



United States Government

Department of Energy

memorandum

Carlsbad Field Office
Carlsbad, New Mexico 88221

DATE: July 2, 2001

REPLY TO
ATTN OF: CBFO:QA:SAV:VW:01-1158:UFC:2300SUBJECT: Audit Report A-01-12, Rocky Flats Environmental Technology Site (RFETS)
Characterization of Waste Audit


to: Joseph Legare, Assistant Manger for Environment and Compliance

The Carlsbad Field Office (CBFO) conducted an audit of the Rocky Flats Environmental Technology Site (RFETS) waste characterization activities. The audit was conducted on May 14-18, 2001. The audit team concluded that the RFETS technical and quality assurance programs for these activities were adequate in accordance with the WIPP Hazardous Waste Facility Permit, the CBFO QAPD and the CBFO WAC. The audit team also concluded that the RFETS procedures were being satisfactorily implemented and the evaluated processes were effective.

As a result of the audit, four (4) CBFO Corrective Action Reports (CARs) were forwarded under separate cover.

Five (5) Recommendations were identified during the audit. The Recommendations do not require a response.

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



Samuel A. Vega
Quality Assurance Manager

Attachment

010704



Joseph Legare

-2-

July 2, 2001

cc: w/attachments
L. Chism, CBFO
K. Watson, CBFO
B. Bennington, CBFO
J. Jefferies, RFFO
M. Eagle, EPA
S. Monroe, EPA
S. Zappe, NMED
B. Walker, EEG
D. Winters, DNFSB
C. Ferrera, RFETS
J. O'Leary, RFETS
L. Steven, WTS
M. Gerle, WTS
T. Bowden, CTAC
C. Riggs, CTAC



U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

AUDIT REPORT

OF THE

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

GOLDEN, COLORADO

AUDIT NUMBER A-01-12

May 14-18, 2001

AUDIT REPORT OF WASTE CHARACTERIZATION ACTIVITIES



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

Date: 06/04/01

Approved By: Samuel A. Vega
Samuel A. Vega
CBFO QA Manager

Date: 6/27/01

1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Audit A-01-12 was conducted to evaluate the adequacy, implementation, and effectiveness of the Rocky Flats Environmental Technology Site (RFETS) transuranic (TRU) waste characterization activities relative to the requirements detailed in the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HFWP) and the CBFO Quality Assurance Program Document (QAPD).

The scope of the audit included three new Nondestructive Assay (NDA) systems: a Super High Efficiency Neutron Coincidence (SuperHENC) Counter, a Tomographic Gamma Scanner (TGS), and a Passive Active Drum Counter (PADC). Real-Time Radiography (RTR) and the Visual Examination (VE) process were evaluated. The supporting software for the new NDA systems and electronic signatures were also examined.

The audit was conducted at the RFETS facility May 14-18, 2001. The audit team concluded that the overall adequacy of the RFETS technical and Quality Assurance (QA) programs, as applicable to audited activities, was satisfactory in meeting requirements. The audit team also concluded that the defined QA and technical programs for these activities were being implemented in accordance with the RFETS Quality Assurance Project Plan (QAPjP) and its implementing procedures and that the processes were effective.

The audit team identified seven conditions adverse to quality, resulting in the issuance of four Corrective Action Reports (CARs). The CARs concerned: the determination and reporting of U-234 alpha activity; NDA systems without Performance Demonstration Program (PDP) results; visual examination videotape that did not provide a complete quality record; and instructions containing quality effecting activities not controlled. Six deficiencies, isolated in nature and requiring only remedial corrective actions, were Corrected During the Audit (CDA). Five Recommendations were also identified. The CARs, CDAs, and Recommendations are described in Section 6.0.

2.0 SCOPE AND PURPOSE

2.1 Scope

The audit team evaluated the adequacy, implementation, and effectiveness of the RFETS TRU waste characterization activities.

The following elements were evaluated:

Quality Assurance

- Quality Improvement
- Personnel Qualification and Training
- Documents and Records

Technical

NDA – Passive Active Drum Counter, Building 569
NDA – SuperHENC Standard Waste Box (SWB) Counter
NDA – Drum Tomographic Gamma Scanner (SGS), Building 569
Real Time Radiography (RTR)
Visual Examination (VE)
Electronic Signatures
WEMS-WWIS Interface

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

Waste Isolation Pilot Plant Hazardous Waste Facility Permit, October 27, 1999

Quality Assurance Program Document, CAO-94-1012, Revision 3, November 1999

Waste Acceptance Criteria for the Waste Isolation Pilot Plant, DOE/WIPP-069

RFETS Quality Assurance Project Plan for the Transuranic Waste Characterization Program, 95-QAPjP-0050, Revision 5, April 16, 2001 ,

RFETS Transuranic Waste Management Manual, 1-MAN-008-WM-001, Revision 4, August 25, 2000

Related RFETS technical and quality assurance implementing procedures

2.2 Purpose

Audit A-01-12 was conducted to assess the adequacy, implementation, and effectiveness of RFETS waste characterization and quality assurance activities.

3.0 AUDIT TEAM AND OBSERVERS

AUDITORS/TECHNICAL SPECIALISTS

Sam Vega	Quality Assurance Manager, CBFO
Charlie Riggs	Audit Team Leader, CTAC
Steve Davis	Auditor, CTAC
Jim Schuetz	Auditor, CTAC
Porf Martinez	Auditor-in-Training, CTAC
Patrick Kelly	Technical Specialist, CTAC
Ken Coop	Technical Specialist, CTAC

INSPECTORS

Scott Monroe	EPA
Ed Feltcorn	EPA
Ray Wood	EPA Contractor
Howard Finkel	EPA Contractor
Dave Stuenkel	EPA Contractor
Don Hammer	EPA Contractor

OBSERVER

Jim Channell	Environmental Evaluation Group
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4.0 AUDIT PARTICIPANTS

RFETS individuals contacted during the audit process are identified in Attachment 1. A pre-audit meeting was held at RFETS Building 460 on May 14, 2001. A daily meeting was held with RFETS management and staff to discuss the previous day's issues and potential deficiencies. The audit was concluded with a post-audit meeting held at RFETS Building 460 on May 18, 2001

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy, Implementation, and Effectiveness

The audit team concluded that the applicable RFETS TRU waste characterization activities, as described in the associated RFETS implementing procedures are adequate, implemented, and effective. Attachment 2 contains a Summary Table of Audit Results. Audit activities, including objective evidence reviewed, are described below and in CBFO checklists and/or Objective Evidence Reviewed forms maintained as QA records. Attachment 3 contains a list of RFETS procedures included in the audit.

5.2 Quality Assurance Activities

The quality assurance elements; Quality Improvement, Personnel Qualification and Training, and Documents and Records, as they related to the new NDA systems, RTR, and VE, were evaluated.

Overall, the quality assurance activities evaluated were determined to be adequate, satisfactorily implemented, and effective.

5.3 Technical Activities

The following sections describe the technical activities reviewed during the audit.

5.3.1 NDA

SuperHENC

The audit team evaluated procedures and other documents pertaining to the SuperHENC neutron assay counter and the associated SuperHENC Gamma Energy Analysis System (SGEAS) gamma-ray instrument. During the audit, the team observed the operation of both instruments and reviewed the available batch data reports. Two recommendations regarding background measurements for the SGEAS and additional Total Measurement Uncertainty (TMU) measurements for the S-HENC were made (see Recommendations 4 and 5). The process for handling the confirmation of isotopics needs to be resolved by CBFO and EPA, and the resolution communicated to RFETS for implementation. The S-HENC/SGEAS results do not currently include the determination and documentation of the ^{234}U activity (see CAR 01-034) and has not yet been included in the PDP (see CAR 01-035). A deficiency regarding the control of a work instruction (NDA-29) was identified and included in a CAR (see CDA2 and CAR 01-037).

Overall, the SuperHENC/SGEAS procedures and processes were determined to be adequate, satisfactorily implemented, and effective.

PADC

The audit team evaluated the RFETS PADC located in Building 569. This evaluation consisted of reviewing applicable site procedures, interviewing RFETS and contractor personnel, observing practices, and examining records. This system is used for assaying TRU wastes packaged in 55 gallon (208 liter) drums containing between 0.5 and 176 g of weapons grade plutonium in the active and passive modes. The instrument calibration is not Item Description Code (IDC) specific, but instead keys on the observed sample-specific absorber/moderator index (ABS/MOD Index) for the active mode and the moderator index (MOD Index) for the passive mode. The following items were evaluated:

- operability and condition of the equipment
- instrument calibration and traceability of the calibration sources
- applicability of calibration to the waste type and the radionuclide content
- implementation and effectiveness of the instrument/measurement controls
- verification that RFETS procedures are being implemented
- completed data packages
- data storage and retrievability

Drum log sheets in the data report reviewed had doodles and improper corrections (see CDA 6).

Overall, the PADDC was determined to be adequate, satisfactorily implemented, and effective.

TGS

The audit team evaluated the RFETS Tomographic Gamma Scanner (TGS) located in Building 569. This evaluation consisted of reviewing applicable site procedures, interviewing RFETS and contractor personnel, observing practices, and examining records. This system is used for assaying TRU waste of a combustible matrix (IDCs 330, 331, 335, 336, 337, 338, 342 & 376) packaged in 55 gallon drums containing between 0.25 and 148 grams of weapons grade plutonium (equivalent to between 0.23 and 139 grams of Pu-239). The following were evaluated:

- operability and condition of the equipment
- instrument calibration and traceability of the calibration sources
- applicability of calibration to the waste type and the radionuclide content
- implementation and effectiveness of the instrument/measurement controls
- verification that RFETS procedures are being implemented
- completed data packages
- data storage and retrievability

Two recommendations regarding the use of default (stream) isotopics and a modification of the data form to reflect that background checks are being made (see Recommendations 1 and 2). All the TMU requirements cited in the WAC had not been adequately documented (see CDA 1). Work instructions containing quality affecting activities are not being processed as controlled documents (see CAR 01-37).

Overall, the TGS was determined to be adequate, satisfactorily implemented, and effective.

5.3.2 Software

The audit team evaluated the TGS, SuperHENC, and PADDC Software procurement, configuration control, the verification and validation, the computer security, and the access controls. The review of NDA software determined that software procurement, inventory, change control, computer security, verification and validation, installation and checkout, and access control practices were properly implemented for Compliance Decision (CD) software. However, some work steps involved with NDA examination and computer function were detailed in "Work Instructions" as opposed to being formalized in approved and controlled procedures (see CAR 01-037). The software inventory list and configuration management log were not updated (see CDA 3 and CDA 5). The audit team concluded that RFETS adequately procures and controls NDA Software. As a result, the RFETS software quality assurance program is concluded to

be adequate, satisfactorily implemented, and effective in the areas of procurement and software configuration control and lifecycle documentation.

5.3.3 Radiography

The audit team observed RTR activities in Building 664 and reviewed data packages and tapes from buildings 664 and 569. The audit team noted that RTR operators were not consistently reporting fill percentage (see CDA 4). The audit team recommends that a list be developed of items that are incompatible with the backfill, seal, and panel closure materials at WIPP (see Recommendation 3).

Overall, the Radiography process was determined to be adequate, satisfactorily implemented, and effective.

5.3.4 Visual Examination

The audit team observed videotapes and reviewed VE data packages of the Visual Examination activities performed in Building 776.

The videotapes of the VE activities did not consistently provide a complete quality record (see CAR 01-036). Items resulting from inattention to detail such as recording a weight as 7.62 Kg instead of 7.60 Kg were also noted (see CDA 4). The audit team recommended that a list be developed to reflect the items that are incompatible with the backfill, seal, and panel closure materials at WIPP (see Recommendation 3).

Overall, Visual Examination activities were determined to be adequate, marginally implemented, and marginally effective.

6.0 CORRECTIVE ACTIONS and RECOMMENDATIONS

6.1 Corrective Action Reports

6.1.1 CBFO CAR 01- 034

RFETS is not determining or reporting the required U-234 activity.

6.1.2 CBFO CAR 01- 035

- The Super High Efficiency Neutron Coincidence (SuperHENC) Counter Mobile Assay System PDP has not been performed.
- PDP results have not been received for the Building 569 Tomographic Gamma Scanner.

6.1.3 CBFO CAR 01- 036

The video taping of visual examination (VE) activities does not consistently provide a complete quality record. Examples of activities that are not included:

- The inside of the drum once items are removed
- The placement of items on the scale
- The liner type and closure
- An indication of percent fill
- The bottom of drum for liquids
- The observation of check weight ID's and calibrations, and the scale ID and calibrations

6.1.4 CBFO CAR 01- 037

During the audit teams review of the TGS NDA system located in building 569. An uncontrolled copy of the "Trouble Shooting Guide" used to make adjustments to the TGS instrument as directed by procedure PRO-1006-TGS-569-01, Rev 1 was observed. TGS personnel need to maintain a controlled copy of the trouble shooting guide with the equipment.

Instruction NDA-29, "Instructions for conducting Independent Technical Review (ITR) of SuperHENC/SGEAS Data is a quality effecting document and is not being processed as a controlled document.

IPAN and FRAM data, used in isotopic analysis, is transferred between computer hardware platforms, using a floppy diskette. Steps for this transfer are detailed in Work Instruction NDA-34 as opposed to being included in a controlled procedure as required for quality affecting work and calculations.

6.2 Deficiencies Corrected During the Audit

A deficiency Corrected During the Audit (CDA) is an isolated deficiency that does not require a root cause determination or actions to preclude recurrence, and correction of the deficiency was verified prior to the end of the audit.

CDA 1

The TMU for the B569 TGS is not adequately documented to show that all TMU requirements cited in WAC Rev 7 have been addressed. To fully identify all required TMU elements requires a combination of 3 documents and an oral presentation from RFETS Technical personnel.

All the necessary information has been combined into one document (569-TGS-04, Rev 1, *Calibration and Qualification Report for the Determination of PY-239 and*

Combustible Waste Packaged in 55 Gallon Drums Using the ANTECH TGS Drum Counter).

CDA 2

RFETS is making changes to a number of documents during the audit that may not be completed prior to the end of the audit. These changes are being made to clarify or add details to address deficiencies identified by the audit team during the audit.

Although Instruction NDA-29 was revised for technical content, this procedure is also listed as part of CBFO CAR 01-037. Super High Efficiency Neutron Counter Minimum Detectable Concentration Report, Rev. 0, May 9, 2001 was revised to Rev. 2.

CDA 3

The inventory list and configuration management log is not being maintained up-to-date with all information concerning software and lifecycle documentation versions.

NDA Mission Critical Software Inventory was up-dated and approved. The NDA Baseline Document was also up-dated.

CDA 4

The audit team identified instances of inattention to detail. Examples include:

- Drum #68384 item #2 was weighed as 7.6 Kg, but the log shows 7.62 Kg. The ITR didn't catch this error
- The Drum Log for drum #94680 had strikeouts and an obliterated entry that was not explained on the sheet. (Batch VE-2001-001, pg 6)
- Drum #94354 report stated percent fill was 30%, but the RTR operator never identified the percent fill on tape
- The Visual Examination Expert (VEE) did not tell the staff to do rechecks or provide other useful guidance

The following actions were taken by RFETS:

- The drum log was corrected to reflect the proper weight.
- An explanation was added to the drum log for the strikeouts and the obliteration.
- A memo was issued by the SPQAO directing the RTR operator to identify fill percentage each time and for the VEE to be more proactive in providing guidance.

CDA 5

The software inventory list and configuration management log have instances where the property numbers and software versions identified in the field do not match those appearing on the documents.

The NDA Mission Critical Software Inventory was up-dated and approved. The NDA Baseline Document was also up-dated.

CDA 6

During the review of a batch data report for the PADDC, the audit team found two instances where the drum log sheets had drawings on one of the sheets and the other had information scratched out.

The following has been added to the batch reports, "This log sheet is not a WIPP Record; it is being provided only for information. The original of this log sheet will be sent to Site Records in accordance with procedure 1-V41-RM-001. The project level validator will dispose of this document."

6.3 Recommendations

A Recommendation is a suggestion that is directed toward identifying opportunities for improvement and enhancing methods of implementing requirements.

Recommendation 1

The PCFRAM report sheet contained in the data package indicates that the isotopic distribution data was derived by PCFRAM measurement. There are instances where default (stream) isotopics are used and the report sheet still indicates that isotopics come from PCFRAM. The audit team recommends that the report sheet be changed to indicate the isotopics were default values. The Batch Narrative indicates that stream isotopics were used, which conflicts with the report sheet.

Recommendation 2

Procedure PRO-1006-TGS-569-01, *Setup and Calibration of Building 569 Drum Tomographic Gamma Scanner (TGS)* contains Appendix 1, TGS Daily Measurement Control Record. This form does not mention that the background was checked. The procedure specifies that the background is required to be checked. The audit team verified that NDA personnel do check the background, but the results are not documented. The audit team recommends that the form be modified to reflect this check.

Recommendation 3

Section 8.5 [1] of procedure 4-H80-776-ASRF-007, *Visual Verification for Confirmation of RTR* states, "IF any of the following prohibited items are found: ...Waste incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials, or other waste. This is verified by confirmation of the correct IDC and the TRUCON Code...."

The audit team recommends that a list be developed of items that are incompatible with WIPP items and that appropriate training and guidance be provided. This list should be made available to both RTR operators and VEEs.

Recommendation 4

The audit team recommends that periodic background measurements be performed on the SGEAS instrument to verify that interfering Pu sources are not present in or near the instrument.

Recommendation 5

The audit team recommends that additional TMU measurements be performed as new IDC's are qualified for assay on the SuperHENC, using Pu sources with approximately equal masses to verify that the current estimates are applicable to the new waste matrices.

7.0 LIST OF ATTACHMENTS

Attachment 1: Personnel Contacted During the Audit

Attachment 2: Summary Table of Audit Results

Attachment 3: Table of Audited RFETS Implementing Procedures

PERSONNEL CONTACTED DURING THE AUDIT

RFETS PERSONNEL CONTACTED DURING AUDIT A-01-12				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Adkins, Richard	KH; B440 RCT		X	
Ailes, Sid	TWCP/SAIC; SQA	X	X	X
Ater, Ed	TRU/MSQA; TRU Project Engineer	X		X
Ayala, Roberto	RFCSS; NDT		X	
Ballenger, R. J.	TRU Program; Manager Residues, Audit Program	X		X
BeHarisan, James A.	NDA; SME		X	
Bradford, Jeff	KH; Measurements Mgr	X		X
Burbank, G.	KH/NDT		X	
Carson, Pete	North Wind; TRU Program	X	X	
Chavez, Betty	LATA/NDT; ASNT Level III		X	
Clapham, Martin	RFETS-Measurements; Physicist	X	X	
Corlett, C. D.	Kh/Measurements; NDA Project Support	X	X	X
D'Amico, Eric	TRU Program; Environmental Scientist		X	X
Davis, Robert E.	MS QA Manager			X
Donohoue, T. P.	KH/Measurements; NDA Tech Sup	X	X	
Dreher, David	SSOC; Mgr NDA OPS	X	X	X
Durel, M	KH/Measurements; Mgr Prot Tech Spt	X	X	X
Dye, Art	KH; NDA OPS Supp Mgr	X		X

RFETS PERSONNEL CONTACTED DURING AUDIT A-01-12				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Eschenbaum, R. A.	TRU Program; WIPP Audit Lead	X		X
Estrada, Luis	NDA; SME		X	
Ferguson, Jim	GTSD/TRU Project; Engineer	X	X	X
Ferrera, Carol	KH TWCP QAO	X	X	X
Fisher, John	NDA;SME		X	
Fox, Wayne	LANL/KH; Observer	X	X	X
Franco, Johnna	KH/MSMTS; Nuclear Engineer	X	X	X
Gillespie, Doyle	KH Quality Program; Sr Mgmt Integrater	X		
Goade, Dan	TRU Waste Programs		X	
Grady, Frank	RMRS/TRU Waste Projects; TRU Project Engineer	X	X	X
Green, Rick	MS-NDA; Operator		X	
Jennings, Mike	KH/TRU Programs; MGR Characterization and Shipping	X	X	X
Kirschenmann, Harley	SMQA; Staff Engineer	X	X	X
Klanecky, Michael	KH/QP; QA Engineer			X
Lawson, Mark	KH/BSI; B440 RCTTS	X	X	
Legare, Joe	RFFO; Assistant Manager	X		
McGavin, Andrew	Source One; Manager, Document Control/Procedures		X	
McInroy, Larry	SAIC/NDA; SQA Coordinator	X	X	

RFETS PERSONNEL CONTACTED DURING AUDIT A-01-12				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Menlove, Howard	LANL; Los Alamos Fellow	X	X	
Morse, Joan	Waste Systems; Sys Analyst		X	
O'Leary, Jerry	KH/TRU Waste Project Manager	X		X
Pace, Tony	KH/Procurement; e-Procurement Lead		X	
Pall, W. E.	NDA; SME		X	
Pigeon, Paul	Material Stewardship/ Training Programs; TWCP Training Officer	X	X	X
Powell, Mark	BNFL; Manager QA and Safety	X	X	X
Robbins, Elver	DOE/RFFO/QPD	X		
Robledo, Ron	CTS/RMRS; Environmental Engineer		X	
Sendelweck, Vivian	TRU Programs; AK Engineer	X		X
Simpson, Alan	BNFL Inst; Physicist		X	X
Smart, Kim	KH/IRM; Manager		X	
Stewart, Judith	NDA QA; QA/QC Engineer	X	X	X
Tressell, John	MSQA; TRU Waste QA, PQAQO Alternate	X		
Tyler, Reg	DOE/RFFO			X
Wolfe, Gary	Source One; Mgr		X	
Worthy, Jim	Procurement/PEQA; Procurement QA		X	
Xuan, Lam	DOE/RFFO/ERWM; WIPP	X	X	

RFETS PERSONNEL CONTACTED DURING AUDIT A-01-12				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
	Coordinator			
Zodrow, Charles	ETP IRM; Apps Devl		X	

Summary Table of Audit Results

Documents	Concern Classification				QA Evaluation		Technical
	CARs	CDAs	Obs	Rec	Adequacy	Implementation	Effectiveness
Activity							
Radiography				3	A	S	E
Visual Examination	01-036	4			A	M	M
PADC 569		6			A	S	E
SuperHENC	01-034 01-035	2		4, 5	A	S	E
Drum TGS 569		1		1, 2	A	S	E
Software	01-037	3, 5			A	S	E
Electronic Signatures					A	S	E
TOTALS	4	6	0	5	A	S	E

Definitions

E = Effective

S = Satisfactory

I = Indeterminate

M=Marginal

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-01-12		
No.	Procedure Number	Title
1.	KH-NDA2001-QUAL-569TGS04 Rev 0	Calibration and Qualification Report for the Determination of Plutonium-239 in Combustible Waste Packaged in 55-Gallon Drums using the ANTECH TGS Drum Counter 569TGS04
2.	PRO-845-NDA-008, Rev 1	Data Review, Verification and Validation for NDA Measurement Systems
3.	PRO-1006-TGS-569-01, Rev 1	Setup and Calibration of Building 569 Drum Tomographic Gamma Scanner (TGS)
4.	3-MAN-006-NDA-1000, Rev 0	NDA Calibration and Validation Program Manual
5.	00-NDA-TGS-003, Rev 0	Qualification Plan for the 569TGS04 Tomographic Gamma Scanner (TGS) Building 569
6.	Unnumbered	Super High Efficiency Neutron Counter Calibration and Validation Plan, Instrument Control Number 984SHENC01, October 16, 1999
7.	Unnumbered	Building 569 Passive/Active Drum Counter Calibration and Validation Plan, Instrument Control Number 569PADC001, Rev 1 August 26, 1999
8.	Unnumbered	Calibration and Qualification Report Package for the SuperHENC Mobile Assay Trailer Instrument Identification Number: 440SHENC01, prepared January 22, 2001
9.	Unnumbered	Calibration and Qualification Report Package for Building 569 Passive/Active Drum Counter Instrument Identification Number: 569PADC01, prepared January 4, 2001
10.	PRO-666-PADC569, R 1	Operating Building 569 Passive/Active Drum Counter
11.	PRO-1092-FRAM-569, R1	Operating Building 569 FRAM Gamma Spectroscopy System
12.	PRO-1007-TGS-569-02, R0	Operating Building 569 Drum Tomographic Gamma Scanner (TGS)
13.	PRO-957-SuperHENC, R3	Operating the Super High Efficiency Neutron Coincidence (SuperHENC) Counter Mobile Assay System
14.	BII-5111-OPM-001, R2	Operating Procedure Manual
15.	BII-5111-FFTP-001, R0	RFETS-Gamma Spectroscopy Measurement System for the Super-HENC, Factory Functionality Test Plan
16.	Unnumbered	RFETS-Gamma Spectroscopy Measurement System for the Mobile Standard Waste Box Counter-Super-HENC, Software Lifecycle Documentation, dated January 19, 2001
17.	BII-5103-SDD-001, R1	RFETS 569 IPAN Drum System, Software Definition Document, December 15, 2000
18.	BII-5103-SOMP-001, R1	RFETS 569 IPAN Drum System, System Operation and Maintenance Procedures for the RFETS 569 PADC System, December 22, 2000
19.	BII-5103-SVVD-001, R3	RFETS 569 IPAN Drum System, Software Verification and Validation Description for RFETS 569 PADC, December 2000
20.	BII-5103-SBS-01, Issue 2	RFETS 569 IPAN Drum System, Software Build Specification, December 20, 2000
21.	BII-5103-SQAD-001, R0	RFETS 569 IPAN Drum System, Software Quality Assurance Description, December 20, 2000
22.	BII-5103-SRN-004	RFETS 569 IPAN Drum System, Software Release Note, version 2.67, January 17, 2001
23.	BII-5103-SCN-09	RFETS 569 IPAN Drum System, Software Change Note, version 2.67, December 28, 2000
24.	BII-5103-MTN-09	RFETS 569 IPAN Drum System, Module Test Note, version 2.67, December 28, 2000

RFETS PROCEDURES AUDITED FOR A-01-12

No.	Procedure Number	Title
25.	Unnumbered	Kaiser Hill NDA System Software Change request for SuperHENC SGEAS (System Set-up), SCR No. 01-010 HENC, version 2.66, January 23, 2001
26.	Unnumbered	Kaiser Hill NDA System Software Change request for SuperHENC SGEAS (System Set-up), SCR No. 01-025 HENC, version 2.67, February 20, 2001
27.	TWCP-QP-1.1-004, App A.	Verification Log for SuperHENC 1.01 Test, approval date: July 26, 2000
28.	Unnumbered	Calibration and Qualification Report Package for the SuperHENC Mobile Assay Trailer, approval date: January 23, 2001.
29.	Unnumbered	Kaiser Hill NDA System Software Change Request for SuperHENC (Software change), SCR No. 01-013 HENC, version 1.03, February 20, 2001
30.	5-NDT-TC-1A, R1	Training, Qualification, and Certification of Nondestructive Personnel
31.	4-I19-NDT-00569, R5	Real-Time Radiography Testing of Transuranic & Low Level Waste
32.	4-W30-NDT-00664, R4	Real-Time Radiography Testing of Transuranic & Low Level Waste in Building 664
33.	4-H80-776-ASRF-007, R4	Visual Examination for the Confirmation of RTR
34.	Unnumbered	569 TGS Compact Disc, includes ARC TGS V1.1 LACP 00285, Master Analysis Software Quality Assurance (SQA), PC FRAM Documentation, TGS Fit And TGS Mat.
35.	Unnumbered	ANTECH MasterScan Project Log, ANTECH Quality Control Document for TGS Software
36.	PRO-548-SSOC-SQA	Software Management for SSOC Nondestructive Assay Systems
37.	4-K47-WEM-WP-1210	WEMS Offsite Shipping Module
38.	PRO-731-MC-002, R2	NDA Measurement Control Program
39.	PLAN-MSQ.CMSQ-001, R0	Matrix-Specific Qualification Program Plan
40.	PRO-697-MLC-00013, R0	Preparation and Certification of Nondestructive Assay Standards and Sources