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**U. S. DEPARTMENT OF ENERGY
ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT
OFFICE OF WASTE MANAGEMENT**

VITRIFICATION PROJECTS DIVISION

**AUDIT REPORT
NUMBER 92EA-SR-AU-04**

QUALITY ASSURANCE AUDIT

OF

**DOE-SAVANNAH RIVER FIELD OFFICE
QUALITY ASSURANCE PROGRAM
DEFENSE WASTE PROCESSING DIVISION**

SAVANNAH RIVER, SOUTH CAROLINA

SEPTEMBER 14-18, 1992

EXECUTIVE SUMMARY
U.S. DOE AUDIT NO. 92EA-SR-AU-04
DEFENSE WASTE PROCESSING DIVISION
QUALITY ASSURANCE PROGRAM

The Vitrification Projects Division (EM-343) conducted an audit, during the period of September 14-18, 1992 of the Defense Waste Processing Division (DWPD) to determine the adequacy, effectiveness, and implementation of the DWPD Quality Assurance (QA) Program applicable to the waste acceptance activities associated with the waste form production. The audit was performed in accordance with line organization responsibilities described in the Secretary of Energy Notice 6E-92 "Department Organizational and Management Arrangements" and implemented to meet the requirements of the Office of Civilian Radioactive Waste Management (RW), "Quality Assurance Requirements Document (RW-0214)."

The audit team commends the DOE-DWPD and the Defense Waste Processing Facility (DWPF) for their utmost cooperation and professionalism displayed during the course of the audit. Interaction with DWPD and DWPF personnel demonstrates their comprehensive understanding of the applicable QA requirements. Additionally, the immediate increased level of DWPD and DWPF management attention to the audit team's concerns and observations was noteworthy.

The audit team would like to express sincere appreciation for the positive attitudes of all personnel contacted and the assistance provided by DWPD and DWPF personnel. This assistance contributed greatly to the success of the audit. It was obvious to the team that personnel displayed ownership and exhibited pride in their QA Program.

The major concerns identified by the audit process were in the areas of document control, inspection, nonconforming items, and audits. In the area of document control, there was a lack of documentation to support the comment/resolution for DWPD QA procedure review process and procedure manuals appear to be out of control. Seven manuals reviewed were found not to have the latest revisions of procedures. In the area of inspection, the maintenance department does not have a peer verification program as required by SOP-QI-610-1. In the area of nonconformances, action required by procedures is not being taken for overdue responses to deficiency documents. In the area of audits, DWPD did not perform any comprehensive audits of the HLW QA program during FY90 through FY92. Additionally, independent assessments were not performed in the time frame required by the procedure.

The QA Program elements were determined to be effective for all the criteria except 3, 6, 9, 13, and 18. Criteria 3 and 9 were considered indeterminate due to lack of sufficient activity to adequately demonstrate effectiveness. Criteria 6, 13, and 18 were considered marginally effective based on the deviations identified as further discussed in this report.

Overall adequacy and implementation of the DWPD QA program was deemed by the audit team to be effective.

A description of audit activities, results, and observations is presented in the following audit report. Specific details of audit findings are provided in Deviation and Corrective Action Reports (DCARs), which are enclosed within this report.

AUDIT REPORT
DOE/EM-343 QUALITY ASSURANCE AUDIT
NO. 92EA-SR-AU-04

DOE DEFENSE WASTE PROCESSING DIVISION
QUALITY ASSURANCE PROGRAM

SAVANNAH RIVER FIELD OFFICE
SAVANNAH RIVER, SOUTH CAROLINA
SEPTEMBER 14-18, 1992

I. AUDIT SCOPE

The audit determined the adequacy and effectiveness of implementation of the DWPD QA Program for the waste acceptance activities associated with the waste form production in accordance with the line organization responsibilities described in the Secretary of Energy Notice 6E-92, "Department Organizational and Management Arrangements" and implemented to meet the requirements of OCRWM's RW-0214. Additionally, EM-20 conducted an investigation of the DOE-SR suspect parts program (Ref. Attachment 3).

A. PROGRAMMATIC REQUIREMENTS:

The QA Program elements reviewed to assess the adequacy and effectiveness of DWPD Program implementation included the following:

- (1) Organization
- (2) QA Program
- (3) Design Control (Including Software)
- (4) Procurement Document Control
- (5) Instructions, Procedures, and Drawings
- (6) Document Control
- (7) Control of Purchased Items and Services
- (8) Identification and Control of Items
- (9) Control of Processes
- (10) Inspection
- (11) Test Control
- (12) Control of Measuring and Test Equipment
- (13) Handling, Storage, and Shipping
- (14) Inspection, Test and Operating Status
- (15) Control of Nonconforming Items
- (16) Corrective Action
- (17) QA Records
- (18) Audits

DWPD and DWPF personnel were interviewed, and applicable records and documents pertinent to the above program elements were reviewed by the audit team members to verify implementation of the QA program requirements.

B. PROGRAM DEFINING DOCUMENTS:

The basis for the audit is contained in the applicable requirements and criteria identified in the following documents:

- (1) DOE-SR-2006, Parts 1 and 2, DWPD "Quality Assurance Program Description" (QAPD)
- (2) SW4-1.8, Westinghouse Savannah River Company QAPD
- (3) DOE Orders: (as applicable)
 - a. 5820.2A , "Radioactive Waste Management"
 - b. 4700.1, "Project Management System"
- (4) DOE/EM/WO/O2 Rev. 1, DOE-VPD QAPD,
- (5) DOE/RW-0214, Rev. 4 and ICN 4.1, DOE/RW- "Quality Assurance Requirements Document" (QARD)
- (6) ASME NQA-1-1989, "Quality Assurance Requirements for Nuclear Facilities including applicable Supplements and Appendices"

II. AUDIT PARTICIPANTS

A. Audit Team Members:

J. E. Hennessey, EM-36, Audit Team Leader (ATL)
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B. Observers:

C. D. Morell, CER Corporation (RW-3)
J. Gilray, U.S. Nuclear Regulatory Commission (NRC)

C. Attendees at the pre-audit and post-audit meetings and personnel contacted during the audit are identified in Attachment 1.

III. PRE-AUDIT MEETING

A pre-audit meeting was held on September 14, 1992 at 9:00 am. W. Pearson, DWPD Waste Compliance and Quality Assurance (WC&QA) Branch Chief, gave an overview of the DWPD and DWPF organization and a general status of the program and current activities. R. Hinds, DWPF Quality Programs, presented an overview of the history, development, and status of the DWPF QA Program as well as a brief description of their organization and oversight functions. J. Hennessey, EM-343 ATL, presented the audit scope and objectives, audit team assignments, introduction of the audit team and observers, schedule of daily activities, and the method for handling concerns identified during the course of the audit. Identification of audit contacts and escorts were identified, and the meeting adjourned at approximately 11:30 a.m.

IV. CONDUCT OF AUDIT

The audit was conducted according to the requirements of the EM-343 Standard Practice Procedure No. 4.02, "Administration and Conduct of Quality Assurance Audits," Revision 3, dated 8/24/92. Using checklists developed specifically to correspond to the scope of the audit, lines of inquiry were pursued by the audit team to evaluate the adequacy and effectiveness of the DOE-DWPD implementation of their QAPD, DOE-SR-2006 and its compliance with DOE/RW-0214, "QARD" and DOE/EM/WO/02, Vitrification Projects Division High-Level Waste QAPD

A daily briefing for DWPD and DWPF management was conducted by the ATL at 8:00 a.m. to discuss concerns and observations noted from the previous day.

A brief tour of the DWPD facilities was conducted for the benefit of interested audit team members and observers.

V. SUMMARY OF AUDIT RESULTS

Using the checklists previously discussed, the following information was obtained through review of pertinent documents and interviews conducted with cognizant DWPD and DWPF personnel for each QA Program element. The deviations and/or observations noted for the appropriate criteria are discussed in detail in Section VI, Deviations and Observations.

Organization (Criterion 1)

Both the DOE-DWPD and Westinghouse Savannah River Company (WSRC) DWPF have established organizational structures and defined responsibilities and authorities that satisfy applicable requirements of NQA-1 and DOE/RW-0214. Within the past year, WSRC has merged a QA group within the DWPF Department into the DWPF QA Department, which is outside of but matrixed to the DWPF Department. The team considers this consolidation an improvement.

Education and experience requirements for QA management positions have been established by both DWPD and the DWPF QA Department and the incumbents meet these requirements.

DWPD and the DWPF Department have established satisfactory procedures for handling disputes and allegations, and have taken measures (training and posting) to make people aware of them and of the RW hotline for quality concerns. However, as indicated in Observation No. 1, DWPD needs to provide for periodic refresher training to assure that awareness is maintained. The procedures have not been used during the past year, but the RW hotline has.

DWPD and the DWPF Department have established satisfactory procedures for stopping work. There have been no instances during the past year where stopping work had to be seriously considered.

The audit team identified one Observation for Criterion 1. This QA Program element is considered effective.

Quality Assurance Program (Criterion 2)

DWPD and the DWPF Department have both recently revised their QAPDs to bring them into full compliance with DOE/RW-0214, Rev. 4 and ICN 4.1. Acceptance by the respective upper tier organizations is pending. The previous QAPD revisions were properly accepted.

Both organizations have established procedures that meet applicable requirements, including matrices showing where these requirements are satisfied. Many of the procedures have recently been or are currently being revised. One concern, (Ref. Observation No. 3), is that DWPD has not had a method for assuring that annual reviews are made of their QAPD and procedures. A number of the procedures were substantially older than one year, suggesting that annual reviews are not taking place consistently.

Both DOE and WSRC have established site-wide policy statements making implementation of the QA program mandatory.

Much of the WSRC work governed by DOE/RW-0214 is performed by organizations other than DWPF. For example, process development is done by Savannah River Technical Center (SRTC), and document control and records management is done by Administration and Services. Until very recently, there was no contractual requirement for WSRC to implement RW-0214, so DWPF QA Department has had to take the lead in obtaining necessary implementation by these other organizations. On September 8, 1992, DOE issued a Contract Advisory Notice to WSRC requiring company-wide implementation. This Notice will require reviewing and revising the QA programs of WSRC as a whole and of those divisions that support DWPF. As noted in Observation No. 4, matrices showing where the RW-0214 requirements are met will also be needed.

Procedures for readiness reviews exist, and these reviews have been or are planned to be held at appropriate points as the plant evolves towards operation. The most recent review completed was the one for cold chemical runs (CCR), although the report had not been issued at the time of the audit. The headquarters Operational Readiness Review (ORR), to be held from September 28, 1992 to October 9, 1992, will evaluate its effectiveness.

A program for graded QA exists, but it has not yet been fully defined for items and activities important to waste acceptance. A letter dated June 26, 1992 identifies these items and activities generically but not specifically. As noted in Observation No. 2, the letter omits analytical procedure qualifications and analytical QC measures such as periodic analyses of blanks and standards.

Both DWPD and DWPF Department have performed management assessments within the past several months. These satisfy applicable requirements.

DWPD and DWPF Department are using systems for tracking the status of the resolution of significant conditions adverse to quality and QA issues.

Evaluation of QA training was conducted by interviews with cognizant personnel in the DWPD QA Programs Branch and the DWPF Training, Accreditation, QA Verifications, and Human Resource Sections of WSRC. A sample of personnel qualification and training records and selected courses were chosen and reviewed to determine compliance with the requirements contained in pertinent procedures. The DWPD and DWPF staffs typically received the prerequisite training necessary to perform their assignments. DWPD and DWPF QA organizations use Training, Indoctrination and Orientation Participation Matrices to track training. Significant improvement was noted in the organization of the documentation of personnel qualifications, certifications, and training records. The audit team did observe, however, that no requirements for documenting the qualification of personnel performing Independent Assessments have been specified (Ref. Observation No. 5).

The audit team identified four Observations for Criterion 2. This QA Program element is considered effective.

Design Control (Criterion 3)

DWPD has performed oversight activities of Criterion 3. DWPD audits 91-15-03-1012 (November 5-9, 1990) and 92-15-03-1001 (August 10-21, 1992) reviewed design control, configuration management, and software QA. The November, 1990 audit identified one Observation related to design control, and three Finding Summary Reports and one Observation related to software QA. The August, 1992 audit report had not been completed and was not reviewed by this audit team.

The design basis of the DWPF is defined by the Basic Data Report (BDR), initially prepared by DuPont in 1980. A number of problems (Ref. Observation No. 6) related to the review, approval, and distribution of the BDR were noted during this audit.

Intermediate level design documents, such as system requirements, design criteria, or system descriptions, have not been prepared. EM-343 auditors were told during a previous audit of DWPF that existing Process Descriptions (DPSOPs) were not considered to be "design documents". The WSRC Configuration Management Plan (CMP), discussed below, identifies the intent to establish the DWPF design basis by a "Design Basis Document" (DBD) and the design input requirements by "System Design Descriptions" (SDD) by the start of "Radioactive Operations". Although a writer's guide had been prepared for the DBD and SDDs, the guide had not been approved, nor had provisions for the review and approval of SDDs been defined in DWPF quality implementing procedures. The specific systems (approximately 80) to be included in SDDs had not been finalized (Ref. Observation No. 7)

The DWPF CMP, (WSRC-IM-92-07, Rev.), was approved August 16, 1992, and it applies to the Vitrification Facility (S-Area) and the Saltstone Facility (Z-Area) but does not include the F-Area or H-Area Tanks. The DWPF CMP provides a strategy for a Configuration Management Program consistent with the overall WSRC Site CMP (WSRC-RP-90-257), following guidance of NUMARC 90-12 and DOE document NE F 1-2T. Although the DWPF CMP provides for the configuration baseline to be completed and approved by the start of Radioactive Operations, the CMP objectives, should be established prior to initiation of Qualification Runs to assure the integrity of the process validation data to be presented in the DWPF Waste Form Qualification Report (WQR).

The DWPF Waste Form Compliance Plan (WCP), (WSRC-IM-91-116-0, Rev.), was approved by WSRC-DWPF, June 1992. The WCP was prepared following the provisions of the June 1991 Draft Waste Acceptance Preliminary Specifications (WAPS) in lieu of the published WAPS, DOE/RW-0260, July 1989, per EM-30 direction dated 10/8/91. The draft WAPS was subsequently rescinded by DOE/RW as DCP-54. DOE/RW is expected to submit a Waste Acceptance System Requirements (WASR) document for DOE/EM and vitrification projects review and comment, but the WASR will probably not address all the specifications of the rescinded WAPS, to which the WCP was written. As a result DOE/EM will need to establish a generic requirements document (specification) to link the WASR to the vitrification projects WCPs.

The audit team reviewed numerous documents related to the development of the Product Composition and Control System (PCCS). WSRC-DWPF had designated PCCS as the only software "essential" to waste acceptance per DOE/RW-0214. No DWPF software was designated "high impact" as defined by WSRC QA Manual WSRC-1Q, QAP 20.1. In addition to PCCS, several software applications were designated as "process related". These include Distributed Control System database, graphic display, device interface, and automation software; Process

Information Management System INFOTROL, ECLIPSE, and RTAC application software; Laboratory Information Management System Oracle language interfaces; and Programmable Logic Control interlock and sequence programs. An additional software model, (CPES) Chemical Process Evaluation System, was used as the "Flowsheet Model" for waste glass composition estimates per WCP, Part 3, Item 100. SRTC personnel indicated that CPES was considered neither high impact nor essential software; nonetheless, a document provided to the audit team, WSRC-MS-91-401, states "The primary application of the integrated waste processing model has been to provide the basic data for the design and construction of the DWPF."

WSRC Quality Implementation Standard Practice SOP-QI-620-3, Rev. 2, 5/18/92, Paragraph 2.2.4, identifies DOE/RW-0214, Rev. 4, Appendix B, Section 3.3 and thereby, Section 19.6 (only) of the basic QARD as applicable to the PCCS development. Section 19.6 addresses only "qualification of existing software"; other paragraphs of Section 19, required by Appendix B of the QARD, have not been identified as applicable by SOP-QI-620-3. Those paragraphs include provisions for software QA plans, software verification and validation (V&V), software configuration management, documentation, reviews, discrepancy reporting, and media control. In spite of the limited applicability of DOE/RW-0214 described by SOP-QI-620-3 ("Software QA Plan" for PCCS), SOP-QI-620-1, Rev. 3, 8/7/92, does identify the requirements of RW-0214, Section 19, and NUREG-0856, "Final Technical Position on Documentation of Computer Codes for High-Level Waste Management", as applicable to PCCS. The Task QA Plan and Software QA Plan Supplement, listed above, reference RW-0214, as applicable to the development of PCCS.

The audit team identified two Observations for Criterion 3. The effectiveness of this QA Program element is considered indeterminate.

Procurement Document Control (Criterion 4)

DWPD has performed oversight activities of Criterion 4. DWPD audit 92-15-03-1003 (February 2-12, 1992), which reviewed procurement document control and control of purchased material identified three Finding Summary Reports and two Observations related to these criteria. Construction purchase requests, under the Bechtel scope of work, were excluded.

Procurements are processed by WSRC Procurement and Materials Management Department located offsite in Aiken, SC. The following bulk chemical purchase orders (PO) were reviewed with the cognizant technical engineer and QA reviewer for identification of applicable technical requirements, acceptance criteria, and quality assurance terms and conditions.

AA84327H, 10/21/91, Monosodium Titanate
TA00717H, 6/24/92, Frit 202
TA00718H, 6/30/92, Sludge Feed Simulant
TA00719H, 6/30/92, Potassium (K) Salts

Procurement (Product) Specifications had been prepared and approved for each PO and included required material quantities, composition, component tolerances, trace element limits, physical requirements, and batch sample provisions. The specifications also identified applicable quality program criteria per RW-0214, and NQA-1-1989.

This QA Program element is considered effective.

Instructions, Procedures and Drawings (Criterion 5)

Evaluation of this QA Program element was conducted by interviews with DWPD WC&QA Branch, DWPF Startup Administration Support Department (SASD), and DWPF Controls Management. A review of DWPD and DWPF documentation and procedures was conducted to determine compliance with requirements. DWPD and DWPF have instructions, procedures, and drawings that provide instructions for activities which affect quality.

This QA Program element is considered to be effective.

Document Control (Criterion 6)

Evaluation of this QA Program element was conducted by interviews with personnel from the DWPD WC&QA Branch, Program Management (PM) Branch, DWPF SASD, and DWPF Controls Management.

DWPD has established their Document Control System through the PM Branch Chief. The DWPD QAPD and Implementing procedures distribution lists are developed by the PM Branch and maintained by the Administration Officer.

DWPF has established their Document Control System through the Controls Management, Document Control Division which serves as the centralized document control center for DWPF. Documents that are to be controlled are processed through the Document Control receipt inspection, logged and processed for distribution. Initial distribution lists are prepared by the originator of the documents and forwarded along with the document to the document control center for processing. Distribution lists are kept by the document control center and periodically updated by the originating organization.

The audit team noted one Deficiency and one Observation for Criterion 6. This QA Program element is considered marginally effective.

Control of Purchased Items and Services (Criterion 7)

DWPD has performed oversight activities of Criterion 7. The WSRC Evaluated Supplier List (ESL) is maintained by Procurement Quality Assurance as an on-line, site wide, data base accessible through the Savannah River Site computer network. The following suppliers of bulk chemicals listed under Criterion 4 were included on the WSRC ESL distributed 3/2/92.

<u>Purchase Order</u>	<u>Supplier</u>	<u>Evaluation Due</u>
AA84327H	Boulder Scientific, Mead, CO	5/22/93
TA00717H	Cataphote, Flowood, MS	11/07/94
TA00718H/19H	Optima Chemical, Douglas, GA	6/12/93

None of the bulk chemicals purchased for CCRs had been shipped to the DWPF therefore receipt of bulk chemicals was not reviewed.

This QA Program element is considered effective.

Identification and Control of Items (Criterion 8)

DWPD has performed oversight activities of Criterion 8. DWPD audit No. 92-15-03-1003 also reviewed Central Shops spare parts warehouse and the DWPF Temporary Storage Facility. No Finding Summary Reports or Observations were identified related to this criterion.

Physical identification of HLW glass canisters is by serial number, using weld overlay, in characters approximately 2" high. No new canisters had been purchased since the previous EM-343 audit in February 1991; therefore, canister identification was not further checked during this audit.

Bulk chemicals are to be identified by batch/lot number and WSRC PO number. Verification of bulk chemical identification and traceability was not accomplished because CCR source chemicals and sludge simulants had not been delivered to DWPF.

Cognizant WSRC personnel provided the status of activities to respond to various DOE/NE, DP, and EM memos related to suspect parts. The actions to assess suspect fasteners included issuance of "Quality Alert" 91-1, initiation of a Task Group to perform a fastener inventory and specification review, site wide sample and test, a critical application review, Material Review Board disposition, establishment of a single source of supply, and preparation and issuance of a final report (EES-910015). Actions were completed May 10, 1991. Planning actions to identify possible substandard parts were started in October 1991. Initiation of the review program for substandard parts is planned for October 1991.

This QA Program element is considered effective.

Control of Processes (Criterion 9)

Evaluation of this criterion was conducted by interviews with the DWPD Operations Branch (OB), DWPF QA Department, DWPF Maintenance Department, and the Site Services Quality Group, including a review of welding and nondestructive examination (NDE) procedures and personnel certifications. DWPD OB delegates the oversight responsibilities to DWPF.

The DWPF Maintenance, Operations, and Production Departments use detailed manuals for welding standards referenced in SOP-QI-609-1: Y12 "Welding Control Manual" and Y16 "SRS Procedures Manual for Welding and Other Joining Processes." The audit team noted that Section 5.6.6 of SOP-QI-609-1, Revision 6, did not indicate Y12 and Y16 Manuals, but the use of DPTSM-88-7001-12, "Welding Procedures Qualification Manual." This discrepancy was corrected during the course of the audit. Individuals performing maintenance welding activities will be qualified to Section 9 "Welding and Brazing Qualifications" of the ASME Code. These qualifications are controlled by the Central Services Works Engineering Department. A DWPF welding parametric study will be conducted in the near future. A Task Technical Plan for Phase 1 - Plug Welding (Document #22152-TTP) is going through a review cycle along with test procedures, "Bend Specimen Testing of DWPF Plug Weld Canisters" and "High Pressure Lab Testing of DWPF Weld Canisters". These procedures have been drafted and are undergoing internal review.

NDE procedures such as "Site Engineering: Services Quality Assurance/Quality Control NDE Procedures" were reviewed. A review of welding and NDE documentation was also conducted. A sample of certified plug welders and NDE personnel certifications was selected, and records were reviewed to determine compliance with the procedures mentioned previously.

Currently, there are no special processes being performed within the waste acceptance envelope. Processes requiring special controls will be defined in the distant future.

The audit team identified one Observation for Criterion 9. Due to the lack of activity in this area, this QA Program element is considered to be indeterminate.

Inspection (Criterion 10)

DWPD has delegated the inspection activities to WSRC. The audit team reviewed the DWPF inspection programs for compliance to their QAPD and evaluated the implementation of the program. Through review of implementing procedures the audit team concluded that the DWPF inspection program is in compliance with applicable requirements.

The procedures adequately address the essential elements required of an inspection program. During the review, specific emphasis was placed on the independence of inspection personnel, the method of establishing inspection points (Hold/Witness), qualification of inspection personnel, identification of nonconformances, and the method of documenting inspection results.

The following procedures were reviewed and evaluated for compliance:

WSRC DWPF

- a. SOP-QI-610-1, Rev. 4 (2/22/92) "Quality Verification Inspections"
- b. SOP-QI-610-2, Rev. 1 (7/15/92) "Independent Inspections"

WSRC SRTC

- a. QSP 10-1, Rev. 1 (10/15/90) "Inspection"
- b. QSP 10-2, Rev. 1 (10/15/90) "Inspection Planning"
- c. QSP 10-3, Rev. 1 (10/15/90) "Independent Inspection Release"

Verification of implementation was accomplished through review of randomly selected work packages, associated inspection records, and personnel qualifications. The areas evaluated were maintenance, operations, and SRTC. The audit team concluded that the independent inspection program is being effectively implemented and meets the requirements of the procedure.

Inservice Inspection and Production Inspection were not evaluated since the plant is not in operation at this time. It was determined however, that DWPF has not established an Inservice Inspection program. This was previously identified in a DWPF self assessment in September 1991. Based on the current schedule for operations, consideration should be given to the establishment of the Inservice Inspection program.

The area of peer verification was also evaluated. The operations department has a peer inspection program in place for tag and lockouts and valve alignments. However, it was determined that the maintenance department has not instituted a peer verification program as required by SOP-QI-610-1. This condition was identified in a DWPFQ department assessment in May 1992. To date no peer verification program has been put in place to date (Ref. Deviation No. 2).

The audit team identified one Deviation for Criterion 10. This QA Program element is considered to be effective.

Test Control (Criterion 11)

Evaluation of this criterion was conducted by interviews with DWPD OB and DWPF Startup Department, and Technical & Engineering Departments, including its compliance with SOP-QI-611-1 "DWPF Test Control," Revision 4, 12/31/91.

The DWPD OB (which includes the DWPD Chief Test Engineer and/or an alternate) participates as a permanent member of the Joint Test Group, which reviews and approves all startup procedures and testing. A DWPD Quarterly Inspection Schedule identifies surveillances to be conducted for test control activities (Ref. Observation No. 10).

A status of testing activities identified in SOP-QI-611-1 is as follows: pre-installation proof and development tests are currently being performed at TNX and are not considered to be waste acceptance tests, but mainly are experimental or technical/research and development activities; pre-operational tests are ongoing. Approximately 15 surveillance test procedures have been prepared and are currently awaiting approval. One recently completed procedure was reviewed by the audit team: SOP-422-S-3343 "Surveillance Requirement for 22-S Organic Acid Sump Pump and Level Instrumentation." This test verifies the Operational Safety Requirement WSRC-RP-92-838 "Organic Acid Drains System Operability" and satisfies functional test requirements for 10 devices located in Bldg. 422-S. A review of an index for surveillances noted that there are 24 surveillance procedures in preparation for various activities, such as "Visual Inspection of Formic Equipment and Nitric Equipment" and "Functional Test of MC at OUST," and "Calibrate Outer Tank Sump Level."

A sample of 19 approved DCS test procedures taken from the Test Procedure Log were reviewed at Document Control for compliance with SOP-QI-611-1. These procedures are reviewed by the DWPD Chief Test Engineer and/or an alternate.

SOP-CM-8.01 "Post-Maintenance Testing," Revision 2, 9/12/92 establishes program requirements for the development and documentation of post-maintenance testing which verifies components of systems capable of performing their intended function when returned to service following maintenance and ensures that the original deficiency was corrected.

Post-modification tests have not been conducted to date. The approval process for the startup/test procedures reviewed at Document Control was in compliance with SOP-QI-611-1. Each test procedure is signed by the Cognizant Engineer, Manager for Process Cognizant Engineering, Manager for Operations, and DWPF QA Engineer. Some of the elements contained in the test procedures included: calibrated instrumentation, trained/certified personnel, mandatory inspection hold points, acceptance/rejection criteria, test prerequisites, and data collection/storage. Startup/test procedures for waste acceptance (WP) and equipment verification (FA) are approved by the Joint Test Group which consists of a Operations Representative, Tech & Engineering Representative, DOE Chief Test Engineer, and Chairman. The audit team reviewed four WP and five FA procedures.

The audit team identified one Observation for criterion 11. This QA Program element is considered effective.

Control of Measuring and Test Equipment (Criterion 12)

Personnel responsible for control of M&TE (portable and fixed) were interviewed, equipment was examined, and documentation was reviewed to verify that tools, gages, instruments, and other measuring and testing devices are properly identified, controlled, calibrated, and adjusted at specified intervals.

Specific evaluations were performed by the audit team to verify that organizational responsibilities are adequately described for establishing, implementing, and ensuring the effectiveness of the calibration program, including review and concurrence with the procedures. The program description is addressed in SOP-Q1-612-1

Descriptive procedures are established for calibration, maintenance and control of M&TE used in measurements, monitoring, and inspections. Currently, 901 procedures exist to support the total inventory of portable and fixed M&TE at DWPF.

Calibration is performed at specified intervals, based on an items required accuracy, intended use, frequency of use, stability characteristics, and other conditions affecting its performance. Frequency may also be based on manufacturer's recommendations and user input. Calibration is performed against standards having a 4:1 accuracy ratio, ensuring that equipment being calibrated will be within required tolerances. Reference and transfer standards are traceable to nationally recognized standards.

M&TE is labeled, tagged, or otherwise controlled to indicate its calibration status and to ensure traceability to calibration test data. The Maintenance group receives calibration procedures for fixed plant instruments from work control group. Trained and experienced calibration technicians proceed with the required calibration, often using a Loveland Calibrator that is pre-programmed with the test parameters for the calibration. Tests are performed using electrical, pneumatic, mechanical and synthetic media; then test results are down-loaded into the main database after the successful calibration. As-found and as-left conditions are recorded, with other essential information (operator, date, time, etc.).

Procurement documents for M&TE provide detailed instructions for the calibration and servicing to be performed, including standards to be used and data to be recorded and supplied to the purchaser. Purchase requisition No. D72483 was reviewed for verification.

Suppliers of calibration services are periodically audited by the site QA group when requested by DWPF/WSRC.

Both manual and automated recall systems are used. M&TE found out of calibration is tagged or segregated and not used until it is successfully recalibrated. M&TE calibration procedures are verified as current by the work control group upon assembly of work packages for calibration.

The DWPF Metrology and Maintenance groups share the custodial responsibility and perform the control function for portable M&TE. Fixed M&TE (installed plant equipment) is under the control of the Maintenance group. M&TE for Health Physics applications is under the custodial responsibility of the HP group. Approximately 25 various portable M&TE items were reviewed to verify current calibration. A system is established for removal and correction of out-of-calibration equipment.

The DWPF cold prep/cold feed area was visited to verify the calibration status of six randomly sampled fixed instruments. All instruments were found to be in order.

A tour of the Central Control Room (Building 210S, Room 82) was conducted. The equipment present in control room does not require recurring calibration, since all process monitoring information is transmitted electronically and displayed on color monitors at the control room.

Multiple terminals and databases are used by various operator/ technicians, allowing the potential for differing data to be entered for the test or calibration (Ref. Observation No. 11). This condition was observed twice during a demonstration of the system. The process whereby the data is compared to ensure consistency of data between terminals is performed monthly, and requires approximately one man-day of effort for each terminal; the terminals are checked simultaneously. This system should either be automated and "real time", using a "referee" database to detect inaccurate entries at all participant terminals, or the existence of multiple databases should be merged into a single system with an automated, real-time, referee database feature.

Inaccurate data may be entered into the Loveland System and subsequently used during facility operation, resulting in unacceptable quality of the wasteform product. This condition was recognized as a potential problem by WSRC, and a system upgrade has been scheduled for installation in November, 1992. The upgrade will result in a single database that may be linked to a "referee" terminal for screening of data entries for accuracy.

The audit team identified one Observation for Criterion 12. This QA Program element is considered effective.

Handling, Storage, and Shipping (Criterion 13)

Evaluations of this criterion were conducted through interviews with DWPD and DWPF QA personnel, interviews and storage facility examinations with DWPF Material Control, Warehousing & Plant Services personnel, examinations of WSRC site storage facility environmental control and inspection records, and reviews of criterion 13 internal audit, surveillance and corrective action documentation.

The DWPD QA Program is aggressively identifying and documenting long-standing problems, and DWPF personnel are addressing needs for wide-spread corrective action but timely completion of a comprehensive corrective action plan is required. (Refer to Observation No. 12). It was verified that controlled storage space had been established for the receipt of dry CCR materials.

The Audit team identified one Observation for criterion 13. This QA Program element is considered to be marginally effective.

Inspection, Test, and Operating Status (Criterion 14)

Evaluations of this criterion were conducted through interviews with members of the DWPF QA organization, the DWPF Operations Manager, and various members of the DWPF Operations staff responsible for implementation of procedure SOP-QI-614-1 and related Operations procedures. A sample survey of the application of status indicators within the DWPF facility was also conducted. Appropriate documentation and physical identifications of the status of items was verified.

The audit team suggested that the responsibility of Facility or Equipment Custodians perform periodic safety inspections in accordance with the WSRC Employee Safety Manual and Engineering Standards on installed equipment (ref. SOP-QI-614-1, para. 5.2.2) be clarified since, on a day-to-day basis, this is considered only an informal monitoring activity for most custodians.

This QA Program element is considered to be effective.

Control of Nonconforming Items (Criterion 15)

Evaluation of this criterion was conducted by interviews with DWPD and DWPF personnel, a review of the nonconformance procedures in place for each organization, and an evaluation of the implementation. This evaluation included a review of randomly selected Finding Summary Reports (FSR) and Nonconformance Reports (NCR) (Deficiency Documents) and associated logs and /or tracking systems.

The audit team concluded that both DWPD and DWPF are deficient in not taking appropriate corrective action when responses to NCRs are delinquent (Ref. Deviation No. 3). Both organization's procedures require that specific actions be taken when responses to deficiency documents are not received in the required and/or requested time frame. This condition not only contributes to the untimely dispositioning and/or close out of deficiency documents but also instills an attitude that departure from procedural requirements may be acceptable. It should be noted that the deficiency documents are tracked and the status is being provided to appropriate levels of management on a routine basis. It appears, however, that the attention given to a specific deficiency report is predicated on the priority and/or significance of the deficiency rather than procedural requirements to respond within the required time frame.

The audit team identified one Deviation for Criterion 15. This QA Program element is considered to be effective.

Corrective Action (Criterion 16)

Interviews were conducted with DWPD Programs and WC&QA and DWPF QA Department to evaluate Criterion 16. DWPD findings and deviations resulting from an audit, surveillance, or review are documented on a Deficiency Report and are inputted into the Issues Management System database. This database, which was established in February 1992 also provides a listing of all commitments, action items (including findings from DOE Headquarters), and issues which, if not resolved in a timely manner, could adversely impact the safety, operations, or startup schedule for DWPF. It is also used to identify previously unidentified quality problems and adverse quality trends. A manually inputted trending program is currently in use. An automated sitewide program is being developed. SWEC has been assigned the task of status and tracking of these open items.

Information collected from DWPF Quality Surveillance Reports, NCRs, Inspection Reports, ORR action items, DOE/DWPD FSR, and ESH&QA Audit Findings are coded, analyzed, and trended in accordance with WSRC 1Q QAP 19. CARs 92-CAR-05-001, 92-SUR-05-0010, and FSR 91-15-03-1014 were reviewed for compliance with SOP-QI-616-1.

This QA Program element is considered effective.

Quality Assurance Records (Criterion 17)

Evaluation of the QA Records program was conducted by interviews with cognizant personnel in the DWPD WC&QA Branch Directors Office and the DWPF / WSRC Site Services Records Management area. Record identification, collection, processing, transferring, storage, and retrieval methods were observed. These processes were in compliance with the requirements contained in pertinent procedures.

It was observed that DWPF Site Services Records Management area does not have adequate storage for incoming records (Ref. Observation No. 13). Records are maintained for an extended period of time, awaiting space, on top of the file containers. This may jeopardize the protection of these records.

The Audit Team identified one Observation for Criterion 17. This QA Program element is considered effective.

Audits (Criterion 18)

Due to recent reorganizational activities within the SR Field Office, the audit team pursued a concern at the next higher organizational level regarding this Office's role in performing oversight of the DWPD and its scope, plan, and schedule for such oversight. The Director of the recently-organized Performance Assurance Office (PAO) has been involved with these responsibilities for about three months, and stated the priority targets for oversight included safety issues, DOE Order compliance, support services, and self assessments. The Director further stated that these areas of interest would be prioritized based on historical significance, headquarters concerns and needs expressed and services requested by the SR Field Office organizations for "independent" oversight.

Until the issuance of a Charter for the PAO of the SR Field Office during the week of the audit, it had not been evident that plans existed to overview the DWPD from a QA program perspective (assessment of DWPD activities that are outside the waste acceptance "envelope" governed by DOE/RW-0214). The recent SR reorganization has produced a significant gap in the frequency of QA oversight activities by DP and a lack of continuity with respect to planned and systematic QA verification. Considering the high visibility of the DWPF startup activities, historical concerns over plant configuration, program evolution, risk and safety, and significant recent concerns identified in the July, 1992 Independent Technical Review of SRS DWPF Technical Issues (DOE/EM-0080T), the DWPD is considered a prime candidate for overview by an independent site organization. With exception of two annual management assessments required by DOE/RW-0214 and requested by DWPD (performed by the Quality and Materials Assurance Division in 1991 and the Quality Programs Division in 1992), there has been no QA program oversight by the SR Field Office.

Although individual organizations are responsible for self-assessment, there was no apparent system, until the issue of the PAO Charter, that encompassed the total result of the individual efforts. Such a system would typically evaluate the parts, the mean, and the total posture of quality programs for the SR Site. With the implementation of the PAO Charter, this concern has diminished somewhat, but the evolution of PAO independent oversight activities should be periodically reviewed by DOE-DP and DOE-EM for effectiveness and proper application.

Evaluation of this criterion was conducted by interviews with DWPD, WC&QA Branch and SWEC. In addition, interviews were conducted with the WSRC, DWPF QA personnel who perform surveillance activities and the WSRC QA Audits organization which performs audits of DWPF activities.

The audit team reviewed the DWPD E&A schedule and found it had not been approved by the WC&QA Branch Chief and the Division Director. This was corrected during the audit.

The DWPF surveillance schedule was prepared to reflect an 18 month period. All criteria of the QA Program are scheduled for surveillance during the next twelve month period. The WSRC Quality Assurance Audit (QAA) group schedule included four audits of DWPF. Only one audit addressed the QA Program. It is questionable that effective oversight of the DWPF QA Program can be achieved with only one audit. It is recommended that DWPD develop a comprehensive, integrated QA audit program for FY93 with more participation by the WSRC QA department and emphasis on all glass work at the WSRC labs (potential WAS/WCP work). Participation by DOE-SR Operations and WSRC DWPF should be considered. These audits should be patterned after the excellent, comprehensive audits conducted by DOE DWPD on WSRC DWPF operations during FY92.

Five audit files prepared by QAA were reviewed and found to contain all required documentation. In addition, each file contained a checklist for assuring the quality record package was complete. Three audits, four surveillances and two independent assessment files were evaluated for DWPD. All documentation requirements were satisfactory. Reports are appropriately approved and distributed in an timely manner.

Fourteen files of DOE, Stone & Webster Engineering Company (SWEC) and independent assessors were reviewed. All DOE and SWEC personnel qualification and certification files were satisfactory. It was noted that no records for certification and qualification of subcontractors brought in to perform independent assessments could be located. This is a violation of DOE-SR-2006-2, Rev.3. Section 2.4. In addition, HLW 8.02, Rev. 1 does not address qualifications for assessors. Ten files of QAA auditors were requested and reviewed. All files were satisfactory.

Findings are being entered into the DWPF tracking system and discussed in periodic management meetings. The mechanics are in place for a workable system. However, even with management review of open items, there are still open actions dating to 1990 and 1991. The follow up and close out is ineffective.

Independent management assessments were performed by DWPD in May 1991 and August 1992 instead of February of each year (Ref. Deviation No. 4). Independent assessments are not performed by DWPF, but they are covered by QAA and DWPD oversight. However, self assessments are performed annually by DWPF.

DWPF maintains an effective trend analysis report which includes findings from DWPD and QAA audits as well as internal DWPF surveillances. This report appears to be effective and current revisions to the QAP 19-1 should further improve the usefulness of the trend report. DWPD does not maintain its own trend report. Since internal audits of the QA Program have not been conducted, an internal trend report has not been required. The lack of internal audits has been identified as a finding earlier in this report.

Internal audits of the adequacy and effectiveness of the DWPD QA Program are not being performed by DWPF at least once a year as required by procedure. Although DOE-SR Operations conducted a management assessment and DWPD conducted internal audits of their ORR system during FY90, 91, and 92 (primarily against the ORR Program Procedures Manual - "DPP" procedures), no internal audits of the DWPD QA Program Procedures Manual (approximately 40 DWPD/HLW procedures covering all appropriate RW 0214/NQA-1 criteria) were identified during the same 3-year period (Ref. Deviation No. 5).

The audit team identified two Deviations and one Observation for Criterion 18. This QA Program element is considered marginally effective.

VI. DEVIATIONS AND OBSERVATIONS

DEVIATIONS

Deviation No. 1 (Criterion 5)

Contrary to the requirement of Section 6.3.1. of DOE-SR-2006, comments are being made and incorporated into the DOE-DWPD QA procedures with very little evidence of the resolution process and documentation of the resolution process in the QA Procedure files maintained by SWEC for DOE/DWPD. The comments reviewed were not of a major consequence but still there was very little evidence of the resolution of the comments that were made.

Deviation No. 2 (Criterion 10)

Contrary to the requirements of paragraphs 5.6 and 5.8, of SOP-QI-610-1, there was no objective evidence that peer verifications are planned, performed and documented to demonstrate compliance to this requirement within the maintenance organization. This deviation was previously identified during a DWPF Quality Department Assessment in May 1992. To date no peer verification of "direct" maintenance work is accomplished nor are there any procedures in place addressing the requirements of peer verification.

Deviation No. 3 (Criterion 15)

Contrary to the requirements of HLW 5.01 and SOP-QI-615-1, a Management Action Request was not issued when a responsive and timely disposition of a nonconformance could not be obtained, and the reason for the delay and anticipated date was not entered in section B of the original NCR and a copy sent to the DWPF Quality NCR Coordinator.

Deviation No. 4 (Criterion 18)

Contrary to the requirements of HLW 8.02 the 1991 assessment was performed in May and the 1992 assessment was performed in August instead of February of each year.

Deviation No. 5 (Criterion 18)

Contrary to the requirement of HLW 4.01 internal audits of the adequacy and effectiveness of the quality assurance program are not being performed at least once each year by DWPD.

OBSERVATIONS

Observation No. 1 (Criterion 1)

At present there are no plans for DWPD to provide refresher training on the procedure for Allegations and Disputes and the RW Hot Line.

Observation No. 2 (Criterion 2)

Analytical procedure qualifications and laboratory QC measures are not included in the June 26, 1992 listing of systems, procedures, and activities important to Waste Acceptance.

Observation No. 3 (Criterion 2)

At present there is no method for DWPD to assure that the QAPD and implementing procedures are reviewed annually for compliance to the applicable QA requirements (e.g. RW-0214).

Observation No. 4 (Criterion 2)

WSRC divisions other than DWPF must establish a requirement matrices to assure compliance to RW 0214.

Observation No. 5 (Criterion 2)

The DWPD procedure for Independent Assessments does not address the documentation requirements of personnel qualification for the individuals who perform the assessments.

Observation No. 6 (Criterion 3)

BDR (Rev. 139) has not been forwarded to Document Control for issue. Previous versions do not appear to have been controlled either.

Observation No. 7 (Criterion 3)

Measures to establish administrative controls for the preparation, review, approval, and issuance of the DBD and SDD and to have a baselined DWPF design under configuration control prior to Qualification Runs, in lieu of Radioactive Operations has not been prepared.

Observation No. 8 (Criterion 6)

It appears that the DWPF/WSRC Control System for procedure manuals is not being properly implemented. Seven manuals were checked and they did not contain the most recent revisions as indicated by the Document Control controlled indices. Three manuals were found to contain expired Immediate Revision (IR).

The Procedure Change Request/IR also appears to be approaching the limits of the QA Program requirements for the review, concurrence, approval, and cancellation provisions. The review and approval is, in some cases, not the same as the original review and approval cycle. The intent of this IR cycle is to allow the organization to effect changes to documents in an orderly process, so work is not unduly interrupted. DWPF/WSRC appears to be abusing the process by trying to revise all the procedures using the IR process to meet an established milestone date, thus neglecting the QA Program requirements in the process.

Observation No. 9 (Criterion 9)

Contrary to the requirements of RW-0214, Section 9.1 of Appendix B and Section 5.1.3 of SOP-QI-609-1, there was no objective evidence to indicate that the production process which falls under the waste acceptance envelop is identified as a special process.

Observation No. 10 (Criterion 11)

The DWPD "Operatons Branch Quarterly Inspection Schedule" identifies surveillances to be conducted for test control activities. To date, no schedule has been generated for the 3rd Quarter 1992 as required by the draft document "Facility Representative Policy Statement" (DWPD 20-01).

Observation No. 11 (Criterion 12)

Multiple terminals and databases used with the "Loveland System" for control of M&TE may contain inconsistent or inaccurate data until the terminals are manually compared for accuracy and consistency each month.

Observation No. 12 (Criterion 13)

Although considerable progress had been made in acquiring new level B storage space required for material that had been stored in level C areas, relocating many items, and rectifying a variety of mishandling, identification and documentation problems, all corrective actions have not been completed or verified.

Observation No. 13 (Criterion 17)

DWPF SOP-QI-617-0, Revision 4, Section 5.11.2 requires that interim or protected storage of records shall be in 1-hour fire rated containers.

DWPF Site Services Records Management Area does not have adequate storage for incoming records. Records are maintained for an extended period of time, awaiting space, on top of file containers. This condition jeopardizes the protection of these records.

Observation No. 14 (Criterion 18)

A limited number of QA audits were conducted during FY92 . These included

DOE-SR Operation-	No audits of DWPD/DWPF
DOE-SR DWPD-	4 Audits of WSRC QA DWPF (totalling 18 criteria)
	1 Audit of DWPD ORR process (internal)
WSRC DWPF-	None
WSRC QA Dept.-	1 Audit of selected DWPF Quality elements
	1 Audit of DWPF Support Services organization

There were no QA audits of the DWPF work being conducted by the WSRC Technical Center Glass Technology Group and support laboratories during FY/92.

A written response is required for all observations.

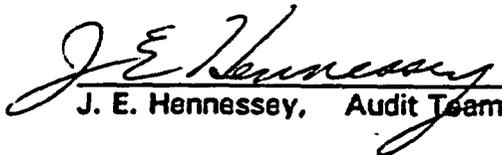
SUMMARY

Evaluation of the deviations and observations described previously indicate that the overall effectiveness of the DWPD QA Program was deemed effective. The program was determined to be effective for criteria 1, 2, 4, 5, 7, 8, 10, 11, 12, 14, 15, 16, and 17. The remaining criteria will be the subject of a future audit to be scheduled at a later date.

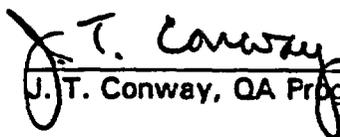
VII. POST AUDIT-MEETING

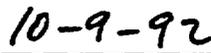
The audit team held a post audit meeting on September 18, 1992, at 11:00 a.m. The ATL presented a summary of the audit teams concerns and observations to the DWPD and DWPF management, including the positive program elements and the audit team's approach to categorizing the audit results. Closing comments were given by Mr. Clyde Terrell, Director -DWPD.

VIII. AUDIT TEAM LEADER/QAPM CONCURRENCE:


J. E. Hennessey, Audit Team Leader


Date


J. T. Conway, QA Program Manager


Date

ATTACHMENT 1

AUDIT MEETING ATTENDEES AND CONTACTS

**ATTACHMENT 1
LIST OF AUDIT MEETING ATTENDEES AND CONTACTS**

**A = ATTENDED PRE-AUDIT MEETING
B = ATTENDED POST-AUDIT MEETING
C = CONTACTED DURING THE AUDIT**

NAME/ORGANIZATION	A	B	C		NAME/ORGANIZATION	A	B	C
DOE/DWPD					WSRC/DWPF			
C. TERRELL		X			L. WICKAS	X		
W. PEARSON	X	X	X		R. HINDS	X	X	X
J. SMALLEY	X	X	X		S. MARRA	X		
D. COWART	X	X	X		A. RAMSEY			X
T. GUTMAN	X	X			R. SCHWAMBERGER			X
D. NELSEN	X	X	X		W. BOYD			X
H. GNANN			X		B. BUTLER			X
W. SPADER			X		R. PIKARD			X
R. JAWOROWSKI			X		P. DEECE			X
M. ROGAL			X		M. CARLSON	X	X	X
C. JEANFREAU			X		O. FRANCIS		X	X
DOE/SRFO					V. CORDARA			X
E. WEBB			X		T. SANDERS			X
E. BROADEN			X		H. KUNIS		X	X
R. ROLLINS			X		D. FENSTERMACKER			X
L. VAUGHAN			X		T. BROWN			X
DOE/EM-343					S. GOLDSTON			X
J. HENNESSEY	X	X			B. LANGFORD			X
J. CONWAY	X	X			S. WALKER			X
					D. JAMES			X
					R. BOYLESTON			X
					H. HANDFINGER			X
					S. BAGLEY			X

**ATTACHMENT 1 (Con't)
LIST OF AUDIT MEETING ATTENDEES AND CONTACTS**

**A = ATTENDED PRE-AUDIT MEETING
B = ATTENDED POST-AUDIT MEETING
C = CONTACTED DURING THE AUDIT**

NAME/ORGANIZATION	A	B	C	NAME/ORGANIZATION	A	B	C
WSRC/QAD (SITE)				WSRC/DWPF CON'T			
H. LILLIAH			X	P. JONES			X
J. WILHOIT			X	P. BROWNING, JR.			X
C. BROWN			X	H. ELDER			X
R. CHRISTIANSON			X	A. KENNEDY			X
K. GOAD				D. MELDRUM			X
R. MALLOY	X	X		A. CROSS			X
S. MASLER	X	X		J. CALLAN			X
WSRC/SRTC				BDM/SAIC/EM-343			
T. HELMS			X	S. CRAWFORD	X	X	
P. LOWE	X		X	R. STOCKMAN	X	X	
K. MOTTEL			X	B. MCCLANAHAN	X	X	
SWEC/DOE				R. TORO	X	X	
R. AGEE			X	J. LAVEA, JR.	X	X	
K. CONRAD	X	X	X	J. FLAHERTY	X	X	
W. BENZANSON			X	D. MILLER	X	X	
G. DEWEY			X	L.SIRIANNA	X	X	
G. MIKULA			X				
MACTEC/EM-343				NRC (OBSERVER)			
R. LOWDER	X	X		J. GILRAY	X	X	
C. MCKEE	X	X					
K. STRONG	X	X		CER/RW-3 (OBSERVER)			
L. WADE	X	X		C. MORELL	X	X	

ATTACHMENT 1 (Con't)
LIST OF AUDIT MEETING ATTENDEES AND CONTACTS

A = ATTENDED PRE-AUDIT MEETING
B = ATTENDED POST-AUDIT MEETING
C = CONTACTED DURING THE AUDIT

NAME/ORGANIZATION	A	B	C		NAME/ORGANIZATION	A	B	C
WSRC/DWPF (Con't)								
J. WILLIAMS			X					
R. SPRAYBERRY			X					
J. LAMBERT			X					
D. SHERBURNE			X					
J. BARNES			X					
C. DAVIS			X					
G. PENNINGTON			X					
D. PICKETT			X					
S. PRESNELL			X					
D. ROTE			X					
J. RUMSEY			X					
T. SANDERS			X					
B. VIRGO			X					
J. HEDGES			X					
F. LEACH			X					
J. HEATH			X					
M. BOWERS			X					
T. PRINCE			X					
P. HANLEY			X					
E. TAYLOR			X					
S. SHEETZ			X					

ATTACHMENT 2

EFFECTIVITY CHART

STATUS SUMMARY OF CRITERION FOR 92EA-SR-AU-04

TEAM	CRITERION NUMBER	CRITERION DESCRIPTION	EFFECTIVITY
C	1	Organization	E
C	2	QA Program	E
A	3	Design Control	I
A	4	Procurement Document Control	E
C	5	Instructions, Procedures, & Drawings	E
C	6	Document Control	M
A	7	Supplier Evaluation	E
A	8	Material Control	E
B	9	Special Processes	I
B	10	Inspection	E
B	11	Test Control	E
D	12	Control of M&TE	E
D	13	Handling, Storage, and Shipping	M
D	14	Inspection, Test, and Operating Status	E
B	15	Nonconformance	E
B	16	Corrective Action	E
C	17	Quality Assurance Records	E
D	18	Audits	M

E = Effective 13

M = Marginally Effective 3

I = Indeterminate 2

N = Not Effective 0

Overall Rating E

ATTACHMENT 3
**REPORT OF SUSPECT PARTS INVESTIGATION
CONDUCTED BY EM-20**

ATTACHMENT 3
INVESTIGATION OF DOE-S DWPF SUSPECT PARTS PROGRAM

An investigation was performed by the Office of Oversight and Self-Assessment (EM-20) on the Savannah River Defense Waste Processing Facility Suspect Parts Program during the course of this audit. The investigation was performed to evaluate the effectiveness of action taken by DOE-S in response to memos issued by Office of Defense Programs (DP), dated April 22, 1991, and by the Office of Environmental Restoration and Waste Management (EM), Aug. 13, 1991.

Each memo contained minimum requirements needed to identify and take corrective actions for suspect parts already installed or in inventory. The memos also contained guidance which should be applied to strengthen procurement practices to preclude the acceptance of suspect parts in the future. The interim plan is effectively implemented.

SUMMARY OF THE RESULT: The results of the investigation noted that DOE-S has developed and implemented an interim plan to address suspect fasteners. However, the plan does not address suspect circuit breakers. The action taken not to address circuit breakers was based on budget constraints. Suspect fasteners were evaluated to be more critical to safe operations of the facilities.

DOE-S is developing a site-wide Suspect Parts Program Plan. The plan is expected to be completed by April 1993. The plan will cover components identified as having been counterfeit in the past; a review of existing documents from NRC, DOD, etc., that identify components and deficiencies; and items such as fasteners, fuses, circuit breakers, and pipe fittings. Three separate areas will be evaluated: installed components; components on site not installed; and new procurement. Since the issuance of procurement specification (SY-0001) and implementation of the MRB's recommendations, no suspect fasteners have been reported at the DWPF.

RESULTS OF THE INVESTIGATION: The Deputy Assistant Secretary for Military Application, DP-22 (Rear Admiral J. M. Barr) issued a memo concerning Counterfeit and Substandard High Strength Fasteners, dated December 19, 1990. On January 9, 1991, DOE-S issued Quality Alert No. 91.1, which notified S organizations of suspect issues pertaining to fasteners. DOE-S have initiated an interim plan to address suspect fasteners, but suspect circuit breakers were not included in the plan due to budget considerations. Inspection activities were conducted site-wide which resulted in the discovery of approximately 130,000 suspect fasteners in inventory. At the DWPF approximate overall total of 5,905 fasteners were discovered with indeterminate quality in inventory. Another 6,000 fasteners of indeterminate quality were found installed throughout the DWPF.

A Material Review Board (MRB) was established to review critical system applications (> 500 degrees F) and recommend corrective actions. Dispositioning of the suspect fasteners was based on the MRB recommendations.

INVENTORY:

- All Grade 5 fasteners were dispositioned "use-as-is." (Based on a sampling of fasteners that were tested, both physical and chemical analysis, found to be acceptable within the specification limits).
- All Grade 8 and 8.2 fasteners with suspect head marking or no head marking (No Traceability) are to be dispositioned "Scrap."

INSTALLED:

- All suspect Grade 8 bolts in place subject to service conditions > 500 degrees F or that are used in critical application be evaluated and replaced at the discretion of the Project Management Team (PMT).

A site procurement specification, SY-0001 for bulk fasteners was issued March 14, 1991. A single supplier was selected by competitive bid for a three-year subcontract to provide the site stock store fasteners. The bulk fasteners procurement specification was mandatory.

RECOMMENDATIONS: It is recommended that the suspect parts issues be resolved, (inspection activities performed to determine the extent of suspect parts installed and in inventory, and actions taken to remove suspect parts from critical applications), at the DWPF prior to cold chemical run activities.

ATTACHMENT 4

DEVIATIONS AND CORRECTIVE ACTION REPORTS

Deviation Corrective Action Report (DCAR)

DCAR No. 92EA-SR-AU-04-01 Revision 0 Page 1 of 2

Date of Discovery 9/14/92 Evaluated Organization DWPD

Evaluated Organization Representative _____

Corrective Action taken immediately None

Activity Criterion 5 "Instructions, Procedures, & Drawings" Location Savannah River

Requirement(s) not met DWPD, QAPD, Rev. 4, Section 6.3.1 (See Attached)

Deviation description Contrary to the requirements, comments made by EM-343 on the DWPD QAPD have not been officially resolved and concurred with by EM-343. However, the DOE-DWPD has issued and distributed this document.

Corrective Actions Required:	Yes	No
- Root cause analysis	<u>X</u>	_____
- Action to prevent recurrence	<u>X</u>	_____
- Action regarding similar work	<u>X</u>	_____

Provide Response by: _____
Initiator Donald E. Miller *D. E. Miller*
QA Program Manager *[Signature]*
Program Manager *[Signature]*
Division Director *[Signature]*

Date 10-8-92
Date 10-8-92
Date 10/9/92
Date 10/9/92

Proposed Corrective Actions _____

Scheduled completion date _____

Evaluated Organization Representative _____ Date _____

Evaluation of Proposed Corrective Actions
Comments _____ Acceptable _____
Unacceptable _____

Evaluator _____ Date _____
Program Manager _____ Date _____
QA Program Manager _____ Date _____

Corrective Actions Complete:
Verified by _____ Date _____
Program Manager _____ Date _____
Verification Approved
Division Director _____ Date _____

Requirement not met;

DWPD, QAPD, Rev. 4, Section 6.3.1 states in part,.... A Record of the review sequence (including review comments and resolution) that has been accomplished is documented and retained.

Deviation description;

Contrary to the requirement, comments are being made and incorporated into the DOE-DWPD QAPD and QA Procedures without proper documentation and resolution of these comments. The DWPD QA Procedures 2.01 and 2.03 do not adequately address the requirements as referenced in the QAPD. Comments have been made by EM-343 on Rev. 3 of the DWPD QAPD that have not yet been officially resolved and/or concurred with by EM-343, but yet the DOE-DWPD-QAPD has been issued and distributed for use.

Deviation Corrective Action Report (DCAR)

DCAR No. 92EA-SR-AU-04-02 Revision 0 Page 1 of 1

Date of Discovery 9/14/92 Evaluated Organization WSRC/DWPF

Evaluated Organization Representative D. James

Corrective Action taken immediately None

Activity Criterion 10 "Inspections" Location Savannah River

Requirement(s) not met SOP-QI-610-1, Rev. 4, Para. 5.2.2 requires that Peer Inspection verifications be scheduled, performed, and documented.

Deviation description An interview with the WSRC Quality Verification Supervisor determined that WSRC Maintenance does not have a Peer Verification program in place.

Corrective Actions Required:	Yes	No
- Root cause analysis	<u>X</u>	<u> </u>
- Action to prevent recurrence	<u>X</u>	<u> </u>
- Action regarding similar work	<u>X</u>	<u> </u>

Provide Response by: _____

Initiator Louis R. Wade [Signature] Date 10-8-92

QA Program Manager [Signature] Date 10-8-92

Program Manager [Signature] Date 10/9/92

Division Director [Signature] Date 10/9/92

Proposed Corrective Actions _____

Scheduled completion date _____

Evaluated Organization Representative _____ Date _____

Evaluation of Proposed Corrective Actions Acceptable _____

Comments _____ Unacceptable _____

Evaluator _____ Date _____

Program Manager _____ Date _____

QA Program Manager _____ Date _____

Corrective Actions Complete:

Verified by _____ Date _____

Program Manager _____ Date _____

Verification Approved

Division Director _____ Date _____

Deviation Corrective Action Report (DCAR)

DCAR NO. 92EA-SR-AU-04-03 Revision: 0 Page 1 of 1
Date of Discovery: 9/16/92 Evaluated Organization: WSRC/ DWPF & DOE/SWEC
Evaluated Organization Representative: O. Francis (WSRC) & B. Bezanson (SWEC)
Corrective Action taken immediately: None
Activity: Criterion 15 "Nonconformances" Location: Savannah River

Requirement(s) not met HLW 5.01 and SOP-QI-615-1 Requires action to be taken when responses to deficiency documents are not responded to within the requested and/or required time frame.

Deviation description Neither organization (DWPD nor DWPF) is taking appropriate action, as required by procedure, to assure timely response and/or closeout of deficiency documents.

Corrective Actions Required:	Yes	No
- Root cause analysis	<u>X</u>	_____
- Action to prevent recurrence	<u>X</u>	_____
- Action regarding similar work	<u>X</u>	_____

Provide Response by:

Initiator: <u>Louis R. Wade</u> <i>[Signature]</i>	Date: <u>10-8-92</u>
QA Program Manager: <u>[Signature]</u>	Date: <u>10-8-92</u>
Program Manager: <u>[Signature]</u>	Date: <u>10/9/92</u>
Division Director: <u>[Signature]</u>	Date: <u>10/9/92</u>

Proposed Corrective Actions : _____

Scheduled completion date: _____
Evaluated Organization Representative: _____ Date: _____

Evaluation of Proposed Corrective Actions

Comments _____	Acceptable _____
	Unacceptable _____

Evaluator _____	Date _____
Program Manager _____	Date _____
QA Program Manager _____	Date _____

Corrective Actions Complete:

Verified by _____	Date _____
Program Manager _____	Date _____
Verification Approved	
Division Director _____	Date _____

Deviation Corrective Action Report (DCAR)

DCAR No. 92EA-SR-AU-04-04 Revision 0 Page 1 of 1
Date of Discovery 9/14/92 Evaluated Organization DWPD
Evaluated Organization Representative J. Smalley
Corrective Action taken immediately New procedure DWPD 8.02, Rev. 2 removed the requirement for February assessments to be performed.
Activity Criterion 18 - Audits Location Savannah River

Requirement(s) not met : HLW 8.02 5-b requires that planned and periodic independent management assessments are implemented in February of each year.

Deviation description: The 1991 assessment was performed in May. The 1992 assessment was performed in August. The intent of the requirement is to have an assessment annually (12 Mo. period.). The time period between assessments was 15 months.

Corrective Actions Required:	Yes	No
- Root cause analysis	<u>X</u>	_____
- Action to prevent recurrence	<u>X</u>	_____
- Action regarding similar work	_____	_____

Provide Response by: _____

Initiator <u>William I. McClanahan</u> <i>McClanahan, ATC for</i>	Date <u>10/8/92</u>
QA Program Manager <u>T. Conway</u>	Date <u>10-8-92</u>
Program Manager <u>Ralph E. Bell</u>	Date <u>10/9/92</u>
Division Director <u>Ralph E. Bell</u>	Date <u>10/9/92</u>

Proposed Corrective Actions _____

Scheduled completion date _____
Evaluated Organization Representative _____ Date _____

Evaluation of Proposed Corrective Actions Acceptable _____
Comments _____ Unacceptable _____
Evaluator _____ Date _____
Program Manager _____ Date _____
QA Program Manager _____ Date _____

Corrective Actions Complete:
Verified by _____ Date _____
Program Manager _____ Date _____
Verification Approved
Division Director _____ Date _____

Deviation Corrective Action Report (DCAR)

DCAR No. 92EA-SR-AU-04-05 Revision: 0 Page 1 of 1
Date of Discovery 9/14/92 Evaluated Organization DWPD
Evaluated Organization Representative: J. Smalley
Corrective Action taken immediately: None

Activity: Criterion 18 - Audits Location: Savannah River

Requirement(s) not met: HLW 4.01 states "Internal audits of the adequacy and effectiveness of the quality assurance program shall be performed at least once each year."

Deviation description: DWPD has not conducted internal audits of its QA Program during the past year. The only internal audit was related to their ORR Program.

Corrective Actions Required:	Yes	No
- Root cause analysis	<u>X</u>	_____
- Action to prevent recurrence	<u>X</u>	_____
- Action regarding similar work	<u>X</u>	_____

Provide Response by:

Initiator: <u>William I. McClanahan</u>	Date <u>10/9/92</u>
QA Program Manager: <u>[Signature]</u>	Date <u>10-8-92</u>
Program Manager: <u>[Signature]</u>	Date <u>10/9/92</u>
Division Director: <u>[Signature]</u>	Date <u>10/9/92</u>

Proposed Corrective Actions _____

Scheduled completion date _____

Evaluated Organization Representative _____ Date _____

Evaluation of Proposed Corrective Actions
Comments _____ Acceptable _____
Unacceptable _____

Evaluator _____	Date _____
Program Manager _____	Date _____
QA Program Manager _____	Date _____

Corrective Actions Complete:

Verified by _____	Date _____
Program Manager _____	Date _____
Verification Approved	
Division Director _____	Date _____

memorandum

DATE: April 7, 1993

REPLY TO
ATTN OF: EM-343

SUBJECT: Department of Energy/Vitrification Projects Division Audit No. 93EA-WV-AU-01
of the West Valley Demonstration Project Quality Assurance Program

TO: T. J. Rowland, West Valley Project Office

The attached audit report presents the results of the subject Quality Assurance (QA) Program audit conducted by the Vitrification Projects Division (EM-343) at the West Valley Demonstration Project (WVDP) during the period of February 22-26, 1993.

Concerns were identified by the audit team resulting in three Deviation and Corrective Action Reports (DCAR) and six Observations. The major concerns were in the areas of Design Control (Criterion 3) and Control of Purchased Items and Services (Criterion 7).

The audit was performed as a followup to Audit No. 92EA-WV-AU-001 in determining overall adequacy and effectiveness of the WVDP QA Program. Also included was an evaluation of corrective action taken to resolve findings and observations identified in Audit Nos. 91EA-WV-AU-001 and 92EA-WV-AU-001. The results of the audit and the conclusions reached by the audit team indicate that the overall adequacy and implementation of the WVDP QA Program was considered to be effective. Based upon the results of this audit and Audit No. 92EA-WV-AU-001, EM-343 finds the WVDP QA Program acceptable to continue with waste acceptance activities related to the high-level waste form production at the West Valley Demonstration Facility.

It is requested that West Valley Project Office reply to this report within 30 days from receipt of this memorandum. The reply is to be addressed to my office and shall identify: (1) root cause of each identified deviation, (2) action taken to correct the deviation, (3) action taken to prevent recurrence of similar deficiencies, and (4) a schedule for completion of all involved actions. Please provide your responses to the deviations on the DCAR forms included in the audit report. Observations identified as requiring a response, may be addressed in a memorandum.

Should you have any questions, please call me at 301-903-7188 or J. Conway at 301-903-7450.



Ralph E. Erickson, Acting Director
Vitrification Projects Division
Office of Waste Management Projects
Environmental Restoration
and Waste Management

Attachment

Encl 3

cc:

T. McIntosh, EM-343
K. Picha, EM-343
J. Hennessey, EM-361
L. Stevens, EM-331
L. Vaughan, EM-20
D. Horton, RW-3
R. Toro, BDM/SAIC
R. Hartstern, MACTEC

Audit Team Members:

J. Conway, EM-343
K. Grisham, EM-343
L. Wade, Mactec
L. Sirianni, SAIC
S. Crawford, SAIC
J. Flaherty, SAIC
J. LeVea, BDM
W. McClanahan, SAIC

**U. S. DEPARTMENT OF ENERGY
ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT
OFFICE OF WASTE MANAGEMENT**

VITRIFICATION PROJECTS DIVISION

AUDIT NUMBER 92EA-WV-AU-001

**DOE-WEST VALLEY PROJECT OFFICE
QUALITY ASSURANCE PROGRAM IMPLEMENTATION
WEST VALLEY DEMONSTRATION PROJECT**

AUDIT REPORT

WEST VALLEY, NEW YORK

JULY 27-31, 1992

EXECUTIVE SUMMARY

**U. S. DOE AUDIT
NO. 92EA-WV-AU-001
WEST VALLEY DEMONSTRATION PROJECT
QUALITY ASSURANCE PROGRAM**

The Vitrification Projects Division (EM-343) conducted an audit on July 27-31, 1992 of the West Valley Demonstration Project (WVDP) to determine the adequacy, effectiveness, and implementation of the WVDP Quality Assurance (QA) Program for the waste acceptance activities related to the high-level canistered waste form production. The audit was performed in accordance with line organization responsibilities described in the Secretary of Energy Notice 6E-92, "Departmental Organizational and Management Arrangements" and implemented to meet the requirements of the Office of Civilian Radioactive Waste Management (OCRWM), "Quality Assurance Requirements Document (RW-0214)."

The audit team commends the DOE-West Valley Project Office (WVPO) and the West Valley Nuclear Services (WVNS) for their utmost cooperation and professionalism displayed during the conduct of this audit. Interaction with WVPO and WVNS personnel demonstrates their comprehensive understanding of the applicable QA requirements. In addition, the immediate and increased level of WVPO and WVNS management attention to the audit team's concerns and observations was noteworthy.

The major concerns identified by the audit process were in the areas of design control and control of purchased items and services. In the area of design control only one System Description (SD) has been issued to date, though many other SDs have been prepared but have not been approved and issued, as required by implementing procedures.

In the area of control of purchased items and services, a nonconforming item was not documented on a Nonconformance Report (NR). Dimensions recorded on an Inspection and Instruction Data Sheet (IIDS) differed from the dimensions noted on the drawing. A number of discrepancies were also noted regarding the WVNS Acceptable Supplier List (ASL) and supporting qualification files: three suppliers of quality-related items and services are not shown on the ASL; the Annual Supplier Assessment, the Supplier Quality Surveys, and audit reports were not in the vendor QA file; and the ASL does not reflect additional restrictions on a supplier which was on a restricted status.

The audit team would like to express sincere appreciation for the positive attitudes of all personnel contacted and the assistance provided by WVPO and WVNS personnel. This assistance contributed to the success of the audit. It was obvious to the team that personnel displayed ownership and exhibited great pride in their QA program.

EM-343 was unable to declare the WVDP QA program fully qualified. The program was determined to be effective for criteria 1, 2, 4, 6, 7 (Receiving Inspection), 10, 13, 15, and 18. The remaining criteria will be the subject of a future audit to be conducted during the first half of fiscal year 1993.

Overall adequacy and implementation of the WVDP QA Program was deemed marginally effective by the audit team.

A description of audit activities, results, and observations is presented in the following audit report. Specific details of audit findings are provided in Deviation and Corrective Action Reports (DCARs) which are enclosed with this report.

AUDIT REPORT

**DOE/EM-343 QUALITY ASSURANCE AUDIT
NO. 92EA-WV-AU-001**

**DOE WEST VALLEY DEMONSTRATION PROJECT
QUALITY ASSURANCE PROGRAM**

**WEST VALLEY PROJECT OFFICE
WEST VALLEY, NEW YORK
JULY 27-31, 1992**

I. AUDIT SCOPE

The audit determined the adequacy, effectiveness, and implementation of the WVDP QA Program for the waste acceptance activities related to the high-level canistered waste form production in accordance with line organization responsibilities described in the Secretary of Energy Notice 6E-92, "Departmental Organizational and Management Arrangements" and implemented to meet the requirements of OCRWM's RW-0214.

A. PROGRAMMATIC REQUIREMENTS:

The QA Program elements reviewed to assess the adequacy and effectiveness of WVDP Program implementation included the following:

- (1) Organization
- (2) QA Program
- (3) Design Control
- (4) Procurement Document Control
- (5) Instructions, Procedures, and Drawings
- (6) Document Control
- (7) Control of Purchased Items and Services
- (8) Identification and Control of Items
- (9) Control of Processes
- (10) Inspection
- (11) Test Control
- (12) Control of Measuring and Test Equipment
- (13) Handling, Storage, and Shipping
- (14) Inspection, Test and Operating Status
- (15) Control of Nonconforming Items
- (16) Corrective Action
- (17) QA Records
- (18) Audits
- (19) Software QA

WVPO and WVNS personnel were interviewed, and applicable records and documents pertinent to the above program elements were reviewed by the audit team members to verify implementation of QA program requirements.

B. PROGRAM DEFINING DOCUMENTS:

The basis for the audit is contained in the applicable requirements and criteria identified in the following documents:

- (1) WVDP Quality Assurance Program Description No. WVDP-074, QAPD-2 and QAPD-3
- (2) WVPO Quality Procedures (QPs)
WVNS Quality Assurance Procedures (QAPs)
- (3) Department of Energy Orders: (as applicable to QA Program provisions)
 - 5820.2A, "Radioactive Waste Management"
 - 4700.1, "Project Management System"
- (4) DOE/EM/WO/02, Rev. 1, VPD High Level Waste "Quality Assurance Program Description"
- (5) DOE/RW-0214, Rev. 4 and ICN 4.1, "Quality Assurance Requirements Document (QARD)"
- (6) American Society for Mechanical Engineers, NQA-1-1989 Edition, "Quality Assurance Requirements for Nuclear Facilities" (including applicable Supplements and Appendices)

II. AUDIT PARTICIPANTS

A. Audit Team Members:

J. E. Hennessey, EM-343, Audit Team Leader (ATL)
J. T. Conway, EM-343
S. L. Crawford, BDM/SAIC —
R. A. Toro, BDM/SAIC
D. E. Miller, BDM/SAIC
L. R. Wade, MACTEC
C. B. McKee, MACTEC
J. F. LeVea, Jr., BDM/SAIC

B. Observers:

C. D. Morell, CER Corporation (RW-3)
W. E. Belke, U.S. Nuclear Regulatory Commission (NRC)
R. S. Brient, NRC

C. Attendees at the pre-audit and post-audit conferences and personnel contacted during the audit are identified in Attachment 1.

III. PRE-AUDIT CONFERENCE

A pre-audit conference was held on July 27, 1992 at 8:00 a.m. T. Rowland, WVPO Director, presented the opening remarks and reviewed the DOE and operating contractor's organizational structures. R. Provencher, Environment, Safety, Health (ESH) and Quality Verification Program Manager, presented the WVPO overview and status of the QA Program. D. Shugars, WVNS QA Manager, presented the status of their QA Program as well as the WVDP facility, QA Program milestones, and the results of a qualification survey. J. Hennessey, EM-343 ATL, presented the audit scope, objectives, method of qualification, schedule of daily activities, observer protocol, and interfaces. Remarks were invited from representatives of the NRC and the OCRWM. Identification of escorts and audit contacts were noted, and the meeting adjourned at 9:30 a.m.

IV. CONDUCT OF AUDIT

The audit was conducted according to the requirements of the EM-343 Standard Practice Procedure No. 4.02., "Administration and Conduct of Quality Assurance Audits," Revision 2, dated 6/5/92. Using checklists developed specifically to correspond to the scope of the audit, lines of inquiry were pursued by the audit team to evaluate the adequacy and effectiveness of the DOE-WVPO's implementation of the WVDP Quality Assurance Program Description, WVDP-074, QAPD-2 and QAPD-3, and its compliance with DOE/RW-0214, "QARD" and DOE/EM/WO/02, Vitrification Projects Division High-Level Waste "Quality Assurance Program Description." (A)

A daily briefing for WVPO and WVNS management was conducted by the ATL at 8:00 a.m. to discuss audit concerns and observations noted from the previous day.

A brief tour of the WVDP facilities was conducted by WVNS representatives for the benefit of interested audit team personnel and observers.

V. SUMMARY OF AUDIT RESULTS

Using the checklists developed specifically to correspond to the audit scope, the following information was obtained through review of pertinent documents and interviews conducted with cognizant WVPO and WVNS personnel for each QA Program element. The deviations and/or observations noted for the appropriate criteria are discussed in detail in Section VI, Deviations and Observations.

Organization (Criterion 1)

Evaluation of Criterion 1 was conducted by interviews with DOE/WVPO personnel in the Regulatory Compliance Office (RCO) and Quality Verification Manager (QVM). A review of the Program documents for WVPO/WVNS organizational interfaces, arrangements, and responsibilities definition was also conducted including delegations to WVNS. Systems for quality verification, stop work process, quality concerns program, and provisions for dispute resolution, and the knowledge and experience of QA management personnel were also performed.

Implementation of Criterion 1 is considered to be effective.

Quality Assurance Program/Training (Criterion 2)

Evaluation of the QA Program was conducted by interviews with cognizant personnel in the WVPO Program Integration Office (PIO) and WVNS Project Office Documents Department. A review of the Program Execution Guidance document, QAPD-2, and QAPD-3 was conducted. Records were reviewed to determine compliance with the requirements contained in these documents and pertinent procedures.

Evaluation of QA Training was conducted by interviews with cognizant personnel in the WVPO PIO and WVNS Training and Development Department. A review of personnel training and qualification records was also conducted. A sample of selected courses and personnel training records was selected and reviewed to determine compliance with the requirements contained in the pertinent procedures.

WVPO staff typically have received a significant amount of classroom training on topics that include but are not necessarily limited to:

1. NQA-1 and DOE/RW-0214
2. Performance of Surveillances
3. Conduct of Operations
4. Hazardous Waste Training
5. DOE Order 5000.3A

One readiness review by WVPO (Phase I for the Integrated Radwaste Treatment System) was reviewed and was found to be satisfactory. WVPO used a conservative approach in that they performed an independent readiness review rather than observe the WVNS review process. WVPO is in the process of determining what future readiness reviews will be performed. These determinations will be timely because the next readiness reviews are well in the future.

WVPO and WVNS have a graded QA Program that satisfies the requirements of DOE/RW-0214. It provides for classifying items as quality level A, B, C, or N, with N being not quality-related. Procedures generally do not specify different controls for A vs. B vs. C items. The differentiation is between A, B, and C on the one hand and N on the other.

Thus, although WVPD has a four level system on paper, in reality it has a two level system. There is nothing wrong with this system, but WVPO and WVNS may wish to clarify this matter.

4 obs
ME

The audit team identified four observations for Criterion 2. Implementation of Criterion 2 is considered to be effective, while QA training is considered to be marginally effective.

Design Control (Criterion 3)

Evaluation of this criterion was conducted by interviews with cognizant personnel in the WVPO Technical Program Office (TPO) and WVNS Site and Vitrification Engineering Department. A review of design control documents was also conducted. Records were reviewed to determine compliance with the requirements contained in the WVNS Engineering Procedures.

1 ob
1 DT
ME

The audit team identified one deviation and one observation for Criterion 3. This QA Program element is considered to be marginally effective.

Procurement Document Control (Criterion 4)

Evaluation of this criterion was conducted by interviews with cognizant personnel in the WVPO PIO and WVNS Construction and Project Administration Department. A review of procurement documents was also conducted. A system is in place to monitor this process, and records were reviewed to determine compliance with the requirements contained in the WVPO and WVNS procedures.

No deviation or observation was noted for Criterion 4. This QA Program element is considered to be effective.

E

Instructions, Procedures, and Drawings (Criterion 5)

Evaluation of Criterion 5 was conducted by interviews with WVPO and WVNS personnel. A review of records was undertaken to determine compliance with the requirements contained in pertinent procedures.

No deviation or observation was noted for Criterion 5. This QA Program element is considered to be marginally effective.

ME?

Document Control (Criterion 6)

Evaluation of Criterion 6 was conducted by interviews with the WVPO QVM and the WVNS Records Management (RM) Department. WVNS has established a centralized document control system (also used by WVPO) which provides for a thorough inspection of documents delivered for publication. Procedures and supporting documents were reviewed.

WVNS has established a centralized document control system which provides for a thorough inspection of documents delivered for publication, as well as document control lists and distribution control. This system is also used by WVPO. It is an excellent system in both its design and implementation. As noted in Observation No. 6, several minor problems were noted, indicating that some further improvements can be made.

1 obs
E

The audit team noted one observation for Criterion 6. This QA Program element is considered to be effective.

Control of Purchased Items and Services (Criterion 7)

Evaluation of Criterion 7 was conducted by interviews with WVNS personnel in its QA and Quality Services Management (QSM) Departments. A review was conducted of procedures, purchase orders (POs), document packages for QRs, inspection personnel certification warehouse POs, and the Acceptable Supplier List (ASL) and supporting vendor qualification files. A sample of these documents was selected, and records were reviewed to determine compliance with the requirements contained in the pertinent WVNS procedures.

2 obs
212
E

Two deviations and two observations were noted for Criterion 7. The receiving inspection element was evaluated under Criterion 10 (Inspection) and was deemed to be effective, while the supplier evaluation element was considered to be marginally effective.

Identification and Control of Items (Criterion 8)

Evaluation of this criterion was conducted by interviews with cognizant personnel in the WVNS Quality Services (QS) and Quality Engineering (QE) Operations Planning Departments. A sample of POs and work orders was selected, and records were reviewed to determine compliance with the requirements contained in the pertinent procedures.

1 obs
E D

The audit team noted one observation for Criterion 8. The audit team did not have sufficient time to thoroughly verify implementation of this criterion. Therefore, this QA Program element is considered to be indeterminate upon evaluation of the adequacy and effectiveness of implementing this criterion.

Control of Processes (Criterion 9)

This criterion was evaluated through the review of procedures, interviews with personnel from WVNS Vitrification Process Development (VPD) and QS Departments, and review of personnel certifications. Bell Power Corporation has been delegated to perform the special processes. Currently, there are no special processes being performed that are within the waste acceptance envelope. Processes requiring special controls will be defined in the distant future. A review of welding and nondestructive examination (NDE) documentation was also conducted. A sample of surveillance reports, work orders, IIDSs, certifications for NDE personnel, welding and NDE procedures were selected, and records were reviewed to determine compliance with the requirements contained in QAPs 9-1, 9-2, and 9-3.

1 cbs
- 10

The audit team noted one observation for Criterion 9. Due to the lack of activity in this area, this QA Program element is considered to be indeterminate upon evaluation of the adequacy and effectiveness of implementing this criterion.

Inspection (Criterion 10)

Evaluation of this criterion was conducted by interviews with WVNS personnel in the QSM and QE Departments. A review of Construction Inspection Program Plan, Revision 2 and Construction Inspection Plan CIP-VIT-033, Revision 1, 7/24/92, was also conducted.

C DE
C cbs
E

No deviation or observation was noted for Criterion 10. Implementation of this QA Program element is considered to be effective.

Test Control (Criterion 11)

Evaluation of this criterion was conducted by interviews with WVNS QA, QS, QE, and VPD Departments. A review of WVNS procedures, test plans, and contracts was also conducted. As a result of the interviews, the audit team concluded that no systems have been turned over to WVNS and testing has not been completed.

C DE
C DE
E

No deviation or observation was noted for Criterion 11. This QA Program element is considered to be indeterminate because test data was not available for review.

5.17
5.17

Control of Measuring and Test Equipment (Criterion 12)

Evaluation of the control of measuring and test equipment (M&TE) was performed by interviews with cognizant personnel in the QS Department, Work Control Center, and Instrument Shop. A review of storage practices for standards and equipment, M&TE log book, calibration records, and procurement packages and records (e.g. certifications, receipt inspection records) for calibrations performed by outside vendors was also conducted. A sample of ten M&TE was selected, and records were reviewed to determine compliance with the requirements (e.g. calibration frequency, labeling of equipment) contained in procedures Quality Management QM 12 "Measuring and Test Equipment Control" and QAPD 12-1 "Control and Calibration of Standards and Measuring and Test Equipment."

A potential finding was identified, and it contained the following elements:

- Vendor indicated out of calibration condition for gage block set (TG-013) on certificate, but Receiving Inspection did not write an NR.
- Thermometer (TG-107) did not have a calibration sticker, and there was no evidence of calibration.
- M&TE log book for 1991 was not transferred to the Master Records Center in a timely manner.
- Megger (TG-068) was not calibrated in September 1991 as scheduled.
- M&TE log book did not contain information for a missing immersion thermometer (TG-077).
- Primary standard THC-1 was identified in calibration procedure SOP 41-21, but it was not the standard being used for calibrating thermometers.

In response to the potential deviation, WVNS initiated a Request for Corrective Action (RCA) No. 92-022, 7/31/92, and a Recommended Change Form to revise SOP No. 41-21, "Calibration Procedure for Thermometers." EM-343 will verify the implementation of the corrective action during a future audit or surveillance of WVPO and WVNS.

This QA Program element is considered to be marginally effective.

mt

Handling, Storage, and Shipping (Criterion 13)

Evaluation of this criterion was conducted by interviews with WVNS personnel in the QE, QS, Environmental Operations and Transportation Departments. A review of WVPO and WVNS procedures (WV-660, SOP-300, QM-13-1, and QAP-13-1) was also conducted. A sample of radioactive materials shipped and rigging inspections was selected, and records were reviewed to determine compliance with the requirements contained in referenced procedures.

- No deviation or observation was noted for Criterion 13. This QA Program element is considered to be effective.

Inspection, Test, and Operating Status (Criterion 14)

Evaluation of this criterion was conducted by interviews with WVNS personnel in the QA, QS, and RM Departments. As a result of these interviews, the audit team concluded that no systems have been turned over to WVNS.

- No deviation or observation was noted for Criterion 14. Due to lack of activity in this area, this QA Program element is considered to be indeterminate.

Control of Nonconforming Items (Criterion 15)

Evaluation of this criterion was conducted by interviews with WVPO personnel in the RCO and QVM. A review of Qualification Clarification Reports (QCRs) and NRs, both open and closed, for 1992 were reviewed. A sample review of disposition approval, technical justification and disposition verification was performed to determine compliance with the requirements contained in the pertinent procedures.

- 2 obs The audit team identified two observations for Criterion 15. This QA Program element is considered to be effective.

Corrective Action (Criterion 16)

Interviews were conducted with WVPO RCO and QVM to evaluate Criterion 16. The current WVPO Request for Immediate Corrective Action (RICA) tracking database and files which lists several WVNS RCAs were reviewed to determine compliance with the requirements contained in pertinent procedures.

- 1 obs The audit team identified one observation for Criterion 16. This QA Program element is considered to be marginally effective.

Quality Assurance Records (Criterion 17)

Evaluation of Criterion 17 was conducted by interviews with WVPO PIO and WVNS Information Services Records Management personnel. WVPO has delegated records storage to WVNS. During the conduct of the audit, the records retrieval system was evaluated. A sample of records was selected and processing of the records into the records system was observed. All records were retrievable.

obs
The audit team identified one observation for Criterion 17. This QA Program element is considered to be marginally effective.

Audits (Criterion 18)

Evaluation of this criterion was conducted by interviews with WVPO and WVNS personnel. A review of Lead Auditor certifications was performed to determine compliance with the requirements contained in pertinent procedures.

C
No deviation or observation was noted for Criterion 18. This QA Program element is considered to be effective.

Software Quality Assurance (Criterion 19)

obs
Evaluation of this criterion was conducted by interviews with WVPO RCO and QVM. The audit team identified an observation for Criterion 19. This QA Program element is considered to be marginally effective.

A summary chart of the effectivity for each Program element is shown in Attachment 2.

VI. DEVIATIONS AND OBSERVATIONS

DEVIATIONS

Deviation No. 1 (Criterion 3):

WVNS Engineering Procedure EP-3-025, Revision 0, 7/5/91, identifies 28 vitrification systems which will have System Descriptions (SDs) prepared. The SDs are defined as "a comprehensive technical document that includes the complete description of the system design features, such as flow path and performance, operating and design parameters, arrangements, subsystems, or component design features, systems interfaces, and system safety, quality, operating, and maintenance requirements."

EP-3-025 further states: "SDs should be prepared as early as feasible during the conceptual design as a means of enabling project participants to reach agreement on system design. As the design work progresses, more detailed design should be provided by the system designer through timely updates to the SDs." ".....The SDs need not be complete at first release, because all details will not be established at the same time in the execution of design work. In such cases a complete outline of the document should be identified at the initial release."

Only one SD, WVNS-SD-011, Revision 0, 7/20/92, "Off-gas Vessel and Vent System" has been issued to date. (Note: Many other SDs are in preparation, but have not been approved and issued.)

System Descriptions that have not been issued yet include the following:

<u>System</u>	<u>Description</u>
55	Sludge Mobilization System
63I	Primary Process System
63J	Canister Decontamination
63IA	Instrument Air System
65	Cold Chemical System
67	Vitrification Facility HVAC System
68	HLW Interim Storage System
69A	Vitrification Facility Sampling System
69B	Vitrification Facility Sample Transfer System
200A	Instrumentation and Control Hardware
200B	Instrumentation and Control Hardware

Some of the above systems, including the Sludge Mobilization System, have been exercised through test programs.

Deviation No. 2 (Criterion 7):

Paragraph 5.2.3 of WVPO Quality Assurance Procedure QAP 10-2, Revision 6, 2/27/92, requires an NR to be prepared and processed when nonconforming items are found during receipt inspection.

During receipt inspection of an impact wrench component (P.O. 19-56732) dimensions were found as not meeting requirements on drawing no. 900d-2889 (Revision 3, Sheet 2 of 2). The condition was reported on an IIDS No. 92-384 and was accepted by a Quality Engineer without benefit of evaluation by the cognizant engineer. An NR was not prepared and processed as required by the procedures.

Deviation No. 3 (Criterion 7):

Numerous discrepancies were noted regarding the WVNS ASL and supporting vendor qualification files. (WVNS maintains that the vendor QA files are working files; the record copies of documents are maintained in audit, surveillance, and procurement files.)

- Three suppliers of quality-related items and services were not shown on the ASL
 - Hellier - NDE Level III services (training, examination, and procedures)
 - Ledco - HLW glass canisters
 - Gage Lab - Calibration
- Annual Supplier Assessment, WV-001, not in vendor QA file (Commercial Archives - record storage)
- Supplier Quality Surveys, WV 1249, not in vendor QA file (Commercial Archives - record storage)
- Audit reports (including annual assessment references) not in vendor QA file or referenced to alternate file location
 - Catholic University (EA-91-06, EA-92-04)
 - Alfred University (EA-91-05)
- Supplier Assessment for Catholic University, 3/15/92, recommended "maintain on ASL" without comment on restrictions; the ASL identified a restricted status for Catholic University. A subsequent audit of Catholic University, EA-92-04, indicated significant program deficiencies exist, but the ASL does not reflect any additional restrictions on Catholic University.

These three deviations are documented in detail in Attachment 3.

OBSERVATIONS

Observation No. 1 (Criterion 2):

Contrary to the requirements identified in the Federal Register Notice (Vol. 55, No. 153, pg. 32288), the Director and Quality Verification Manager were the only personnel on the DOE/WVPO staff required to meet the requirements of DOE-80, "Quality Assurance Training and Qualification Records." A response to this observation is requested.

Observation No. 2 (Criterion 2):

The following errors were noted during an examination of two files of input documents for the WVPO Correspondence Tracking System:

- Record Number 20149 was entered as an open (tracked) item. It should have been entered as a closed (historical) item.
- For Record Number 17954, the WVPO Concurrence Sheet (which contains input for the tracking system) did not indicate that the record should be entered as a closed item. In addition, an "N/A" (Not Applicable) which should have been in the "Closed Record No." blank was omitted. These errors made it very difficult to determine and to verify the correct status of this record.

WVPO has a system for tracking open items until resolution. As described in Observation No. 2, problems were noted in its implementation. A management assessment was performed in November 1991, and results showed that it met the requirements of the applicable procedure. No deficiencies were identified requiring followup corrective action.

A study should have been undertaken to determine the prevalence of similar errors, their impact on report accuracy, the root cause, and the corrective action needed. No response to this observation is required.

Observation No. 3 (Criterion 2):

QAPD-3, Sections 2.3 and 2.4 require a number of actions to be performed by WVNS QA Group. Applicable procedures do not address two of these requirements, such as

- The requirement to assist in problem resolution
- The requirement to assist in identifying the specific scientific or technical information to be collected, analyzed, or used.

The establishment and maintenance of the QA Program have been well conducted. A minor concern, as noted in this observation, indicates that the QAPD-3 requires the WVNS QA to assist in problem resolution and in identifying specific technical or scientific information to be collected, etc. This requirement makes QA partly responsible for quality achievement. This has not been reflected in the implementing procedures. WVNS should determine whether the problem pertains to deficiencies in the procedures or incorrect requirements in the QAPD, and implement the appropriate corrective action. No response to this observation is required.

Observation No. 4 (Criterion 2):

WVPO-QP-643, Revision 5, and Training Plan (WVPO-TR-101, Revision 0, issued 5/7/91) require that specific training courses be determined and provided. It was found that WVPO has substituted other training for that specified by approved training plans, but determinations of equivalency have not been documented. WVPO, however, has substituted other training for that specified course. No response to this observation is requested.

Observation No. 5 (Criterion 3):

The Waste Compliance Plan (WCP), WVNS-WCP-001, Revision 3, 12/3/91, submitted to EM-343 for the Technical Review Group (TRG) review, was prepared to meet the draft Waste Acceptance Preliminary Specifications (WAPS) dated June 1991. Although the draft WAPS was used as the basis for the WCP, with EM-30 direction, the WAPS was withdrawn at DOE/RW's request dated 4/16/92. The current approved WAPS is DOE/RW-0261 (PE-04), Revision 1, January 1990.

Differences between the January 1990 and June 1991 WAPS include:

- Product Consistency Test not in January 1990
- Weight and heat loads lower in January 1990
- Leak rate increased by three orders of magnitude in June 1991
- Minimum wall thickness not specified in June 1991

A response to this observation is requested.

Observation No. 6 (Criterion 6):

Although the centralized document control system for WVDP is exemplary, several minor deficiencies were noted which indicate that improvement is needed in the system and its implementation:

- The final resolution of a "Nonconformance" by the Quality Engineer on Engineering Procedure EP-3-002, Revision 7 was unclear. The "Concur with Comments" box was checked but not initialed and dated.
- The meaning of procedure dates is unclear as to whether it indicated the date of approval, issuance, or effectivity. It is understood that a clarification is in process.
- For ACP 7.9, Revision 7, the second delinquency notice (for receipt acknowledgement) was not issued on the due date of 7/20/92.
- Contrary to WVPO-EP-647, Revision 4, paragraph 6.4, the release date for QAPD-2, Revision 2 is not indicated on the first page.

No response is required for this observation.

Observation No. 7 (Criterion 7):

The following suppliers have not been identified as high level waste related activity on audit schedules:

- Battelle Pacific Northwest Laboratories (PNL)
- Commercial Archives

These suppliers perform activities within the scope of DOE/RW-0214. A response is required for this observation.

Observation No. 8 (Criterion 7):

Recent audits (EA-91-06 and EA-92-04) of Catholic University identified substantial and recurring problems in the implementation of required QA Program controls. A detailed review, documentation, and resolution of actual and potential impact to waste form qualification is being prepared. WVPO had identified the need to perform the impact analysis and a corrective action recovery plan during the qualification survey of WVNS which was conducted on April 29-30, 1992. Nonetheless, EM-343 should maintain an oversight of the resolution process to assure the integrity of glass test data collected and analyzed by Catholic University. No response is required for this observation.

Observation No. 9 (Criterion 8):

NQA-1 Criterion 8 requires that "Identification shall be maintained on the item or in documents traceable to the item, or in a manner which assures that identification is established and maintained." Supplement 8S-1, 2.1 Item Identification requires that "Items of production shall be identified from the initial receipt and fabrication of the item up to and including installation and use." Paragraph 2.2 indicates that "Physical Identification shall be used to the maximum extent possible."

Contrary to this requirement, WVPO procedures do not require identification to be placed on an item until it is installed. The specific item which was traced during the audit was the 69-DV-008 Diverter Valve (Assembly Drawing No. 900-D-2890, Revision 0). A response is requested for this observation.

Observation No. 10 (Criterion 9):

Contrary to the requirements of Bell Power Corporation NDE-QP-01, the method of verification, date, and the initials of the Level III inspector have not been recorded on the education and employment records for the Non-Destructive Examination (NDE) personnel.

Since no special processes are being conducted which affect the waste acceptance process, this QA Program element is considered to be indeterminate upon evaluation of the adequacy and effectiveness of implementing this criterion. Special processes requiring special controls are to be defined and implementing procedures will be developed at a later date. No response is required for this observation.

Observation No. 11 (Criterion 15):

QAP 15-3 is not specific in defining what conditions can be addressed on a QCR. It is feasible that a nonconforming condition could be addressed via a QCR instead of an NR. Consideration should be given to include a descriptive list of activities/conditions that could be dispositioned using the QCR. Also, provisions should be added to the procedure requiring a nonconformance determination review by appropriate organizations.

Examples include:

- QCR 90-072 identified deficiencies during an electrical inspection. These conditions were ultimately identified on NR 90-0065.
- QCR 90-012 identified deficiencies during inspection Jumper J-212 (unacceptable welds). No NR has addressed this item.

A response is requested for this observation.

Observation No. 12 (Criterion 15):

QAP 15-1 does not have any specified timeframe identified for item nos. 5 or 15 of the instructions for completing the NRs. Review of NRs revealed times for item 5 ranged from one week to one month. This is subjective and is totally at the discretion of the initiator.

NR 92-021 did not have the commitment date of Block 15 completed. The NR was written on 3/20/92 and was not closed until 7/30/92. Action required for disposition was completed on 5/27/92.

NR 92-015 was initiated on 2/7/92 and was not closed until 7/30/92. Disposition action (use-as-is) and supporting documentation was dated 2/13/92.

NR 92-018 was initiated on 2/18/92. There was no objective evidence of further processing to date.

The absence of required timeframes for response and action to be taken provides inadequate controls for timely resolution of nonconformances. A response is requested for this observation.

Observation No. 13 (Criterion 16):

WVPO RICAs have not been uniquely identified. WVPO intends to identify RICAs individually by a unique document number to improve the RICA tracking system and RICA files.

Some problems were noted which could be improved by the use of specific RICA identification numbers:

- The current WVPO tracking database lists several WVNS Requests for Corrective Action (RCA) as a part of the RICA which are not related to any RICA.
- Three RICAs dated 5/14/92 are tracked and filed under a single action item number because all three RICAs were covered by a single WVNS RCA (92-015).

A response is requested for this observation.

Observation No. 14 (Criterion 17):

The SF-12 test package revealed a number of conditions which jeopardize records retrievability, including numerous record identifications, various configurations of records packages, records shipment offsite, and no method to supplement records. The assurance that all records on a particular subject are retrieved depends on the personal knowledge of records specialists.

There is a lack of consistency among the departments in how records are collected, packaged, and identified. This makes the retrievability of records arduous. Complete retrieval depends primarily on the knowledge and experience of the records specialists, rather than on a simple, well understood system.

A response is requested for this observation.

Observation No. 15 (Criterion 19):

The ORIGIN 2 computer code used to support the Waste Form Qualification Report (WQR) submittals has not been validated by the developer. The code is an ORNL-developed code; a previous DOE/RW audit of Oak Ridge had identified that there were no formal QA controls in place at Oak Ridge to validate the code and to maintain the version configuration of the code.

A response is requested for this observation.

SUMMARY:

Evaluation of the deviations and observations described previously indicate that the overall effectiveness of the WVDP QA Program was deemed marginally effective. The program was determined to be effective for criteria 1, 2, 4, 6, 7 (Receiving Inspection), 10, 13, 15, and 18. The remaining criteria will be the subject of a future audit to be conducted during the first quarter of fiscal year 1993.

VII. POST-AUDIT CONFERENCE

The audit team held a post-audit conference on July 31, 1992, at 11:30 a.m. The ATL presented a summary of the audit team's concerns and observations to the WVPO and WVNS management, including the positive program elements and the audit team's approach for categorizing the audit results and qualifying the WVDP QA Program. Comments on the conduct and results of the audit were provided by representatives from NRC and RW. Closing comments were given by R. Provencher.

VII. AUDIT TEAM LEADER/SUB-TEAM LEADERS CONCURRENCE:

J. E. Hennessey
J. E. Hennessey, AUDIT TEAM LEADER

9-10-92
Date

S. L. Crawford
S. L. Crawford, SUB-TEAM LEADER

9/10/92
Date

C. B. McKee
C. B. McKee, SUB-TEAM LEADER

9/11/92
Date

D. E. Miller
D. E. Miller, SUB-TEAM LEADER

9/10/92
Date

ATTACHMENT 1

AUDIT MEETING ATTENDEES AND CONTACTS

ATTACHMENT 1
LIST OF AUDIT MEETING ATTENDEES AND CONTACTS

A = ATTENDED PRE-AUDIT CONFERENCE
B = ATTENDED POST-AUDIT CONFERENCE
C = CONTACTED DURING AUDIT

<u>NAME</u>	<u>ORGANIZATION</u>	<u>A</u>	<u>B</u>	<u>C</u>
T. Rowland	DOE/WVPO	X		
R. Provencher	DOE/WVPO	X	X	X
B. Mazurowski	DOE/WVPO	X	X	X
D. Sullivan	DOE/WVPO	X	X	X
W. Hunt	DOE/WVPO	X		
S. Metzger	DOE/WVPO	X	X	X
P. Van Loan	DOE/WVPO	X	X	X
W. Ketola	DOE/WVPO	X	X	X
J. Yeazel	DOE/WVPO	X		X
H. Moore	DOE/WVPO		X	
D. Cook	DOE/WVPO		X	
A. Lengyel	DOE/WVPO		X	
E. Hagaman	DOE/WVPO		X	
P. Abrams	DOE/WVPO		X	X
E. Matthews	DOE/WVPO		X	
D. Sullivan	DOE/WVPO			X
E. Riley	Riley & Associates (WVPO)			X
R. Hinds	WSRC	X		
D. Shugars	WNS	X	X	X
R. Humphrey	WNS	X	X	
J. Marek	WNS	X	X	X
R. Farchmin	WNS	X	X	X
D. Bonenberger	WNS	X	X	X
C. Schiffhauer	WNS	X	X	X
R. Lawrence	WNS	X	X	
J. Volpe	WNS	X	X	
J. Hummel	WNS	X	X	X
J. Berg	WNS	X		
R. Werchowski	WNS	X	X	X
P. Keel	WNS	X		
G. Centrich	WNS	X		
R. Gessner	WNS	X		
D. Crouthamel	WNS		X	X
W. Poulson	WNS		X	
B. Gray	WNS			X

**ATTACHMENT 1
(CONTINUED)
LIST OF AUDIT MEETING ATTENDEES AND CONTACTS**

**A = ATTENDED PRE-AUDIT CONFERENCE
B = ATTENDED POST-AUDIT CONFERENCE
C = CONTACTED DURING AUDIT**

<u>NAME</u>	<u>ORGANIZATION</u>	<u>A</u>	<u>B</u>	<u>C</u>
V. DesCamp	WVNS			X
S. McKenzie	WVNS		X	X
D. Kuhns	WVNS		X	X
L. Domes	WVNS			X
J. Greenquist	WVNS			X
J. Bachman	WVNS			X
G. Reed	WVNS			X
D. Demoster	WVNS			X
J. Abbott	WVNS			X
S. Barnes	WVNS			X
L. Wichman	WVNS			X
S. Schweichart	WVNS			X
C. Fenuz	WVNS			X
J. Nesselbush	WVNS			X
J. Mahoney	WVNS			X
V. Riggi	WVNS			X
P. Nowicki	WVNS			X
L. Donovan	WVNS			X
H. Farmer	WVNS			X
M. Elliott	WVNS			X
G. Robbins	WVNS			X
P. Burn	WVNS			X
G. Jones	WVNS			X
M. Ciaramella	WVNS			X
H. Payne	WVNS-PA		X	X
J. Gerber	WVNS-PA		X	
P. Piciulo	NYSERDA	X	X	
C. Morrell	CER (RW-3)	X	X	
W. Belke	USNRC	X	X	
T. McIntosh	EM-343		X	
J. Hennessey	EM-343	X	X	
J. Conway	EM-343	X	X	
S. Crawford	BDM/SAIC (EM-343)	X	X	

**ATTACHMENT 1
(CONTINUED)
LIST OF AUDIT MEETING ATTENDEES AND CONTACTS**

**A = ATTENDED PRE-AUDIT CONFERENCE
B = ATTENDED POST-AUDIT CONFERENCE
C = CONTACTED DURING AUDIT**

<u>NAME</u>	<u>ORGANIZATION</u>	<u>A</u>	<u>B</u>	<u>C</u>
D. Miller	BDM/SAIC (EM-343)	X	X	
J. LeVea, Jr.	BDM/SAIC (EM-343)	X	X	
R. Toro	BDM/SAIC (EM-343)	X	X	
C. McKee	MACTEC (EM-343)	X	X	
L. Wade	MACTEC (EM-343)	X	X	

ATTACHMENT 3

**DEVIATION AND CORRECTIVE ACTION REPORTS
(DCARs)**

Deviation and Corrective Action Report (DCAR)

DCAR No.: 92EA-WV-AU-001-01 Revision: 0 Page 1 of 1
 Date of discovery: 7/27/92 Evaluated Organization: WVNS
 Evaluated Organization Representative: V. A. DesCamp
 Corrective Action taken immediately: No
 Activity: Design Control (Criterion 3) Location: WVPO

Requirement(s) not met: **WVNS Engineering Procedure EP-3-025, Revision 0, 7/5/91, identifies 28 vitrification systems which will have System Descriptions (SDs) prepared.**

Deviation description: **Only one SD, WVNS-SD-011, Revision 0, 7/20/92, "Off-gas Vessel and Vent System" has been issued to date. (Note: Many other SDs are in preparation, but have not been approved and issued.)**

Corrective Actions Required:	Yes	No
- Root cause analysis	<u>x</u>	<u> </u>
- Action to prevent recurrence	<u>x</u>	<u> </u>
- Action regarding similar work	<u>x</u>	<u> </u>

Provide Response by: Within 30 days upon receipt of this report
 Initiator: S. L. Crawford, BDM/SAIC Date: 9/16/92
 QA Program Manager: J. T. Conway, EM-343 Date: 9-11-92
 Program Manager: T. W. McIntosh, EM-343 Date: 9/11/92
 Division Director: R. E. Erickson, EM-343 Date: 9/11/92

Proposed Corrective Actions: _____

Scheduled completion date: _____
 Evaluated Organization Representative: _____ Date: _____

Evaluation of Proposed Corrective Actions: _____

Acceptable
 Unacceptable

Evaluator: _____ Date: _____
 Program Manager: _____ Date: _____
 QA Program Manager: _____ Date: _____

Corrective Actions Complete:
 Verified by: _____ Date: _____
 Program Manager: _____ Date: _____
 Verification Approved
 Division Director: _____ Date: _____

Deviation and Corrective Action Report (DCAR)

DCAR No.: 92EA-WV-AU-001-02 Revision: 0 Page 1 of 1

Date of discovery: 7/28/92 Evaluated Organization: WVNS

Evaluated Organization Representative: D. Crouthame/J. Abbott

Corrective Action taken immediately: No

Activity: Control of Purchased Items & Services Location: WVPO
(Criterion 7)

Requirement(s) not met: Paragraph 5.2.3 of WVPO Quality Assurance Procedure QAP 10-2, Revision 6, 2/27/92, requires an NR to be prepared and processed when nonconforming items are found during receipt inspection.

Deviation description: During receipt inspection of an impact wrench component (P.O. 19-56732) dimensions were found as not meeting requirements on drawing no. 900d-2889 (Revision 3, Sheet 2 of 2). The condition was reported on an IIDS No. 92-384 and was accepted by the Quality Engineer without benefit of evaluation by the cognizant engineer. An NR was not prepared and processed as required by the procedures.

Corrective Actions Required:	Yes	No
- Root cause analysis	<u>x</u>	_____
- Action to prevent recurrence	<u>x</u>	_____
- Action regarding similar work	<u>x</u>	_____

Provide Response by: Within 30 days upon receipt of this report

Initiator: L. Wade, MACTEC Date: 9-11-92

QA Program Manager: J. T. Conway, EM-343 Date: 9-11-92

Program Manager: T. W. McIntosh, EM-343 Date: 9/11/92

Division Director: R. E. Erickson, EM-343 Date: 9/11/92

Proposed Corrective Actions: _____

Scheduled completion date: _____

Evaluated Organization Representative: _____ Date: _____

Evaluation of Proposed Corrective Actions: _____

Acceptable _____
Unacceptable _____

Evaluator: _____ Date: _____

Program Manager: _____ Date: _____

QA Program Manager: _____ Date: _____

Corrective Actions Complete:

Verified by: _____ Date: _____

Program Manager: _____ Date: _____

Verification Approved

Division Director: _____ Date: _____

Deviation and Corrective Action Report (DCAR)

DCAR No.: 92EA-WV-AU-001-03 Revision: 0 Page 1 of 1

Date of discovery: 7/28/92 Evaluated Organization: WVNS

Evaluated Organization Representative: R. E. Farchmin

Corrective Action taken immediately: No

Activity: Control of Purchased Items & Services Location: WVPO
(Criterion 7)

Requirement(s) not met: QAP 7-1, para. 4.2 "Suppliers are placed on the Acceptable Suppliers List as a result of an acceptable or acceptable with restrictions evaluation."

Deviation description: A number of discrepancies were noted regarding the WVNS Acceptable Supplier List (ASL) and supporting qualification files: three suppliers of quality-related items and services are not shown on the ASL; the annual Supplier Assessment, the Supplier Quality Surveys, and audit reports were not in the vendor QA file; and an annual Supplier Assessment does not reflect restrictions on the supplier which is on a restricted status.

Corrective Actions Required:	Yes	No
- Root cause analysis	<u>X</u>	_____
- Action to prevent recurrence	<u>X</u>	_____
- Action regarding similar work	<u>X</u>	_____

Provide Response by: Within 30 days upon receipt of this report Date: 9/10/92
 Initiator: S. L. Crawford, BDM/SAIC Date: 9-11-92
 QA Program Manager: J. T. Conway, EM-343 Date: 9/11/92
 Program Manager: T. W. McIntosh, EM-343 Date: 9/11/92
 Division Director: R. E. Erickson, EM-343 Date: 9/11/92

Proposed Corrective Actions: _____

Scheduled completion date: _____

Evaluated Organization Representative: _____ Date: _____

Evaluation of Proposed Corrective Actions: _____

Acceptable _____
 Unacceptable _____

Evaluator: _____ Date: _____
 Program Manager: _____ Date: _____
 QA Program Manager: _____ Date: _____

Corrective Actions Complete:
 Verified by: _____ Date: _____
 Program Manager: _____ Date: _____
 Verification Approved
 Division Director: _____ Date: _____

memorandum

DATE: OCT 29 1992

REPLY TO:
ATTN OF: EM-343

SUBJECT: Department of Energy/Vitrification Projects Audit (No. 92EA-SR-AU-04) of the Savannah River Field Office-Defense Waste Processing Division

TO: C. Terrell, Director
Defense Waste Processing Division

The attached audit report presents the results of the subject Quality Assurance (QA) Program audit conducted by the Vitrification Projects Division (EM-343) of the Defense Waste Processing Division (DWPD) at the Savannah River Field Office during the period of September 14-18, 1992.

Concerns were identified by the audit team that resulted in the issuance of five Deviations and Corrective Action Reports (DCARs) and the identification of fourteen Observations. The major concerns were in the areas of Document Control (Criterion 6), Inspection (Criterion 10), Nonconforming Items (Criterion 15), and Audits (Criterion 18).

The results of the audit and conclusions reached by the audit team indicate that the overall adequacy and implementation of the DWPD QA Program was considered to be effective. Thirteen criteria were considered to be effectively implemented, three criteria were considered to be marginally effective, and two criteria were considered to be indeterminate. An audit will be conducted during the 2nd quarter of FY93 to assess the QA Program elements that were deemed to be either marginally effective or indeterminate including a follow-up of corrective action taken on the deficiencies identified during this audit.

It is requested that the Savannah River Field Office reply to this report within thirty days from receipt of this memorandum. The reply is to be addressed to my office and shall identify: (1) the root cause of each deficiency; (2) the actions to be taken to correct the deficiency; (3) actions to be taken to investigate for repetitive conditions; (4) actions to be taken to preclude repetitive conditions; and (5) a schedule for completion of all involved actions. Please provide your responses to the deviations on the DCAR forms within this audit report. Observations requiring a response are to be provided by memorandum.

Should you have any questions, please call me at 301-903-7188 or Jim Conway at 301-903-7450.


Ralph E. Erickson, Acting Director
Vitrification Projects Division
Office of Waste Management
Environmental Restoration
and Waste Management

Attachments:
Audit Report 92EA-SR-AU-04

Encl 2

cc:

K. Picha, EM-343
T. Gutmann, EM-343
H. Vu, EM-343
R. Scott, EM-20
L. Vaughan, EM-20
L. Stevens, EM-331
D. Horton, RW-3
P. Chimah, DP-625
L. Sirianna, BDM/SAIC

Audit Team:

J. Hennessey, EM-361
J. Conway, EM-343
S. Crawford, BDM/SAIC
J. Flaherty, BDM/SAIC
J. LaVea, BDM/SAIC
R. Lowder, MACTEC
~~H. McLaughlin, BDM/SAIC~~
C. Mc Kee, MACTEC
D. Miller, BDM/SAIC
R. Stockman, BDM/SAIC
R. Toro, BDM/SAIC
K. Strong, MACTEC
L. Wade, MACTEC