DATE: March 18, 1999
REPLY TO: CAO:QA:MAI 99-0567 UFC 2300
ATTN OF:

SUBJECT: Audit (A-99-13) of Rocky Flats Environmental Technology Site (RFETS) Canberra SQA

TO: Joseph A. Legare, RFFO

Please be advised that a team of auditors and technical specialists from the Carlsbad Area Office (CAO) will conduct an audit at RFETS on March 24 and 25, 1999. The audit will be conducted in accordance with the attached audit plan. The purpose of the audit is to evaluate the SQA as implemented by Canberra and evaluated by RFETS for the WIPP Project.

Your representatives are requested to coordinate with the audit team to develop the necessary documentation for the audit team to gain access to RFETS facilities, support the audit, and provide the audit team with access to appropriate documentation and records. RFFO is expected to provide meeting rooms (with overhead projector) to hold approximately 20 people for the entrance and exit meetings, separate working rooms for the audit team, and for the EPA inspectors and EEG observer, full set of documentation applicable to RFFO work for the WIPP, including the applicable procedures, two flip charts and marking pens for the audit team working room, and miscellaneous office supplies (e.g., pens, paper, copy machine, Post-It Notes, stapler, "scotch" tape, etc.) for each working room.

If you have any questions or comments concerning this audit, please contact Beth Bennington at (505) 234-7482, or me at (505) 234-7484.

Marc A. Italiano
Acting Quality Assurance Manager

Attachment
cc w/original attachment:
L. Chism, CAO

cc w/attachment:
B. Bennington, CAO
M. Italiano, CAO
B. Stroud, CAO
S. Vega, CAO
D. Winters, DNFSB
B. Walker, EEG
M. Eagle, EPA
S. Monroe, EPA
S. Zappe, NMED
M. Castagneri, RFETS
G. O'Leary, RFETS
P. Rodriguez, CTAC
CARLSBAD AREA OFFICE AUDIT PLAN

Audit Number: A-99-13

Organization: Rocky Flats Environmental and Technical Site (RFETS)

Date and March 24 - 25, 1999 Location: Golden, Colorado

Audit Team: Beth Bennington Audit Team Leader/CAO
Sam Vega Management Rep./CAO
Pete Rodriguez Lead Auditor/CTAC
Mario Chavez Technical Specialist/SNL
Steve Hans Auditor/CTAC
Charlie Riggs Auditor/CTAC

Audit Scope: The audit will evaluate the adequacy, implementation, and effectiveness of the quality assurance activities related to the software QA program as evaluated by RFETS and implemented by Canberra, relative to the Transuranic Waste Characterization Program. The audit team will focus on 1) flow-down of requirements, 2) management of the Canberra contract, and 3) Software Quality Assurance.

Activities/Tasks to be Audited:

The following quality assurance elements of the CAO Quality Assurance Program Document (QAPD) will be evaluated:

- Interface Control
- Software Quality Assurance - as implemented by CANBERRA
- Procurement Controls, Requirement flow-down/Supplier Evaluation – related to contract.

Governing Documents/Requirements:

Adequacy evaluations of TWCP documents will be based on the current revisions of the following documents:

CAO Quality Assurance Program Document, CAO-94-1012
Programmatic checklists will be developed from the active revision of the following documents:

SQM-120 - *Mobile Software Configuration Management* (Canberra)
SQM-121 - *Mobile Software Configuration Verification* (Canberra)
1-J-55-ADM-08.10 - *Subcontractor Quality Evaluations* (RFETS)

**Schedule of Audit Activities:**

A preaudit conference is scheduled for Wednesday, March 24, at 8:00 a.m. at the RFETS location (T-130J).

An audit team caucus will be held at 4:00 p.m. Wednesday at the RFETS location.

The audit team will meet with the appropriate RFETS management at 8:30 a.m. Thursday at the RFETS location.

A postaudit conference is scheduled for Thursday, March 25, at 4:00 p.m. at the RFETS location.

Prepared By: [Signature]
Pete Rodriguez, Lead Auditor

Approved By: [Signature]
Mary E. Bennington, Waste Certification Manager

Approved By: [Signature]
Marc Italiano, Acting QA Manager

Date: 3/17/99
Date: 3/18/99
Date: 3/19/99
CAO AUDIT CHECKLIST

Organization Evaluated: Rocky Flats Environmental Technology Site (RFETS)  
Audit Number: CAO A-99-13

Activities Evaluated: RFETS Evaluation of Canberra Software Quality Assurance  
Date of Evaluation: March 24 - 25, 1999

Controlling Documents: 1-155-ADM-08.10, Rev. 0, DCF-CHG-01, Effective: 1/29/99 - Subcontractor Quality Evaluations - and CAO 94-1012 QAPD (Rev.2), Section 6

<table>
<thead>
<tr>
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</table>
| 1        | Verify the adequacy of RFETS implementing procedures with respect to the RFETS QAPjP. | Procedure found to adequately address RFETS QAPjP.  

**NOTE TO AUDITOR:** Focus on the RFETS evaluation of Canberra SQA.  

Also, verify the modification of INS-246 (Rev.1), QAPD Procedures Matrix (section 6), Software Requirements) to incorporate applicable RFETS & Canberra procedures.  

Re.: Task No.: 3  

Protected Procedure 1-155-ADM-09.10, Supplier Quality and Canberra procedures SQM-120, Mobil Software Configuration Management, and SQM-121, Mobil Software Configuration Verification.  

The applicable procedure(s) are listed for each item from section 6 of the CAO QAPD.

Prepared by: Pete V. Rodriguez  
Approved by: M. E. Bennington

*Indicate Results: Satisfactory (SAT), Unsatisfactory (UNSAT), Not Applicable (NA)
**CAO AUDIT CHECKLIST**

Organization Evaluated: Rocky Flats Environmental Technology Site (RFETS)  
Audit Number: CAO A-99-13

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| 2        | Verify the performance of a subcontractor evaluation of Canberra SQA and completion of the “SQA Implementation Evaluation Report” of Canberra in accordance with 1-J55-ADM-08.10. Examine the Subcontractor evaluation checklist for Canberra. Also, verify that the TWCP QA Officer & SQA Subject Matter Expert have performed a Canberra “SQA program adequacy review” / Evaluation Report. Re.: 1-J55-ADM-08.10, Section 6.2.2 and Task Nos.: 1 & 2 | *Reference other checklist*  
*Completed by P. Rodriguez*  
10/10/01 |
<table>
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| 3       | Verify that deficiencies identified during the audit/evaluation of Canberra, are documented on a Subcontractor Corrective Action Request (SCAR) form (Appendix 6). Ensure that sufficient information regarding the deficient condition and applicable requirements are provided. Also, verify that processing of the SCARs, are in accordance with the requirements of 6.4.2.  

Note: Corrective Action responses must address actions taken to correct the identified deficiency, action taken to prevent recurrence of similar deficiencies, and a scheduled date of completion of specified corrective actions.  
Re: 1-J55-ADM-08.10, Sections 6.3.2 [4] & 6.4.2 | Received SCAR No: 99-51-1, 99-51-2, and 99-51-3 and they appear to adequately address the deficient condition and applicable requirements.  
Each SCAR addresses actions taken to correct the identified deficiency, action taken to prevent recurrence of similar deficiencies, and a scheduled date of completion. | SAT |

Organization Evaluated: Rocky Flats Environmental Technology Site (RFETS)  
Audit Number: CAO A-99-13  
Revised 8/95
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<tr>
<td>4</td>
<td>Verify that an adequacy evaluation of Canberra’s NDA system at RFETS, per RMRS-QA-10.02 (Rev. 0), has been completed. Examine the surveillance report reflecting the adequacy of Canberra’s NDA system at RFETS.</td>
<td>Adequacy was verified during Software Quality Assurance limited scope at Canberra Industries LCS-034-99 performed March 9-10, 1999. 3 subcontractor CHRs were issued. Examined Canberra Industries: Mobile NDA System Software Configuration Control, Surveillance Number RMRS-99-150, MAR-009-99. Canberra NDA Operations listed for June 99 on RFETS TUR Work Management Assessment Schedule. Reviewed Transuranic (TRU) Waste Projects Management Assessment Report, March 1999.</td>
<td>SAT</td>
</tr>
</tbody>
</table>

Discuss future oversight activities of Canberra by RFETS, and Management Assessments of on-site activities.

Re.: RMRS-QA-10.02 -
Task No.: 4
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<td>5</td>
<td>Verify the revision or issuance of a DCF of 1-J55-ADM-08.10 to include provision for coordination, planning and performance of TWCP related subcontractor evaluations with the TWCP QA Officer.</td>
<td>Refer to other checklist completed by P. Rodriguez, Dec 10/11/1997</td>
<td></td>
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# CAO AUDIT CHECKLIST

Organization Evaluated: Rocky Flats Environmental Technology Site (RFETS)  
Audit Number: CAO A-99-13

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| 6       | Verify that the RFETS evaluation/audit of Canberra SQA encompassed the following CAO QAPD, Section 6 Software requirements:                                                                                           |                     | Refer to other checklist  
Signed by P. Rodrigues  
Wht 10/5/99 |
|         | • Inventory & Classification of Software  
• Software Control Plans  
• Software Development  
• Software Verification and Validation  
• Software Configuration Control, including Change Control  
• Software Operation and maintenance  
• Procured Software  
• Software Development and Life Cycle  
• Requirements Phase, Design, Implementation, Testing, Installation and Checkout, Operations and Maintenance Phases & Retirement Phase  
• Software Verification and Validation  
Re.: CAO-94-1012, QAPD, Section 6 |                     |          |
# AUDIT A-99-13

## PERSONNEL CONTACTED DURING THE AUDIT

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization and Department</th>
<th>Title</th>
<th>Evaluation Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frank Grady</td>
<td>RFETS/RMRS TRU Waste</td>
<td>Project Engineer</td>
<td>Canberra SQA</td>
</tr>
<tr>
<td></td>
<td>Project Office</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jerry O'Leary</td>
<td>RFETS/Waste Ops</td>
<td>Manager</td>
<td>Canberra SQA</td>
</tr>
<tr>
<td></td>
<td>TRU/HEM Projects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tony Guey</td>
<td>K-41 Procurement Quality</td>
<td>Lead Auditor</td>
<td></td>
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<td></td>
<td>Assurance</td>
<td></td>
<td>M</td>
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<tr>
<td>Sid Aries</td>
<td>SAIC/CMRS</td>
<td>SPA</td>
<td>SM</td>
</tr>
<tr>
<td></td>
<td>Consultant</td>
<td></td>
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CAO AUDIT CHECKLIST

Organization Evaluated: Rocky Flats Environmental Technology Site (RFETS)  
Audit Number: CAO A-99-13

Activities Evaluated: - RFETS Evaluation of Canberra Software Quality Assurance -  
Date of Evaluation: March 24 - 25, 1999
Controlling Documents: 1-J55-ADM-08.10, Rev. 0, DCF-CHG-01, Effective: 1/29/99 - Subcontractor Quality Evaluations - and CAO 94-1012 QAPD (Rev.2), Section 6

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| 1        | Verify the adequacy of RFETS implementing procedures with respect to the RFETS QAPjP.  
           | NOTE TO AUDITOR: Focus on the RFETS evaluation of Canberra SQA.  
           | Also, verify the modification of INS-246 (Rev.1), QAPD Procedures Matrix (section 6), Software Requirements) to incorporate applicable RFETS & Canberra procedures.  
           | Re.: Task No.: 3  
           | 1999-000387 | Procedure found to adequately address RFETS QAPjP. | SAT |

Prepared by: Pete V. Rodriguez  
Approved by: M. E. Bennington

*Indicate Results: Satisfactory (SAT), Unsatisfactory (UNSAT), Not Applicable (NA)
### CAO AUDIT CHECKLIST

Organization Evaluated: Rocky Flats Environmental Technology Site (RFETS)  
Audit Number: CAO A-99-13

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| 2        | Verify the performance of a subcontractor evaluation of Canberra SQA and completion of the “SQA Implementation Evaluation Report” of Canberra in accordance with 1-J55-ADM-08.10. Examine the Subcontractor evaluation checklist for Canberra.  
Also, verify that the TWCP QA Officer & SQA Subject Matter Expert have performed a Canberra SQA program adequacy review / Evaluation Report | Examined subcontractor software QA audit checklist, based on CAO 94-1012 QAPD Section 6.0  
Rev. 2 & NQA-2 Part 2.7  
1984  
K-HT 3/23/99 letter  
to Canberra (95-RF-0100)  
reports results of the  
3/9/99 audit of Canberra performed by RFETS, TWCP QA Officer, & SQA Subject Matter Expert  &  
KHT PQA Lead Auditor  
Adequacy - SAT  
Implementation - SAT  
However,  
MINOR CONDITIONS  
Effect = SAT  
Not affecting quality  
W/Minor Conditions |

Page 2 Of 6
### CAO AUDIT CHECKLIST

**Organization Evaluated:** Rocky Flats Environmental Technology Site (RFETS)  
**Audit Number:** CAO A-99-13

| Item No. | Characteristic(s)                                                                                                                                                                                                 | Objective Evidence                                                                 | *Results*
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------
| 3        | Verify that deficiencies identified during the audit/evaluation of Canberra, are documented on a Subcontractor Corrective Action Request (SCAR) form (Appendix 6). Ensure that sufficient information regarding the deficient condition and applicable requirements are provided. Also, verify that processing of the SCARs, are in accordance with the requirements of 6.4.2.  

*Note:* Corrective Action responses must address actions taken to correct the identified deficiency, action taken to prevent recurrence of similar deficiencies, and a scheduled date of completion of specified corrective actions.  

Re. : 1-J55-ADM-08.10, Sections 6.3.2 [4] & 6.4.2 |

- EXAMINED SCARS:
  - 99-5-1-1 w/expected completion of 5/1/99
  - 99-5-1-2 w/expected completion of 5/24/99 & also ran 99-51-3 for actions to prevent recurrence
  - 99-5-1-3 issued 6/1/99

  QA as a result of
  - Audit. LCS-034-99 (2+) performed 3/22/99 for deficiencies satisfactory ID & response approved by the TSEC QA officer on 3/22/99

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### CAO AUDIT CHECKLIST

**Organization Evaluated:** Rocky Flats Environmental Technology Site (RFETS)  
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| 4        | Verify that an adequacy evaluation of Canberra's NDA system at RFETS, per RMRS-QA-10.02 (Rev. 0), has been completed. Examine the surveillance report reflecting the adequacy of Canberra's NDA system at RFETS.  

*Discuss future oversight activities of Canberra by RFETS, and Management Assessments of on-site activities.*  

Re.: RMRS-QA-10.02 -  
- Task No.: 4 -  
1999-000387 | | |

---

Re. checklist completed  
by C. B. 995  
Oct 10/15/99  
SAT C.S.
## CAO AUDIT CHECKLIST

**OrganizationEvaluated:** Rocky Flats Environmental Technology Site (RFETS)  
**Audit Number:** CAO A-99-13

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| 5       | Verify the revision or issuance of a DCF of I-J55-ADM-08.10 to include provision for coordination, planning and performance of TWCP related subcontractor evaluations with the TWCP QA Officer. | Examined DCF #: CHG-03 of I-J55-ADM-08.10 Rev. 0  
9's 6.2.1 [2], 6.2.2 [3] & 6.3.1 [1] revisions issued to include provisions for TWCP QA Officer (Mark Castagnari) or designate to coordinate plan & participate w/ the subcontractor evaluations (of TWCP/ICWPP related subs.) | SAT      |

Re.: Task No.: 5  
1999-000387
<table>
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| 6       | Verify that the RFETS evaluation/audit of Canberra SQA encompassed the following CAO QAPD, Section 6 Software requirements:  
- Inventory & Classification of Software  
- Software Control Plans  
- Software Development  
- Software Verification and Validation  
- Software Configuration Control, including Change Control  
- Software Operation and maintenance  
- Procured Software  
- Software Development and Life Cycle  
- Requirements Phase, Design, Implementation, Testing, Installation and Checkout, Operations and Maintenance Phases & Retirement Phase  
- Software Verification and Validation  
Re.: CAO-94-1012, QAPD, Section 6 | Examined subcontracts:  
Evil. SQA Audit Checklist via CAO which did encompass QAPD  
sect. 6.0 fav. 2 neg. 2  
the overall program evil. indicated that Canberra's SQA program controlling the systems are as follows:  
Adherence: SAT  
Effectiveness: SAT  
Implementation: unsat, however minor condition not affecting quality of assay | SAT |
## CAO AUDIT CHECKLIST

Organization Evaluated: Rocky Flats Environmental Technology Site (RFETS)  
Audit Number: CAO A-99-13

Activities Evaluated: RFETS Waste Characterization/Transportation/Certification Programs:  
Date of Evaluation: March 23-25, 1999

SQA

Controlling Documents: Canberra Mobil Waste Assay Services; SQM-120; Mobil Software Configuration Management Dated 01/26

<table>
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<tr>
<td>SQA - 1</td>
<td>Verify that all software is placed under configuration control as its configuration item is received from Canberra for use in waste characterization activities. (SQM-120 para. 6.2.1.) [QA]</td>
<td>Verified that all Canberra Mobil Waste Assay Services software is under configuration control. Verified that the Lotus Notes Data Base software inventory includes all released software for the three assay system, IQ3, PN, and SGS. Reviewed the following: IQ3; #407J-Genie-PC MGAU V. 2.1CI and TRU-RADA-CMD-3 1.2. PN; TMU-NASSASS.CMD-2 V. 1.1, and # 439J-Genie PC V2.0A. SGS; 432Jgenre-PC-V2.2 and TMURADA+CMD-3 V 1.2</td>
<td>SAT</td>
</tr>
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<tr>
<td>SQA - 2</td>
<td>How are the received configuration items uniquely labeled (identified) for changes and for approval? (SQM-120 para. 6.2.1.) [Technical] Verify the labeling system: uniquely identifies each configuration item identifies changes to configuration items by revision or version identifier uniquely identifies each approved configuration of the revised software that is available for use. (SQM-120 para. 6.2.1.) [QA]</td>
<td>The diskettes and all the Documentation comes uniquely labeled from Meriden office of Canberra Industries. There is no labeling on site. See recommendation #1. Verified that the labeling system included unique identification, identification of changes to configuration items by revision and uniquely identifies each approved configuration of the revised software that is available for use. Reviewed IQ3; #407J-Genie-PC MGAU V. 2.1CI and TRU-RADA-CMD-3 1.2. PN; TMU-NASSASS.CMD-2 V. 1.1, and # 439J-Genie PC V2.0A, SGS; 432Jgenie-PC-V2.2 and TMURADA.CMD-3 V 1.2</td>
<td>SAT</td>
</tr>
<tr>
<td>SQA - 3</td>
<td>Verify that an inventory of all software is maintained, and includes the following information: the software name, version, classification (also called exemption status), operating environment, the operating area responsible for the software. (SQM-120 para. 6.2.2.) [QA] Who is responsible for maintaining the software inventory PM or QA Officer? Does it include the following elements? • Software name • Version • Classification • Operating Environment Operating area] (SQM-120 para. 6.2.2.) [Technical]</td>
<td>Using the following programs: IQ3; #407J-Genie-PC MGAU, V. 2.1CI and TRU-RADA-CMD-3 1.2. PN; TMU-NASSASS.CMD-2 V. 1.1, and # 439J-Genie PC V2.0A. SGS; 432J Genie-PC-V2.2 and TMURADA.CMD-3 V 1.2, verified that Software name, Version, Classification, Operating Environment were included in the inventory. After the SQA process is completed for a particular software item, the software inventory is maintained by the Canberra IT staff in Meriden and made available through Lotus Notes. The inventory is not changed onsite without approval. See recommendation #1. The elements identified in the procedure were included in the baseline list available on the Canberra Lotus Notes Database.</td>
<td>SAT</td>
</tr>
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## CAO AUDIT CHECKLIST

**Organization Evaluated:** Rocky Flats Environmental Technology Site (RFETS)  
**Audit Number:** CAO A-99-13

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</table>
| SQA - 4  | Verify that an inventory for each operating trailer and NDA system is maintained in the Waste Assay Documents database, under the heading "Software Inventory"  
Verify that copies of the configuration status are maintained in the Canberra Mobil Services administration trailer for review. (SQM-120 para. 6.2.2.) [QA] | Selected IQ3 trailer and verified that an inventory of NDA system waste Assay Documents software existed in the trailer on the computer.  
The IQ3 trailer is the administration trailer and a copy of the configuration status is maintained in the trailer. | SAT      |
| SQA - 5  | Verify that upon initial receipt of a software package but prior to installation, the NDA Operator enters the release label information of the software on the applicable Software Inventory. (SQM-120 para. 6.2.3.) [QA]  
How are the quality grading criteria of use for determining Not exempt "NQA" and Exempt "STD" classifications documented.  
• Engineering, Scientific, Testing, Data collection, Design Analysis, Operations activities, Safety significance  
(SQM-120 para. 6.2.3.) [Technical]  
If all NDA software are NQA why the above determination? (SQM-120 para. 6.2.4.1) [Technical] | No software packages are in this status i.e. received but not installed. All software has been installed, the inventory reflects the compliance with this step.  
There is no on-site grading, any QA grading is performed at the Meriden office and documented in the Model and System notebooks under the Baseline and Traceability document. See recommendation #1. | SAT      |
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<tr>
<td>SQA - 6</td>
<td>Initial receipt How is a &quot;certification activity&quot; defined differently from certifying the software? (SQM-120 para. 6.2.4.3 typo) [Technical]</td>
<td>There is no local software certification activity. Software is always approved at the Meriden office prior to being delivered to remote operations. See recommendation #1.</td>
<td>SAT</td>
</tr>
<tr>
<td>SQA - 7</td>
<td>After Certification What happens if the software is not certified? What happens after 6.4.6? (Installation Test and Release for Production Use); and during section 6.6? (Software problem reporting) (SQM-120 para. 6.2.5.) [Technical]</td>
<td>See SQA-6. See recommendation #1.</td>
<td>SAT</td>
</tr>
<tr>
<td></td>
<td>Verify that after a software item is certified as available for distribution, a Software Inventory Master File List is created for the new distribution and placed in document SQM-122. (SQM-120 para. 6.2.5.1) [QA]</td>
<td>Verified that a signature by the Director of QA Canberra is the certificating act. Reviewed Form SQM – 122 on screen and found the master file list had been created and the programs were identified.</td>
<td>SAT</td>
</tr>
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## CAO AUDIT CHECKLIST

**Organization Evaluated:** Rocky Flats Environmental Technology Site (RFETS)  
**Audit Number:** CAO A-99-13

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| SQA - 8 | Software Distribution and Control  
How is the software provided to the trailers? LAN, remotely, extra copies of the SW?  
(SQM-120 para. 6.3) [Technical]  
Determine how the Project Manager/QA Officer does the following: "It is the responsibility of the Project Manager/QA Officer to ensure that software verification and validation of software has been performed by Canberra before being placed into use for waste characterization."  
Verify that in cases where V & V is not done prior to the certification of software, the portions of software that have not been verified and validated are identified and controlled.  
(SQM-120 para. 6.3.1.) [QA] | The software arrives via electronic media and is installed with the diskettes provided following SQM -121 "Mobil Software Configuration Verification". No extra copies are made of the software since Canberra has duplicate storage at the Meriden office.  
No software packages are currently available on site for which the V&V has not been complete and certified. This para. Is being modified by a Response Document Library document. This was CDA. | SAT     |
| SQA - 9 | Verify that this test includes: that the program copied, migrated, or compiled properly on the production server or production server partition assuring that the program is operating as intended.  
Verify that this test is defined, documented, and approved using the request form.  
(SQM-120 para. 6.4) [QA]  
Is there any evidence that shows how the testing or prototyping is kept out of the production directory? (5th paragraph)  
(SQM-120 para. 6.4.3) [Technical] | Verified that the following programs copied, migrated, and compiled properly on the production server by reviewing the following test results files.  
IQ3 FILES.TXT  
IQ3 Results. Doc  
Gamma.Bat  
MGMA file. Doc.  
There is no prototyping or testing performed on the production machines. See recommendation #1. Control can be verified by following the authentication procedure described in SQM-121. | SAT     |
## CAO AUDIT CHECKLIST

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<tr>
<td>SQA - 10</td>
<td>What are minor changes to user definable software and how are they defined and documented? (3rd paragraph)? (SQM-120 para. 6.4.) [Technical]</td>
<td>The software is never changed on-site this is a Meridan activity only. See recommendation #1. Test problems were run FEB 2, 16,17, and 22. All after the installation of the modified software. Reviewed test problem results for IQ3 test report performed 2/16/99 including Gamma Spec., Gamma Waste Assay. Radioassay datasheets for Drums D88678 #2, #3 #4, #5, and #6. Verified that the test results are the basis for determining the software meets specified requirements.</td>
<td>SAT</td>
</tr>
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| SQA - 11 | In-Use tests  
How are the test problems defined by the NDA operating procedure prior to the software’s installation?  
Is there any objective evidence that shows how the tester is able to determine that the specified requirements are met?  
Where and how are these calibrations documented? (SQM-120 para. 6.5.) [Technical] | The main functional requirements such as Neutron and Gamma counting never change. Therefore “in-use” tests defined by the calibration process are an effective way to demonstrate acceptance.  
All changes to the software are tested and approved at the Meridan office. The changes are external requirements in nature (e.g., i/o) and are documented in the Model and System document. See recommendation #1.  
The other tests besides the daily “in-use” test was a recent Y2K check. The request Form was used to document the results. | SAT      |
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| SQA - 12 | Verify that a system has been implemented to: record, classify, analyze, track, and report software problems (in released versions) and the associated corrective actions. (SQM-120 para. 6.6) [QA]  
How are changes to software proposed, approved and implemented? How is it documented? (SQM-120 para. 6.6) [Technical] | This paragraph deleted and modified to reflect the field only reports software problems. CDA  
The Project Manager can request enhancements with the request form. The changes are not implemented or approved on-site, this is a Meriden function. See recommendation #1. | SAT      |
| SQA - 13 | Determine if any problems have been discovered in software or software results.  
If yes, verify that Project Manager/QA Officer determine the affect on previous use(s) and the need for corrective action (SQM-120 para. 6.6) [QA]  
What evidence is available that software errors are identified, evaluated, documented and corrected if needed? Who else is notified of any software errors? (SQM-120 para. 6.6) [Technical] | No problems in software identification at RFETS  
Cambrria Mobil services. The system is in place for reporting problems if necessary.  
The project Manager reports errors to the Meriden office with the request form. The changes are not implemented or approved on-site. See recommendation #1. | SAT      |
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<td>SQA - 14</td>
<td>When used, verify that the corrective action include:</td>
<td>None</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Problems are identified, evaluated, documented, and, if required, corrected;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Problems are assessed for their impact on past and present uses of the software;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Changes to software are in accordance with the software configuration management</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>requirements. Results are provided to the affected users along with any revised</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>software documentation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(SQM-120 para. 6.6) [QA]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQA - 15</td>
<td>Verify that controls have been established to authorize access to software that</td>
<td>Verified the computer systems in the trailers were screen saver password protected.</td>
<td>SAT</td>
</tr>
<tr>
<td></td>
<td>has been accepted.</td>
<td></td>
<td>SAT</td>
</tr>
<tr>
<td></td>
<td>Verify that installations of certified software on production systems is</td>
<td>Observed operators entering passwords to gain access to the production program.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>protected by password entry or keyed entry access.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(SQM-120 para. 6.6) [QA]</td>
<td></td>
<td></td>
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<td>SQA - 16</td>
<td>Verify that the following are maintained as QA Records:</td>
<td><strong>Objective Evidence</strong></td>
</tr>
<tr>
<td></td>
<td>Applicable Request Forms</td>
<td>Verified that the following records are being maintained:</td>
</tr>
<tr>
<td></td>
<td>Software Inventory Log</td>
<td>Applicable Request Forms (ELECTRONIC)</td>
</tr>
<tr>
<td></td>
<td>Software Configuration Verification Forms</td>
<td>Software Inventory Log (ELECTRONIC)</td>
</tr>
<tr>
<td></td>
<td>Any NCRs generated as a result or error or problem reporting.</td>
<td>Software Configuration Verification Forms (ELECTRONIC)</td>
</tr>
<tr>
<td></td>
<td>(SQM-120 para. 7.0) [QA]</td>
<td>Any NCR's generated as a result or error or problem reporting. Reviewed hard copies. Of NCR's.</td>
</tr>
<tr>
<td>SQA - 17</td>
<td>Verify that the Project Manager / QA Officer, Record Clerk, and software change requesters are trained to this procedures.</td>
<td><strong>Objective Evidence</strong></td>
</tr>
<tr>
<td></td>
<td>(SQM-120 para. 8.1) [QA]</td>
<td>Verified Craig Davison the Project Manager was trained to SQM 120.</td>
</tr>
</tbody>
</table>

*Results*  
SAT
**CAO AUDIT CHECKLIST**

Organization Evaluated: Rocky Flats Environmental Technology Site (RFETS)  
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Activities Evaluated: RFETS Waste Characterization/Transportation/Certification Programs SQA  
Date of Evaluation: March 23-25, 1999

Controlling Documents: Canberra Mobil Waste Assay Services; SQM-121: Mobil Software Configuration Verification, Dated 01/99  
Modified 03/03/99

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<td>SQA – 1</td>
<td>Verify that once each quarter, the Project Manager / QA Officer has verified the software models and versions on the waste characterization processes match those listed in the applicable Software Inventory Log. (SQM-121 para. 6.1) [QA]</td>
<td>This procedure was implemented on 2.5.99 no quarterly reports available. The process was observed during the audit.</td>
<td>SAT</td>
</tr>
</tbody>
</table>

Prepared by: Stephen Hans  
Approved by: M.E. Bennington  
*Indicate Results: Satisfactory (SAT), Unsatisfactory (UNSAT), Not Applicable (NA)
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| SQA - 2  | Verify that NQA classified software is verified on a system by system basis by comparing the actual files on the system to a master file list.  
(SQM-121 para. 6.1.1) [QA] | Observed at IQ3 trailer. Observed the process of comparing the actual files to the master file list. | SAT      |
| SQA - 3  | Verify that the Project Manager / QA Officer has created and used a Software Configuration Verification Form.  
(SQM-121 para. 6.1.2) [QA] | Observed the Software Configuration Verification Form on the computer.              | SAT      |
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| SQA - 4 | Verify that the Software Inventory Logs report indicates no disk errors of any kind.  
(SQM-121 para. 6.1.6) [QA] | Observed the operators in IQ3 trailer performing the verification and getting no errors. | SAT      |
| SQA - 5 | Verify that if any errors from any Software Inventory Log inspection are uncovered, the Project Manager / QA Officer has evaluated the errors. If the errors are found to be condition adverse to quality the Project Manager/QA Officer requests an immediate Stop Work.  
(SQM-121 para. 6.1.9.6) [QA] | None found as of this audit.                                                       | N/A      |
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| SQA – 6  | Verify that the Project Manager / QA Officer, NDA Operator and any other employee designated by the Project Manager / QA Officer to perform this procedure have been trained to this procedure.  
(SQM-121 para. 7.0) [QA] | Reviewed training file for Doug Cramer operator of IQ3 system.                       | SAT                                 |
| SQA – 7  | Verify that the Software Configuration Verification Form is maintained as a QA Record.  
(SQM-121 para. 8.0) [QA] | Observed on screen for IQ3 trailer. Dual storage is done by Camberra backup.            | SAT                                 |