

United States Government

Department of Energy

memorandum

Carlsbad Area Office
Carlsbad, New Mexico 88221

DATE: March 20, 1998 *Received*

REPLY TO
ATTN OF: CAO:NTP:RAS 98-0645 UFC 2300

SUBJECT: Carlsbad Area Office (CAO) Audit Report A-98-05 Idaho National Environmental and Engineering Laboratory (INEEL) TRU Waste Characterization, Certification, and Transportation Program

TO:

Lori Fritz, ID

The CAO conducted an audit of your Quality Assurance (QA) Program for TRU Waste Characterization, Transportation, and Certification at INEEL on February 23-26, 1998.

The audit team concluded that the INEEL technical and QA programs were adequate in the flow down of requirements from the QAPD, QAPP, WAC, and TRAMPAC into implementing procedures. Except for the areas noted in the associated CARs, the audit team determined that the INEEL QA Program was satisfactorily implemented and that the INEEL technical program areas were effective.

As a result of this audit, eight CARs were issued and have been transmitted to INEEL under separate letter. Fifteen observations and eleven recommendations were also identified. Observations 2, 12, and 15 require written responses. With regard to Observation 2, the CAO requires successful demonstration of WWIS implementation prior to granting site certification. INEEL is also required to submit to CAO additional information in the area of management assessment for evaluation as committed to during this audit.

If you have any questions or comments concerning this report, please contact Butch Stroud at (505) 234-7483.



Don Watkins
Manager
National TRU Program

Attachment



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Lori Fritz

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March 20, 1998

cc w/attachment:

K. Hunter, CAO

M. McFadden, CAO

R. Brown, CAO

L. Chism, CAO

B. Stroud, CAO

G. Beausoleil, ID

J. Wells, Id

M. Eagle, EPA

K. Rogers, EPA

✓ S. Zappe, NMED

J.R. Stroble, WID

MM

U.S. DEPARTMENT OF ENERGY
CARLSBAD AREA OFFICE

AUDIT REPORT

OF THE

IDAHO NATIONAL ENVIRONMENTAL & ENGINEERING LABORATORY

IDAHO FALLS, IDAHO

AUDIT NUMBER A-98-05

FEBRUARY 23-26, 1998

TRU WASTE CHARACTERIZATION, CERTIFICATION, AND
TRANSPORTATION



Prepared By: *Steven D. Calvert*
Steven D. Calvert
Audit Team Leader

Date: 3/17/98

Approved By: *R. Dennis Brown*
for R. Dennis Brown
CAO QA Manager

Date: 3/19/98

Approved By: *Robert A. Stroud*
Robert A. Stroud
CAO Waste Certification Manager

Date: 3/19/98

1.0 EXECUTIVE SUMMARY

Carlsbad Area Office (CAO) Audit A-98-05 was conducted to evaluate the adequacy, implementation, and effectiveness of Idaho National Environmental & Engineering Laboratory (INEEL) Transuranic (TRU) Waste Characterization, Transportation, and Certification activities.

The audit was conducted at the INEEL facility February 23 through 26, 1998. The audit team concluded that, the INEEL technical and Quality Assurance procedures were adequate relative to the flow down of requirements from the CAO Quality Assurance Program Document (QAPD); Quality Assurance Program Plan (QAPP); Waste Acceptance Criteria (WAC); and TRUPACT-II Authorized Methods for Payload Control (TRAMPAC).

Except for the deficiencies noted in this report and the indeterminate management assessment area that could not be fully evaluated, the audit team concluded that the defined QA Program was being satisfactorily implemented in accordance with the INEEL Quality Assurance Project Plan (QAPjP) and implementing procedures. The INEEL technical areas evaluated by the audit team were determined to be implemented and effective.

The audit team identified eight conditions adverse to quality resulting in the issuance of eight CARs that require corrective action in the areas of grading, procurement, assessments, software control, records keeping, chain of custody, and visual examination. Fourteen isolated deficiencies requiring only remedial corrective actions were corrected during the audit (CDAs). Eleven recommendations are being offered for management action and consideration. Fifteen observations were identified. In addition, the management assessment process was concluded to be indeterminate at this time. The audit team noted four exemplary practices being performed by INEEL personnel. CARs, CDAs, Observations, Recommendations, and Exemplary Practices are described in Section 6.0 of this report.

2.0 SCOPE

The audit team evaluated the adequacy, implementation, and effectiveness of technical and quality assurance processes related to the INEEL TRU Waste Characterization, Certification, and Transportation activities.

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

- Organization
- QA Program Implementation

- Personnel Qualification and Training
- Quality Improvement
- Documents and Records
- Work Processes
- Procurement
- Measuring and Test Equipment
- Assessments/Audits
- Sample Control
- Data Documentation, Control, and Validation
- Software Control
- QA Grading

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

- Sampling Design
- Sample Handling
- Headspace Gas Testing
- Testing - NDA, RTR
- Visual Examination
- Hydrogen and Methane Analysis
- Volatile Organic Compound Analysis
- Metals Analysis
- Data Validation, Usability, and Reporting
- WIPP Waste Information System (WWIS)

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

- Inspection of Packaging
- Visual Inspection
- TRUPACT-II Preparation and Loading
- TRUPACT-II Leak Check
- Shipping Preparation
- Package Maintenance
- Documentation and Records
- Payload and Drum Certification
- Transportation Tracking and Communications (TRANSCOM)

Evaluation of INEEL TRU Waste Characterization Program (TWCP) documents was based on current revisions of the following documents:

INEEL Site Project Office QAPjP for the Transuranic Waste Characterization Program, PLN-190, including the subtier Facility Implementation Plans

INEEL TRU Waste Characterization, Transportation, and Certification Quality Program Plan (QPP), PLN-182

Program Plan for Certification of INEL Contact-Handled Stored Transuranic Waste, INEL-96/0345

RWMC Compliance Plan for TRUPACT-II Authorized Methods for Payload Control (TRAMPAC), WM-PD-88-012

Related INEEL and ANL-W technical and quality assurance implementing procedures

3.0 AUDIT TEAM AND OBSERVERS

AUDITORS/TECHNICAL SPECIALISTS

Steven Calvert	Audit Team Leader, CTAC
Beth Bennington	Auditor, CAO
Amy Arceo	Auditor, CTAC
Steve Davis	Auditor, CTAC
Larry Dell	Auditor, CTAC
Fred Dunhour	Auditor, CTAC
Bruce Langsteiner	Auditor, CTAC
Jeff May	Auditor, CTAC
Pete Rodriguez	Auditor, CTAC
Mike Brown	Technical Specialist, CAO
Vann Bynum	Technical Specialist, SNL
Ken Coop	Technical Specialist, CTAC
Mark Doherty	Technical Specialist, CTAC
Clint Kelly	Technical Specialist, WID
Ron Levis	Technical Specialist, CTAC
Laurie Sparks	Technical Specialist, WID
Tom Ward	Technical Specialist (in training), WID

OBSERVERS

R. Dennis Brown	CAO Management Representative, QA Manager
Gary Scott	CAO
Dan Ruge	DOE-HQ
Ben Walker	EEG

4.0 AUDIT PARTICIPANTS

INEEL individuals involved in the audit process are identified in Attachment 1. A preaudit meeting was held in the Radiological Waste Management Complex (RWMC) Building Conference Room on February 23, 1998. A daily meeting was held with INEEL management and staff to discuss issues and potential deficiencies. The audit was concluded with a postaudit meeting held in the RWMC Building Conference Room on February 26, 1998.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy, Implementation, and Effectiveness

The audit team concluded that the adequacy of the INEEL QA Program was satisfactory in meeting the requirements of the CAO QAPD, Revision 1; the QAPP, Revision 0 and Interim Change 11/96; the WAC, Revision 5 and Change Notice 1; and the TRAMPAC, Revision 16. The audit team concluded that except for the management assessment area that could not be fully evaluated, and the deficiencies noted in this report, the QA program was being satisfactorily implemented. The INEEL technical processes evaluated by the audit team were determined to be implemented and effective.

5.2 QA Program Audit Activities

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. The checklists are maintained as QA records.

5.3 Technical Activities

Evaluations of applicable INEEL technical activities are summarized below. The procedures evaluated during the audit are provided as Attachment 3.

5.3.1 Nondestructive Assay (NDA)

The SGRS/PAN NDA system was evaluated during the audit. Sludges are assayed for WIPP using the active mode of the PAN instrument for TRU activity ranges $>100\text{nCi/g}$ and mass loadings of $<16\text{g WG Pu}$. Graphite wastes are assayed in the passive PAN mode for loadings in the range of $5\text{-}160\text{g WG Pu}$. INEEL's total measurement uncertainty methodology was previously approved by an expert panel. Based on that approval and the documents examined before and during the audit, the assay

procedures (see Attachment 3: 106, 107, 111, 112, 122, 123, 125, 129, and 135) at INEEL were determined to be adequate and satisfactorily implemented. The NDA process was deemed to be effective for the ranges and waste forms described above. The audit team made two recommendations related to the NDA system (see Recommendations 3 and 4).

5.3.2 Data Validation; Level 2, Project Level Data Review and Reporting

The data validation process was evaluated at the Site Project Office (SPO). The TRU waste project Site Data Validation Officer (SDVO) is responsible for the level 2 data validation. The evaluation included examination of the data packages to assure that validation reviews are occurring. The audit team noted one area of concern (Observation 5) related to the SDVO performing spot checks. The data validation procedures (see Attachment 3: 79, 91, 97, 98, 99, 100, and 101) were determined by the audit team to be adequate, satisfactorily implemented, and the process was determined to be effective.

5.3.3 Real-Time Radiography

Operation of the Real-Time Radioscopic (RTR) system was evaluated by observation of container scans and a review of video recordings and RTR documentation. RTR activities performed at INEEL incorporate all CAO requirements as specified in procedure 310.1 of the Methods Manual and section ten of the QAPP. The radioscopic equipment upgrades recently completed by INEEL have greatly enhanced the system. The INEEL RTR procedures (see Attachment 3: 110, 121, and 124) were found to be adequate and satisfactorily implemented. RTR activities performed in accordance with these procedures were determined to be effective. An exemplary practice was identified relating to equipment upgrades (see exemplary practice 3).

5.3.4 Visual Examination

Visual examination activities at INEEL were evaluated to the requirements of procedure 310.2 of the Methods Manual, sections five and ten of the QAPP, and INEEL internal implementing procedures (see Attachment 3: 37 and 104). These activities include calculation of the miscertification rate, selection of containers to open, and the actual examination of the containers. The visual examination process was observed and videotape recordings and documentation were reviewed (see Observation 12 and Recommendation 9). An area of concern was discovered by the audit team (CAR # 98-028). The CAR deals with the role, responsibilities, and training of the Visual Examination Expert. Except for the areas identified in the CAR, visual examination activities were determined to be adequate, satisfactorily implemented, and effective.

5.3.5 Hydrogen and Methane Analysis and Gas Volatile Organic Compounds (VOCs)

Laboratory analysis and data review activities were evaluated to ensure effective performance. The processes were observed and applicable documentation reviewed to support the evaluation. The evaluation was based on procedures 520.1 (H₂ and CH₄) and 430.1 (gas VOCs) of the Methods Manual and sections 11 and 12 of the QAPP. INEEL internal Analytical Chemistry Methods Manual procedure ACMM-9920 (see Attachment 3: 23) is used for the hydrogen and methane analysis process. The quantitative determinations of hydrogen and methane in gas samples are made by gas chromatography with thermal conductivity detection using nitrogen as a carrier gas. Procedure ACMM-9930 (see Attachment 3: 24) is used for analysis of gas VOCs. The VOCs in headspace gas samples are determined by using the gas chromatography/mass spectrometry method. The audit team determined that the processes were being performed as required by the procedures. INEEL procedures for these processes were determined to be adequate, satisfactorily implemented, and the processes were determined to be effective for hydrogen, methane, and gas VOCs analyses.

5.3.6 Volatile and Semi-Volatile Organic Compound Analysis

The procedures (see Attachment 3: 16, 17, 18, 19, 20, and 21) and processes for determination of volatile and semi-volatile organic constituents and polychlorinated biphenyls (PCBs) in TRU waste characterization samples were evaluated and found to be satisfactory. These activities are performed in the Analytical Chemistry Laboratory (ACL). The execution of the procedures was witnessed during the audit. For the analytical and sample preparation procedures, the analysts executing the procedures were found to be knowledgeable in the procedural steps, the analyses (or preparations) being performed, and the quality requirements, and were sufficiently knowledgeable to effectively deal with unexpected results. The required records are being maintained, although issues were noted with the supervisory review of logbooks (CAR 98-030).

Method performance data were also reviewed and determined to be complete (i.e., the precision and accuracy data indicate acceptable laboratory performance on the method performance samples). Method detection limit determinations were determined to be within QAPP limits. The analytical results were determined to be technically sound. The audit team concluded that the procedures for the determination of volatile and semi-volatile constituents and PCBs in TRU waste characterization samples are adequate, satisfactorily implemented, and the processes are effective.

5.3.7 Total Metals Analysis

Metals analysis activities were evaluated in accordance with the requirements of section 15 of the QAPP, the Methods Manual, and INEEL internal implementing procedures (see Attachment 3: 10, 11, 12, 13, 14, and 15). Activities evaluated by the audit team included the preparation of samples, control of quality control standards, determination of percent solids, microwave digestion of solid samples, analysis of mercury using cold vapor atomic adsorption and fluorescence spectrophotometry, analysis of arsenic and selenium using graphite furnace atomic adsorption spectrometry, and analysis of trace metals by inductively coupled plasma atomic spectrometry. One observation was written relative to procedure ACLP 2.05 to clarify responsibilities and the use of "should" in lieu of "shall" (see Observation 6). The processes for analytical data recording, review, and reporting were evaluated for these analytical methods. The Total Metals Analysis procedures evaluated by the audit team were determined to be adequate, implemented, and the processes are effective.

5.3.8 Sample Handling and Chain-of-Custody

The process for sample handling was evaluated at the Analytical Chemistry Laboratory (ACL), Environmental Chemistry Laboratory (ECL), and Argonne National Laboratory-West (ANL-W) facilities. The evaluation established that handling of samples in these facilities was performed in accordance with the procedures (see Attachment 3: 5, 7, 39, 40, 64, 66, 67, 72, and 73). The samples are stored correctly after receipt and are tracked as they move through the analysis processes (see Recommendation 11). It was concluded that the sample handling procedures are adequate, satisfactorily implemented, and the process is effective.

The chain-of-custody process was examined for samples coming from RWMC to the various laboratory facilities. Concerns were noted in the area of discrepancy resolution and, in one case, the chain-of-custody form was not signed (CAR 98-029). The overall chain-of-custody program and procedures (see Attachment 3: 26 and 65) were determined to be adequate, marginally implemented, and the process is effective.

5.3.9 Sampling Design

The processes used to comply with specific container selection, sampling, examination, and data analysis requirements for transuranic waste were reviewed by the audit team. INEEL procedures (see Attachment 3: 86 and 87) that address these activities were determined to be adequate, satisfactorily implemented, and the process is effective.

5.3.10 Headspace Gas

The procedures (see Attachment 3: 8, 9, 22, 23, 24, and 134) used for the determination of volatile constituents in headspace gas were evaluated and determined to be satisfactory. These activities are being performed in the ECL. The execution of the procedures was witnessed during the audit and the analysts performing the procedural steps were determined to be knowledgeable relative to the analyses being performed and the quality requirements and were sufficiently knowledgeable to effectively deal with unexpected results. The required records are being maintained, although issues were noted with the supervisory review of logbooks (CAR 98-030). Adequate procedures for the determination of volatile constituents in headspace gas are being satisfactorily implemented in the ECL and the analytical processes and results were determined to be effective.

An attempt was made to evaluate the Fourier Transform Infrared Spectrometer System (FTIRS). The audit team's review of the procedures (see Attachment 3: 131, 132, and 133) and an observation of the equipment operation resulted in the conclusion that implementation and effectiveness are indeterminate. At this time, the FTIRS is in a startup mode and has not yet reached sufficient maturity to be evaluated.

5.3.11 INEEL Transportation

The audit team evaluated the INEEL TRUPACT-II visual inspection, payload and drum certification, packaging, and the transportation tracking and communications (TRANSCOM) processes. INEEL performed a loading demonstration for the audit team to verify implementation of the procedures. An exemplary practice was identified as a result of this demonstration (see exemplary practice 1). Documentation was reviewed as part of the evaluation of the transportation processes. The audit team observed the assembly and leak test of a TRUPACT-II and determined that the operations were implemented in accordance with the approved procedures (see Attachment 3: 57, 126, 137, 142, and 144). The audit team concluded that the processes and controls are acceptable for the assembly and leak check of the TRUPACT-II in accordance with the TRUPACT-II SARP and DOE/WIPP 93-1001. The audit team determined that the transportation activities at INEEL was adequate, satisfactorily implemented, and the processes are effective (see Observation 13 and Recommendations 8 and 10).

5.3.12 Software

Implementation of the requirements for the control of software used for processing, controlling, measuring, and statusing hazardous, radioactive, and waste matrix materials was evaluated. The evaluation included a review of the processes for the

development and control of software baselines and classification and the technical review of completed software documentation.

Life-cycle documentation reviewed for RWMC systems included the SWEPP Gamma-Ray Spectrometer (SGRS), SWEPP Assay System (SAS), Data Management System (DMS), Drum Vent System (DVS), and the Real Time Radiography (RTR). Conditions adverse to quality were discovered in the implementation of configuration management requirements for SGRS and SAS software systems. These are detailed in CAR 98-026.

Software reviewed for Site Project Office (SPO) consisted primarily of spreadsheet macros and code that was written to interface with commercial statistical analysis programs. Spreadsheet macros included random number generators for waste drum sampling and waste drum location sampling. Statistical analysis software code was written in support of NDA uncertainty analysis and hazardous components of TRU waste determinations. Concerns were identified with the SPO macros and software codes. Most software concerns were corrected during the audit, but the number of issues identified are indicative of unsatisfactory implementation of configuration management requirements (CAR 98-026).

In general, except in the configuration management area, the control and interface procedures (see Attachment 3: 47, 60, 90, and 105) for these systems and software were found to be adequate, satisfactorily implemented, and effective (see Recommendations 2 and 6).

5.3.13 WIPP Waste Information System (WWIS)

The WWIS was evaluated to the requirements of the INEEL procedure (see Attachment 3: 103). The evaluation included a demonstration of data input and system capabilities. The demonstration resulted in the issuance of one observation and one recommendation (see Observation 2 and Recommendation 1). It was proven during the demonstration that data could be satisfactorily transmitted to the WIPP Site. Data input should become more efficient over time. The audit team determined that the procedure was adequate, marginally implemented, and the process is effective.

6.0 CORRECTIVE ACTIONS/OBSERVATIONS & RECOMMENDATIONS

6.1 Corrective Action Reports

6.1.1 Verification of Previously Initiated CAO CARs:

CAR 97-046 from audit A-97-02 and CARs 98-013, 98-014, and 98-015 from audit A-98-07 remain open due to incomplete corrective actions. All other previously initiated CARs have been closed.

6.1.2 CARs Initiated as a Result of CAO Audit A-98-05:

The following eight CARs, initiated as a result of Audit A-98-05, have been transmitted to INEEL under separate cover. A brief description of each CAR is provided below.

6.1.2.1 CAO CAR 98-023

Objective evidence was not available from LMITCO Corporate Procurement to confirm implementation of the procurement document control procedures (see Attachment 3: 50, 51, and 52). Suppliers used for the reviewed procurements were not on the Evaluated Suppliers List (ESL).

6.1.2.2 CAO CAR 98-024

Objective evidence was not available from ECL and ACL to confirm implementation of the procurement document control procedures (see Attachment 3: 50, 51, and 52). Suppliers used for the reviewed procurements were not on the Evaluated Suppliers List (ESL).

6.1.2.3 CAO CAR 98-025

No objective evidence of implementation by ACL and ECL of the graded approach and quality level assignment process was available for review (see Attachment 3: 46).

6.1.2.4 CAO CAR 98-026

The requirements for software configuration control are not being fully implemented at the Radioactive Waste Management Complex (RWMC) and the Site Project Office (SPO). Areas of deficiency include access control, maintenance of software inventory lists, software backups, and change control.

6.1.2.5 CAO CAR 98-027

The Site Project Office (SPO) had not been performing overview activities as required by the procedures (see Attachment 3: 44, 94, and 96). Annual independent assessments had not been performed of each facility. Annual Level I surveillances had not been performed for each facility. In addition, an annual evaluation by the Independent Assessment Manager of the SPO QA Manager's Head Assessor certification had not been performed.

6.1.2.6 CAO CAR 98-028

ANL-W is performing visual examination of waste without the presence of a qualified Visual Examination Expert. During the visual examination operation, the ANL-W visual examination technicians or the system engineer make subjective judgmental assessments/decisions that are defined to be the responsibility of the Technical Expert. The INEEL Technical Expert has not been involved in the implementation of the process. The designated Visual Examination Expert had not completed the site-specific instruction portion of the required on-the-job training.

6.1.2.7 CAO CAR 98-029

Several discrepancies were noted on the Sample Receiving and Custody Review Checklists but no evidence of the discrepancy resolution (nonconformance reports) from RWMC was in the data packages. In addition, the ACL and ECL had not implemented the procedure for Process Deficiency Resolution for problems identified with the chain-of-custody forms and sample tags.

6.1.2.8 CAO CAR 98-030

Documents were not properly corrected. Documentation lacked the appropriate signatures for data generation and review. In some cases, reviews were performed but deficiencies were not documented by the reviewer or the review was not accomplished in the required time period. These conditions were observed at the ACL, ECL, SWEPP, and ANL-W. Numerous examples of these types of documentation problems were discovered in the approximately 400 documents reviewed.

6.2 Deficiencies Corrected During the Audit (CDA)

1. The balance used for microwave digestion and percent solids was not recalibrated prior to the recall due date. The recalibration was not performed because a set of traceable weights to be used inside the glovebox was not available. Daily accuracy checks of the balance were performed using a single standard until the new weights were obtained. The balance was recalibrated during the audit and found to be within tolerance. The use of the balance had no adverse impact on the analyses.
2. The procedure (see Attachment 3: 49) requires concurrence of the INEEL Quality Program Plan (QPP) and QAPjP by the Quality Systems & Services Department. This concurrence had not occurred, but was accomplished during the audit. There was no impact as a result of the missing concurrence.

3. The Chain-of-Custody forms and sample tags at ECL did not identify drum numbers. The Radiological Waste Management Complex (RWMC) procedure (see Attachment 3: 66) was revised to require that the drum numbers be included on the Chain-of-Custody forms and sample tags. There was no impact on traceability as a result of the Chain-of-Custody forms and sample tags not identifying drum numbers
4. A Certification of Calibration form for fuel plates was missing a signature. A signed copy was located and incorporated into EDF-RWMC-973.
5. The procedure (see Attachment 3: 70) requires data packages to be reviewed by qualified technical reviewers. Data packages were reviewed by an independent reviewer that had no qualification record on file. The records verifying the individual was qualified were located and placed in the file.
6. Documentation to support the annual review of the list of the ECL operating system components supporting gas analysis and the corresponding maintenance requirements, as required by the procedure (see Attachment 3: 9), could not be located. The documentation was located during the audit.
7. ANL-W did not have records of receipt for 20 of 48 distributed plans and procedures. The deficiency had been identified by management before the audit and corrective actions had been initiated. The records of receipt were completed during the audit.
8. Access control to a spreadsheet software (RANDCORE) was not protected by using a password, as required by the procedure (see Attachment 3: 90). A password was installed for the RANDCORE software and the access control requirements have been met.
9. The macro and random sample software used to calculate the estimated sample size for visual examination and select drums for SWEPP assay (Sampling.sas, Randomsample.sas) were not validated or verified. Verification and validation of the macro and sample software were satisfactorily completed and found to be acceptable by the audit team.
10. An individual did not have a method training/qualification basis form on file for a procedure (see Attachment 3: 18). The form was completed and put in the file. There was no impact on performance of the procedural steps..
11. An ACL Quality Control chemist that prepares laboratory standard solutions for TRU Waste Certification Program activities had no qualification records on file.

Documentation supporting the individual's qualification had not been completed. A letter of qualification was generated and added to the file. There was no impact on analytical work performed.

12. Quarterly reviews of the TWCP key personnel list were not being performed, as required by the procedure (see Attachment 3: 78). This was a self imposed requirement and does not have any impact on the program. The procedure has been revised to delete the requirement.
13. INEEL was unable to provide objective evidence that personnel involved in the WWIS had received the required training described in the procedure (see Attachment 3: 103). The training was completed, documented, and added to the personnel qualification files.
14. Appendix C of the procedure (see Attachment 3: 137) was not completed for a shipping package. Appendix C was completed, added to the shipping package, and verified by the audit team.

6.3 Observations

The following fifteen observations were identified during the audit. Observations 2, 12, and 15 require a written INEEL response:

1. The procedure (see Attachment 3: 95) requires that written quarterly reports from each facility be submitted to the SPO for input into the quality assurance report to management. Quarterly reports are not being submitted by the facilities. The quality assurance reports to management are being completed.
2. The WWIS procedure (see Attachment 3: 103) is not being implemented adequately. Steps in the procedure were not completed by the assigned individuals and the procedure was not available at the work station. A controlled copy was later located for use at the work station. Procedural guidance does not exist for completing characterization and certification checklists. Access forms for WWIS were not available from the system administrator. There was no impact to operations because Certification has not been granted and the demonstration was performed using the WWIS test directory.
3. The procedure (see Attachment 3: 27) requires that the Master Equipment and Activities List (MEAAL) contain specific minimum information for ANL-W facilities, projects, and operations. The Hot Fuels Examination Facility (HFEF) MEAAL was not numbered and had not been updated. The HFEF MEAAL and the MEAAL in

the Facility Implementation Plan contain conflicting information. There was no impact to facility operations.

4. The ANL-W procedure (see Attachment 3: 28) states that tier 2 and 3 documents should be reviewed periodically (every three years for management controlled procedures). ANL-W procedures reference responsibilities and processes that are out of date. The three year reviews are not being performed. This deficiency has been recognized by ANL-W management which has now called for updates to AWP's and assigned this responsibility to the Operations Procedures Group.
5. The procedure (see Attachment 3: 99) requires that the Site Data Validation Officer (SDVO) spot check data entries and increase spot checks if errors are found. The SDVO has not been performing this activity. It was determined by the audit team that data are not being compromised because all final data are verified by the SDVO prior to submittal. However, the requirement should be implemented as stated or the procedure revised.
6. The procedure (see Attachment 3: 2) that establishes the requirements for the control, distribution, and use of spectrochemical standards used by the Spectrochemistry Group should be revised to clarify responsibilities. The procedure being implemented contains numerous "should" statements that are program requirements that need to be "shall" for continued effective implementation.
7. The procedure (see Attachment 3: 69) requires backup tapes for electronic records for the Analytical Laboratory Department be stored at monthly intervals in fireproof cabinets. Backup tapes have been made and are being stored, but are not in fireproof cabinets. The backup tapes are, however, being dual stored.
8. All INEEL TWCP managers are required to perform and document informal and formal self assessments, as stated in the procedure (see Attachment 3: 56). Objective evidence that all managers are performing informal self assessments did not exist. The formal self assessments reviewed by the audit team contained few quality assurance elements.
9. Review of variances issued in the last year indicate that they are being used for other than their intended use (e.g. nonconformance reporting, procedure modification).
10. Follow up actions appear to be inconsistent for issues identified in ANL-W management assessments. Adverse trends appear to have been identified at ANL-

W, but actions to follow up have not been taken to date. These circumstances could result in conditions adverse to quality if action is not taken.

11. The initial training and qualification records for HFEF Instrumentation & Control (I&C) personnel performing calibration of measuring and test equipment (M&TE) is not being maintained by ANL-W in the training and qualification files, as required by the procedure (see Attachment 3: 25). The records are being maintained in the individual personnel files.
12. Program requirements from the Methods Manual have not been incorporated into the ANL-W procedure (see Attachment 3: 37). The procedure text does not address 1) percent full information for drums prior to unloading, 2) reason for examination selection, 3) labeling of items removed, 4) standard weight reference table, and 5) recording of location, container, and the amount of liquids. The procedure appendix does contain the information and visual examination technicians are recording the data.
13. Table A-1 of the INEEL TRAMPAC references two procedures (TPR-1727 and TPR-1741) that have been deleted. Table A-1 should be revised to remove these references. The references have no impact on the process.
14. Corrective action responses to Level I surveillances were not received by SPO for eight or nine months after issuance of the reports. The procedure (see Attachment 3: 96) specifying surveillance requirements for RWMC/SWEPP, ECL, ACL, and ANL-W HFEF does not identify specific time frames for responses. Responses should be timely to facilitate effective corrective actions. (See Observation 15).
15. The communications between ANL-W and SPO are less than adequate. The lack of effective communication and is resulting in delays that could result in future conditions adverse to quality. Examples in delays include:
 - Over 200 drum/data packages were forwarded to SPO in FYs 97 and 98 by ANL-W. Only 13 were reviewed by SPO.
 - CAO CAR 97-046 written (05/05/97) on an ANL-W issue is still open pending action by SPO.
 - ANL-W TWP NCR 970074 concerning PCBs in a drum is still open pending action by SPO.

6.4 Recommendations

The following eleven recommendations are presented for INEEL management consideration:

1. The current process for WWIS data entry at INEEL requires action by three individuals. The audit team recommends that this activity could be performed more effectively by the Facility Quality Assurance Officer and the Waste Certification Official. In addition, the container summary reports could be validated in the characterization and certification modules, resulting in a reduction of resources and a more streamlined process.
2. Software source codes installed on user machines had different date stamps than those on the Software Inventory List. A stricter method of controlling software versions should be developed and implemented.
3. Procedure TPR-1523, Rev. 2, "*Passive /Active Neutron Assay System*", currently states that the data management system (DMS) will make corrections to materials other than Pu-239. Material corrections are actually taking place by the SWEPP Assay System (SAS). The procedure should be clarified to reflect which system makes the corrections.
4. Procedures TPR-1573, Rev. 10, "*PAN Assay System*", and TPR-1726, Rev. 16, "*TRU Waste Examination for SWEPP*", should be reconciled in relation to the timing of the replicate measurement. One procedure requires the first drum to be the replicate and the other allows any drum to be the replicate.
5. Standards are being termed as traceable to National Institute of Standards and Technology (NIST) based on the material being weighed on a balance calibrated using NIST traceable weights. This is an inappropriate use of the term "NIST traceable" and should be discontinued.
6. Several procedures (see Attachment 3: 22, 23, and 24) that require calculations as part of the process do not reference the software needed to make the calculation. The procedures should include the software being used to perform the calculations.
7. ANL-W should stop the practice of granting extensions for expired training. Current procedures do not allow the use of training extensions.
8. The procedure (see Attachment 3: 126) should be revised to clarify the leak test reading units to be entered (Hg or PSIG). The current process caused confusion between the system operator and the certification specialist during the leak test demonstration.

9. ANL-W should verify visual examination video resolution by focusing on something with printing, such as a sign, and declare such resolution on the voice print of the video tape.
10. INEEL should ensure that the requirements of DOE/WIPP 93/1001 "TRUPACT II Operating and Maintenance Instructions" are incorporated into their procedures. The audit team recommends INEEL interface with Waste Isolation Division (WID) to obtain a review of procedures relating to TRUPACT II.
11. When samples are retrieved from storage for analysis, the temperature of the sample should be taken prior to performance of any analysis processes.

6.5 Exemplary Practices

1. The TRUPACT II loading and leak test operation was performed smoothly. The Operators worked exceptionally well together and were able to perform several tasks in parallel which resulted in the process being completed in an effectual manner. It was obvious that the operators were well trained and functioned well as a team.
2. The calibration department at ANL-W has instituted an M&TE process using bar codes to track calibrated equipment use and any related nonconformances. The bar code data can be used to establish an accurate usage history.
3. The RTR upgrades are a significant enhancement to the waste characterization process at INEEL. The digital readings have better resolution, a longer storage life, and are available at any computer station on the local area network.
4. The INEEL Metrology Laboratory has an outstanding system in place for tracking the status of M&TE. The recall system automatically reminds the customer of the calibration due date a month in advance. The system includes the capability to track all equipment that has been calibrated by a specific standard should the standard be found to be out of calibration.

7.0 LIST OF ATTACHMENTS

- Attachment 1: Personnel Contacted During the Audit
- Attachment 2: Summary Table of Audit Results
- Attachment 3: Table of Procedures Audited

PERSONNEL CONTACTED DURING THE AUDIT

INEEL PERSONNEL CONTACTED				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Allred, Jim	QA&O, S&CL		X	
Andrus, Debbie	Sr. Operator, LMITCO		X	
Arbon, Rod	Site Project Manager, LMITCO	X	X	X
Banks, Lavern	Quality Engineer, LMITCO	X	X	
Beausoleil, Geoffrey	Facility Director, DOE-ID			X
Beutter, Paul	QA, LMITCO/RWMC	X		
Bingham, Ron	Q.E. Procurement, LMITCO		X	
Bishoff, Jim	Operations, LMITCO/RWMC	X		
Bitter, Marcy	Buyer Procurement, LMITCO		X	
Black, Dave	Pr. Tech. Spec., ALD		X	
Blackwood, Larry	Consulting Scientist		X	
Bronson, R. Tim	Sr. Scientist, ALD		X	
Bryngelson, Dwayne	Project Engineer, ANL-W	X	X	X
Christenson, Ted	Corp, LMITCO Procurement		X	
Clements, T.L. Jr.	Manger, TRU Waste Program, RWMC	X	X	X
Cline, Skip	Training Manager, RWMC		X	
Cline, T.D.	Consulting Specialist, LMITCO			X

INEEL PERSONNEL CONTACTED				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Coburn, Klayne	Group Leader, ANL-W/Operations		X	
Contreras, Paul	Facility Engineer, DOE-ID/RWMC OPS	X		X
Corman, Roger	Legal, DOE-ID	X		
Crowder, Catherine	ECL, LMITCO		X	X
David, Ron	Tech Lead, LMITCO Document Control		X	
Davis, Darrin	SWEPP/OPS, RWMC		X	
Davis, Kurt L.	RTR System Engr., RWMC		X	
DeHann, Mark S.	Statistics		X	
Deming, Larry W.	Sr. Eng., QA&O, S&CL		X	
Dumas, Elvin	FQAO, LMITCO/RWMC	X	X	X
Dwight, Carla C.	TDWP Manager, ANL-W		X	X
Edinborough, Chuck	Gas Generation Project Engineer, RWMC		X	
Evans, Robert	PR-Engr/Lab Tech, ECL		X	
Fife, Cindy D.	SQAO Asst.		X	
Flores, Arturo	Document Control, LMITCO/RWMC		X	X
Ford, Bryant	3100 Project Manager, LMITCO/TWMC	X	X	X
Fritz, Lori	WM-PM, DOE-ID	X		X
Garne, Gary	Q.E. Procurement, LMITCO		X	

INEEL PERSONNEL CONTACTED				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Gilman, Janice	Document Control/Records Management, LMITCO/RWMC		X	X
Goettsche, James H.	Pr. Scientist, ACL		X	
Hailey, Sheila	Site Data Validation Officer, LMITCO	X	X	X
Hand, Rodney L.	Manager, Analytical Labs., LMITCO			X
Harker, Yale	Consulting Scientist, N&RPhys/LMITCO	X	X	
Hartley, Diane	TWMIS Data Admin, Waste Management		X	
Hayes, Glen	Site QA Officer, LMITCO	X	X	X
Heath, Shawn D.	SWEPP/OPS, RWMC		X	
Hobbes, Tammy	Argonne Group West, DOE-CH	X		
Hoffman, C.R.	Principal Scientist		X	
Ingle, Steven D.	Req. Coord., LMITCO Procurement		X	
Johnson, Les	Operating Manager, AMWTP/RMRS	X	X	X
Johnson, V. Jim	PR-Tech Specialist, ECL		X	
Jones, Ron	I&C Lead, ANL-W		X	
Jordan, Roberta	Inorganic Supervisor, ACL		X	
Kilinski, Peter D.	Training Specialist, ANL-W/HFEF		X	

INEEL PERSONNEL CONTACTED				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Kubicek, Larry	QS&S, LMITCO		X	
Langley, Greg	Network Admin., RWMC		X	
Likuo, Chi	LMITCO			X
Logur, Ken	RWMC		X	
Long, Jeff	Technical Leader, ACL		X	
Lundholm, Duane	Tech Spec., ACL		X	
Lundquist, Kevin	Certification Specialist, LMITCO		X	
Magnan, J. M.	Sys. Eng., ANL-W		X	
Mayberry, John	Technical Manager, AMWTP, SAIC	X		
McBath, William H.	ES&H Supervisor, RWMC		X	
Meachum, Teresa	Advisory Scientist		X	
Menkhaus, Dan	TRU Program Radioassay, TRU Program	X	X	X
Merritt, Alan E.	Environmental Scientist, State of Idaho			X
Messenger, Janina	Admin Assistant ANL-W	X	X	
Miley, Donna	Waste Engineer, Transportation		X	
Miller, Terrence L.	Software Engineer, RWMC		X	
Moody, Harry	Manager, Metrology Lab		X	
Moody, Harvey J.	Dept. Manager, QA&O, S&CL		X	
Moore, Donna	Pro. Mgr, Procedures		X	

INEEL PERSONNEL CONTACTED				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Natoni, Christian	DOE-RWMC Facility Engineer, DOE-ID	X		
Park, Lori	Secretary, INEEL TRU Waste Program		X	
Parker, Doug	Advisory Engineer, LMITCO	X		
Parks, Bob	Operations Manager, HFEF		X	
Peterson, Harve D.	CM and CEL Administrator, LMITCO		X	
Pound, Don	Transportation Certification Officer, LMITCO	X	X	X
Preston, Tim	Staff Quality Engineer, LMITCO	X	X	X
Reidle, Martha	Training Administrator		X	
Rinder, Marty	RWMC		X	
Sabel, Frances A.	PR Administrative Assoc., ECL.		X	
Sailer, Shelly	ALD QA Officer, LMITCO	X	X	X
Schwendiman, Wyn L.	TRIPS System Administrator		X	
Scott, Gary L.	Management Observer, DOE/CAO	X		
Sharp, Michelle	Site Document Control, LMITCO	X	X	
Sherick, Mark	Advisory Engineer, LMITCO	X		X

INEEL PERSONNEL CONTACTED				
NAME	ORG/TITLE	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Stanley, Cliff	Engineer Lead, LMITCO/RWMC	X	X	X
Taruy, Sharon	Secretary, ANL-W/TWDP		X	
Tedford, Gina K.	Waste Certification Official LMITCO	X	X	X
Teton, Julia	SWEPP/CS, RWMC		X	
Trammell, David	Tech Lead, ACL		X	
Twedell, Gary	Engineer, LMITCO		X	
Wardie, Andrea	LMITCO		X	
Wasylow, Jim	Maintenance Engineer Supervisor, LMITCO/RWMC	X		
Wells, Jerry	TRU Program Manager, DOE-ID			X
Wenczel, Vic	QA&O Procurement, LMITCO		X	
Wilbur, Roger	XMWTP, DOE-ID	X		
Wilde, Terry L.	Sr. Tech, QA&O, S&CL, ANL-W		X	
Williams, Jeff	Facility Rep., DOE-ID	X	X	X
Williams, Ray	Q.E. Procurement, LMITCO		X	
Yerbich, Rudy	Plant Services Manager		X	
Yoon, Y.	Consulting Scientist		X	
Zohner, Stan	Technician, QA&O, S&CL		X	

CAO Audit A-98-05 Detail Summary

	Requirements Documents	No. of Pages	Concern Classification				QA Evaluation		Technical Effectiveness
			CARs	CDAs	Obs	Rec	Adequacy	Implementation	
QAPjP									
1.1	Organization	9		12	15		A	S	E
2.1	Management Assessment	13			1,4,8		A	I	I
1.2	Document Control	38		2, 7			A	S	E
1.6	Training	19		10,11, 13	11	7	A	S	E
1.7	Records	62	98-030	5	7		A	M	M
1.8	Procurement	28	98-023 98-024				A	M	M
	QA Grading	6	98-025		3		A	M	M
1.9	Software	51	98-026	8, 9		2,6	A	M	M
2.1.1	Audits	26	98-027				A	M	M
2.0	Corrective Action/NCRs	35			9, 10, 14		A	S	E
1.9	Calibration/M&TE	25		1, 4		5	A	S	E
3.0	Data Validation - Level 2	39			5		A	S	E
5.0	Sampling Design	26					A	S	E
6.0	Sample Handling, C of C	30	98-029	3		11	A	M	M
7.0	Headspace Gas	8					A	S	E
8.0	Sampling	20					A	S	E
9.0	NDA	44				3,4	A	S	E
10.0	RTR, Visual	25	98-028		12	9	A	S	E
11.0	Hydrogen, Methane	23					A	S	E
12.0	Gas VOCs	32		6			A	S	E
13.0	Total VOCs	21					A	S	E
14.0	Total Semi VOCs	10					A	S	E
15.0	Total Metals	29			6		A	S	E
	WWIS	13			2	1	A	M	E
	Transportation	35		14	13	8,10	A	S	E
TOTALS		667	8	14	15	11	A	S	E

Definitions

E = Effective
S = Satisfactory
I = Indeterminate

M = Marginal
N/A = Not Applicable
U = Unsatisfactory

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

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

INEEL PROCEDURES AUDITED			
NUMBER	PROCEDURE NUMBER	REVISION	TITLE
1.	ACLP 1.01	1	Preparation of QC Reagents and Standards
2.	ACLP 2.05	0	Control Distribution and Use of Spectrochemical Standards
3.	ACLP 4.10	0	Determination of Method Detection Limits for Gas Analysis
4.	ACLP 4.20	0	Sample and QA Nomenclature Conventions for TWCP
5.	ACLP 4.25	0	Sample Receiving, Custody, and Storage
6.	ACLP 4.30	0	Standards Preparation, Documentation and Storage
7.	ACLP 4.40	0	Summa Canister Cleaning
8.	ACLP 4.45	0	Gas Transfer Manifold Systems
9.	ACLP 4.50	0	Equipment Maintenance
10.	ACMM-2350	2	Determination of Arsenic & Selenium in Samples
11.	ACMM-2900	3	Determination of Trace Metals in Samples
12.	ACMM-7801	6	Determination of Mercury by Atomic Absorption
13.	ACMM-7802	4	Determination of Mercury by Fluorescence Spectrophotometry
14.	ACMM-8909	0	Microwave Assisted Digestion of Homogeneous Solids and Soil/Gravel
15.	ACMM-8969	0	Determination of Percent Solids
16.	ACMM-9081	0	Determination of PCBs in Rad Organic Sludges by GC/ECD
17.	ACMM-9260	0	VOCs by GC/MS: Capillary Colume Technique
18.	ACMM-9261	3	Determination of Total VOCs in Homogeneous Solids and Soil/Gravel By GC/MS
19.	ACMM-9271	2	Determination of Semi-VOCs in TRU Waste Samples
20.	ACMM-9441	1	Determination of Nonhalogenated VOCs by GC/FID
21.	ACMM-9501	2	Sample Prep of TRU Samples for Organic Analysis
22.	ACMM-9910	1	Analysis of Gas Samples for Alcohols and Ketones by GC/FID
23.	ACMM-9920	1	Analysis of Gas Samples for Hydrogen/Methane by GC/TCD
24.	ACMM-9930	1	Analysis of Gas Samples for VOCs by GC/MS
25.	AWP-2.5	1	Measuring and Test Equipment
26.	AWP-2.8	2	Chain of Custody
27.	AWP-4.2	0b	QA Grading
28.	AWP-4.3	0a	Document Management System
29.	AWP-4.4	0a	Document Control
30.	AWP-4.7	0	Nonconformance Control
31.	AWP-4.11	1	Vital and QA Records
32.	AWP-4.14	0b	Procurement Document Preparation
33.	AWP-5.1	1	Management Assessment
34.	AWP-5.4	1a	Independent Assessment
35.	HFEF-OI-1251	0a	Records Management
36.	HFEF-OI-6862	1	Sample Packaging and Shipping
37.	HFEF-OI-6890	2c	Waste Characterization
38.	HFEF-OI-6892	1a	Waste Characterization Data Packages
39.	HFEF-OI-6910	1d	Core Drilling Operations
40.	HFEF-OI-6921	2	Sludge Sample Preparation
41.	MCP-4	1	Business Assessment
42.	MCP-100	1	Developing Procedures
43.	MCP-147	1	Vendor Assessment Program
44.	MCP-196	2	Assessor/Lead Assessor Qualification
45.	MCP-538	5	Control of Nonconforming Items
46.	MCP-540	3	Graded Approach & Quality Level Assignment
47.	MCP-550	1	Software Management
48.	MCP-552	4	Conduct of Independent Assessments

INEEL PROCEDURES AUDITED			
NUMBER	PROCEDURE NUMBER	REVISION	TITLE
49.	MCP-561	3	QPP/QAPjP Development
50.	MCP-590	4	Procurement Quality Requirements
51.	MCP-591	2	Evaluated Supplier Program
52.	MCP-592	2	Acquisition of Goods and Services
53.	MCP-598	6	Process Deficiency Resolution
54.	MCP-1766	5	RWMC Receipt, Inspection, and Documentation of Waste
55.	MCP-1773	6	RWMC Reporting/Surveillance Requirements
56.	MCP-1775	2	RWMC Self Assessment
57.	MCP-1783	3	TRUPACT II Container Maintenance Program
58.	MCP-1793	6	TRU Waste Program Records Management and Retention
59.	MCP-1802	4	RWMC Facilities Requisition Control
60.	MCP-1803	4	Configuration Control of RWMC Hardware/Software
61.	MCP-1805	4	Document Preparation, Review, Control, and Release
62.	MCP-1809	5	Records Management
63.	MCP-1815	3	RWMC/SWEPP Level I Data Validation
64.	MCP-2001	2	Control of Analytical Methods and Procedures
65.	MCP-2002	2	Analytical Chemistry Chain of Custody
66.	MCP-2004	0	Sample Management in Analytical Chemistry Lab
67.	MCP-2005	0	Analytical Lab Dept QC Program
68.	MCP-2006	1	Analytical Lab Dept Training and Qualification Program
69.	MCP-2007	0	Analytical Records Management
70.	MCP-2008	0	Analytical Data Recording, Review and Reporting
71.	MCP-2011	1	Analytical Logbooks
72.	MCP-2017	0	Analytical Nonconformance and Variance Reporting
73.	MCP-2018	0	Analytical Corrective Actions & Deficiency Tracking
74.	MCP-2391	2	Calibration Program
75.	MCP-2392	1	Independent Performance Assessment
76.	MCP-2492	6	Standards and Calibration Lab Operations
77.	MCP-2502	3	Standards and Calibration Lab Calibration Intervals
78.	MCP-2516	1	Key Project Personnel
79.	MCP-2517	1	Data Flow and Reporting
80.	MCP-2518	1	Duties of INEL Site Personnel
81.	MCP-2519	1	Project Files
82.	MCP-2520	5	QA Records Management
83.	MCP-2521	1	Site Project Data Base
84.	MCP-2522	3	Preparation & Control of Management Control Procedures
85.	MCP-2523	2	Indoctrination & Training of INEL SPO Personnel
86.	MCP-2524	1	Sample and Control Charts
87.	MCP-2525	2	Drum Core Sample Plan
88.	MCP-2526	4	Control of QAPPs and FIPs
89.	MCP-2527	2	DQO Reconciliation at SPO Level
90.	MCP-2528	3	Computer Software Control
91.	MCP-2529	1	Drum Data Review by Site QA Officer
92.	MCP-2530	3	SQAO Drum Data Review Checklists
93.	MCP-2531	3	Nonconformance Reporting
94.	MCP-2532	4	Independent Assessment
95.	MCP-2533	1	Reports to Management
96.	MCP-2534	2	Level I Surveillances
97.	MCP-2535	1	Level II Data Processing by the SDVO

INEEL PROCEDURES AUDITED			
NUMBER	PROCEDURE NUMBER	REVISION	TITLE
98.	MCP-2536	1	Evaluation by SDVO
99.	MCP-2537	2	Activities Conducted by the SDVO
100.	MCP-2538	2	Data Reduction and Waste Stream Summarization by the SDVO
101.	MCP-2539	2	Report Preparation
102.	MCP-2542	2	Preparation of Waste Profile Forms
103.	MCP-2544	0	WWIS Data Transfer
104.	MCP-2546	1	Visual Examination Process
105.	MCP-2761	0	Commercial Off the Self Hardware/Software Control
106.	MCP-2900	0	Radioassay Total Uncertainty Process Using Modified Statistical Sample Approach
107.	MCP-2991	0	Radioassay Total Uncertainty Process Using Statistical Sampling Approach
108.	MCP-2992	1	QA Program Surveillances
109.	MCP-2993	0	TWCP Action Tracking and Trend Analysis
110.	QTP-002	2	RTR System
111.	QTP-004	7	Qualification Test Procedure (PAN)
112.	QTP-011	4	Qualification Test Procedure (SGRS)
113.	PLN-127	2	Training Implementation Matrix for RWMC
114.	RDI-2	2	Receiving Inspection
115.	TDWP-AP-01	3	Documents and Records Management
116.	TDWP-AP-02	3	TWCP PQAR Data Package Review
117.	TDWP-AP-03	2	TWCP Project Manager Packages
118.	TDWP-AP-04	1	TWCP Quality Improvement Trending and Tracking
119.	TDWP-AP-05	0	TWP Training Plan
120.	TPM-3.3.4	7	HFEF Waste Characterization Area Initial and Continuing Training
121.	TPR-1522	3	RTR System
122.	TPR-1523	2	Assay System
123.	TPR-1534	2	Gamma Ray Spectrometer System Description
124.	TPR-1572	8	Operating the RTR System
125.	TPR-1573	10	PAN Drum Assay System
126.	TPR-1581	9	Transuranic Package Transporter-II Operations
127.	TPR-1584	8	Drum Venting Operations
128.	TPR-1585	7	Tracking of Waste Using Barcodes
129.	TPR-1588	9	Gamma Ray Spectrometer System
130.	TPR-1610	0	Determination of Method Detection Limits for Hydrogen Using RGA
131.	TPR-1611	3	Determination of Method Detection Limits for VOCs and Methane Using FTIRS
132.	TPR-1612	3	On-Line Determination of hydrogen in HGAS Using GASLAB 300
133.	TPR-1613	2	On-Line Determination of VOCs and Methane in HGAS Using FTIRS
134.	TPR-1614	0	Method Performance Evaluation for Methods 430.7 and 510.1
135.	TPR-1719	4	Calibration of Gamma Assay/System
136.	TPR-1722	11	Drum Vent Operations
137.	TPR-1723	8	TRUPACT Operations
138.	TPR-1724	3	Waste Retrieval Operations
139.	TPR-1725	3	TRU Waste Payload Handling
140.	TPR-1726	16	TRU Waste Examination for SWEPP
141.	TPR-1728	16	Manual Gas Sampling
142.	TPR-1735	3	Container Inspection and Final Disposition
143.	TRP-1573	10	PAN Drum Assay System

INEEL PROCEDURES AUDITED			
NUMBER	PROCEDURE NUMBER	REVISION	TITLE
144.	WM-PD-88-012	1	RWMC TRAMPAC