the software quality assurance (SQA) program as evaluated by the Rocky Flats Environmental Technology Site (RFETS) and implemented by Canberra. The audit was conducted at the RFETS facilities near Golden, Colorado on March 24, 1999.

The audit team concluded that the RFETS/Canberra QA Programs have adequately addressed the CAO Quality Assurance Program Document (QAPD) and the RFETS Quality Assurance Project Plan (QAPjP), as applicable. The Canberra software quality assurance technical areas evaluated by the audit team were determined to be satisfactorily implemented and effective for the control of software utilized by Canberra at RFETS.

No conditions adverse to quality were identified during the audit. Two recommendations were identified during the course of the audit and were immediately acted upon by RFETS, in a positive and productive manner. Details relating to these recommendations are discussed further in Section 6.0 of this report. In addition, one Exemplary Practice being performed by Canberra was noted and is also described in Section 6.0.

2.0 SCOPE

The audit team evaluated the adequacy, implementation, and effectiveness of technical and quality assurance activities related to the software QA program as evaluated by RFETS and implemented by Canberra, relative to the Transuranic Waste Characterization Program (TWCP). The audit team focused on 1) flow-down of requirements, 2) management of the Canberra contract, and 3) software quality assurance.

The following QA elements were evaluated in accordance with the CAO QAPD:

Interface Control – relative to the requirements flow-down

SQA Control – as implemented by Canberra at RFETS

Procurement Controls – relative to the management of the Canberra contract and supplier evaluation

Assessments/Audits – relative to Canberra and by Kaiser-Hill (K-H) Procurement QA (PQA)

The following SQA technical elements were evaluated in accordance with the CAO QAPD and the Canberra implementing procedures, relative to NDA (RFETS/Canberra) SQA control:

Configuration Identification

Configuration Control

Configuration Status Accounting

Configuration Auditing

3.0 AUDIT TEAM AND OBSERVERS

AUDITORS/TECHNICAL SPECIALISTS

Beth Bennington	Audit Team Leader, CAO
Samuel Vega	Management Representative, CAO
Pete Rodriguez	Lead Auditor, CTAC
Steve Hans	Auditor, CTAC
Charlie Riggs	Auditor, CTAC
Mario Chavez	Technical Specialist, SNL

INSPECTORS/OBSERVERS

Mike Eagle	EPA Inspector
John Goode	EPA Inspector/Techlaw Inc.
Bill Volke	EPA Inspector/Techlaw Inc.
Ray Wood	EPA Inspector/Trinity Engineering Associates, Inc.
Ben Walker	EEG Observer

4.0 AUDIT CONDUCT AND AUDIT PARTICIPANTS

RFETS and Canberra individuals involved in the audit process are identified in Attachment 1. A preaudit meeting was held in the T130-J, Conference Room on March 24, 1999, at 8:00 am. Several meetings were held with RFETS management and staff to discuss issues and recommendations. The audit was concluded with a postaudit meeting held in the T130-J Conference Room on March 24, 1999 at 4:30 pm.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy, Implementation, and Effectiveness

The audit team concluded that the adequacy of the RFETS/Canberra QA program is satisfactory in meeting the requirements of the CAO QAPD and the RFETS QAPJP, as applicable. The audit team also concluded that the QA program is being satisfactorily implemented and is effective. The Canberra SQA technical processes evaluated by the audit team were also determined to be satisfactorily implemented and effective.

5.2 QA Program Audit Activities

The audit team evaluated the RFETS assessment of Canberra's SQA program for compliance with the QAPD; RFETS interface controls (including requirements flow-down and management of the RFETS/Canberra contract); and SQA (as implemented by Canberra on site). The overall conclusion was that the RFETS/Canberra QA programs and technical processes were satisfactorily implemented and effective.

Details of audit activities, including specific objective evidence reviewed, are contained within the audit checklists. Checklists are maintained as QA records. The procedures evaluated during the audit are as follows:

- SQM-120 – *Mobil Software Configuration Management (Canberra)*
- SQM-121 - *Mobil Software Configuration Verification (Canberra)*
- 1-J55-ADM-08.10 – *Subcontractor Quality Evaluations (RFETS)*

5.3 Technical Activities

Implementation of the requirements for the control of software used by Canberra for NDA was evaluated. The evaluation included review of processes for development and control of software baselines and classification, and of technical review of completed software documentation. Evaluations of applicable Canberra technical activities related to NDA SQA are summarized below:

Configuration Identification (CI)

No unique labeling is performed on site because all identification activities are done at the Canberra home office in Meriden, CT. The "Model and System" notebooks for the three Waste Assay Software Packages (IQ3, SGS, and PN) contain the complete approved configurations. Included is a Bill of Materials that lists the software names and versions as part of the "Baseline and Traceability" document.

Configuration Control (CC)

There are no on-site changes, however, change requests and error reporting are initiated through the Lotus Notes Network. For the Electronic Document database application, the requests are documented using the IT Support Request Form. For application software, the requests are documented using the Software Performance Report Form.

Configuration Status Accounting

The "Baseline and Traceability" document for each software package is supplemented by the online Waste Assay Document Database. This software inventory is available through the Canberra Lotus Notes Network.

Configuration Auditing (CA)

Procedure SQM-121, *Mobil Software Configuration Verification*, describes the process for verifying that the software models and versions used on the waste characterization processes match those listed on the applicable software inventory log. A demonstration of the process was performed by the Canberra staff and found to be an effective method for authenticating the software baseline, (see Exemplary Practice # 1).

6.0 RECOMMENDATIONS, & EXEMPLARY PRACTICES

6.1 Recommendations

1. It was noted that procedure SQM-120 was unclear with respect to the activities performed on-site versus those performed strictly at the Canberra Meriden facility. The recommendation to change and/or clarify this procedure was acted upon by Canberra personnel through the initiation and proposal of several procedural changes that were presented to the audit team. The changes will clarify and specify activities for on-site software configuration management and delete any activities performed at the Canberra Meriden facility.
2. During the review of recent changes to procedure 1-J55-ADM-08.10, it was noted that the TRU Waste Certification Program (TWCP) QA Officer's coordination of evaluation efforts was not clear as to how this coordination is documented. The recommendation for clarification of the TWCP QA Officer's coordination of subcontractor evaluation efforts was acted upon immediately by RFETS management through the issuance of a Document Change Form (DCF). The DCF was issued to clarify how the coordination of a WIPP-related evaluation is accomplished with the Program QA Officer (PQAO).

6.2 Exemplary Practice

The four main functions of software Configuration Management (CM) are identification, change control, status accounting, and auditing. The process outlined in SQM-121,

Mobil Software Configuration Verification, implements a very thorough job of verification on a local installation. This type of practice is recommended for any off-line PC platform where no software configuration tools exist. The method does a good job of authenticating the baseline.

7.0 ATTACHMENT

Attachment 1: Personnel Contacted During the Audit

PERSONNEL CONTACTED DURING THE AUDIT

PERSONNEL CONTACTED				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Ailes, Sid	SAIC/RWMS / SQA Consultant	X	X	X
Anderson, Scott	K-H/Program Manager		X	X
Boshuyzen, Tom	Canberra/SQA Manager	X	X	
Castagneri, Mark	RMRS/RFETS PQAO	X	X	X
Davidson, Craig	Canberra/Site Project Manager	X	X	X
Davidson, Dorothy	Canberra/Technical Director	X	X	X
Elisishans, Carl	Canberra/Director QA	X	X	X
Grady, Frank	RMRS/TRU Waste Project; Project Engineer	X	X	X
Guyn, Terry	K-H/QA Engineer PQA/E-2		X	
Jeffries, James	DOE/ RFFO; Division Director	X	X	X
O'Leary, Jerry	RMRS TWCP TRU Projects; Manager TRU/TRM Projects		X	X
Xuan, Lam	DOE/RFFO/EO; General Engineer/WIPP Liaison	X	X	X