**Project Hanford Document
Change Form**

52

1. Title: **Quality Assurance Program Implementation Plan for Nuclear Facilities** Functional Area: **Quality Assurance**

2. Document Number: **HNF-SP-1228** Rev. No.: **0**

3. Initiator's Name:	Mail Stop:	Phone No.:	Company:	Date:
Liz Bibb	B1-13	372-2628	FDH-QA	7/2/97

4. *Specific Proposed Change to Document (attach marked up file, as required, for detailing involved changes):*

This is a new document that replaces WHC-SP-1131 with the exception of Section 3.0.

5. Functional Area Manager's Name:	Mail Stop:	Phone No.:
George W. Grier	B1-13	372-8110

6. Technical Authority's Name:	Mail Stop:	Phone No.:
Stephen A. Byers	B1-13	376-6511

7. Implementation Notice:

The *Quality Assurance Program Implementation Plan for Nuclear Facilities*, HNF-SP-1228, replaces WHC-SP-1131 with the exception of Section 3.0. HNF-SP-1228 was issued on July 1, 1997. To allow for a transition period, the effective date for this document will be October 30, 1997. A corresponding document, the *Project Hanford Quality Assurance Program Description* (QAPD), HNF-MP-599, was also issued on July 1 and will also be effective October 30. The QAPD will replace Section 3.0 of WHC-SP-1131 when approved by RL. WHC-SP-1131 will continue to be used on an interim basis and then canceled at the end of the transition period.

8. Direction to Reviewers:

Review cycle has been completed

9. Disposition: (check appropriate box)

- a. Proposed Change not accepted or canceled (check box) ☐ (notify initiator of reason).
- b. Change requires technical review? NO ☒ YES ☐ (yes requires interface with designated reviewers)
- c. Change requires subcontract review? NO ☒ YES ☐ (yes requires interface with Prime Contract Management)
- d. Document contains scientific, technical, or sensitive information? NO ☒ YES ☐ (yes requires information clearance review in accordance with HNF-PRO-184)

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Technical Authority Approval: SAB Date: 7-8-97

Functional Area Manager Approval: SAB Date: 7-8-97

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1 RR page 1 of 3
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Project Hanford Management Contract

QUALITY ASSURANCE PROGRAM IMPLEMENTATION PLAN FOR NUCLEAR FACILITIES

HNF-SP-1228

Revision 0

Prepared:

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Manager, Quality Assurance Programs
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7-1-97
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7-1-97
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Project Hanford Management Contract

**QUALITY ASSURANCE PROGRAM
IMPLEMENTATION PLAN FOR NUCLEAR FACILITIES**

HNF-SP-1228

Revision 0

Fluor Daniel Hanford, Inc.

July 1, 1997

Project Hanford Management Contract

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1.0 INTRODUCTION

During transition from the Westinghouse Hanford Company (WHC) Management and Operations (M&O) contract to the Fluor Daniel Hanford (FDH) Management and Integration (M&I) contract, existing WHC policies, procedures, and manuals were reviewed to determine which to adopt on an interim basis. Both WHC-SP-1131, *Hanford Quality Assurance Program and Implementation Plan*, and WHC-CM-4-2, *Quality Assurance Manual*, were adopted; however, it was recognized that revisions were required to address the functions and responsibilities of the Project Hanford Management Contract (PHMC). This *Quality Assurance Program Implementation Plan for Nuclear Facilities* (HNF-SP-1228) supersedes the implementation portion of WHC-SP-1131, Rev. 1. The revised Quality Assurance (QA) Program is documented in the *Project Hanford Quality Assurance Program Description* (QAPD), HNF-MP-599. That document replaces the QA Program in WHC-SP-1131, Rev. 1.

The scope of this document is limited to documenting the nuclear facilities managed by FDH and its Major Subcontractors (MSCs) and the status of the implementation of 10 CFR 830.120, *Quality Assurance Requirements*, at those facilities.

Since the QA Program for the nuclear facilities is now documented in the QAPD, future updates of the information provided in this plan will be by letter. The layout of this plan is similar to that of WHC-SP-1131, Rev. 1. Sections 2.0 and 3.0 provide an overview of the Project Hanford QA Program. A list of Project Hanford nuclear facilities is provided in Section 4.0. Section 5.0 provides the status of facility compliance to 10 CFR 830.120. Sections 6.0, 7.0, and 8.0 provide requested exemptions, status of open items, and references, respectively. The four appendices correspond to the four projects that comprise Project Hanford.

2.0 PROJECT HANFORD ORGANIZATIONAL STRUCTURE AND RESPONSIBILITIES

The Project Hanford workscope is performed by FDH and a team consisting of five MSCs, an infrastructure subcontractor, and six enterprise companies. The PHMC Team organization is described in the QAPD, Part 1, Section 1, "Organizational Structure." The organizational responsibilities for QA are described in Part 1, Section 2, "Functional Responsibilities for QA."

The facilities within the scope of the PHMC are grouped under four broad-based projects managed by separate MSCs:

- The Tank Waste Remediation System (TWRS) Project, managed by Lockheed Martin Hanford Corporation, consists of the activities required to store, treat, immobilize, and dispose (or prepare for disposal) of Hanford's radioactive tank waste and strontium and cesium capsules. This project includes operation of tank farms and removal and treatment of the tank wastes.

- The Waste Management Project, managed by Waste Management Federal Services of Hanford, Inc., consists of the activities required to manage the non-TWRS waste treatment, storage, and disposal activities. This project provides solid waste and liquid effluents management, analytical services, pollution prevention and waste minimization, transportation and packaging, and effluent and environmental monitoring for the Hanford Site.
- The Facility Stabilization Project, managed by B&W Hanford Company, consists of the activities required to provide safe interim storage for nuclear materials, stabilization of nuclear and chemical materials, and the deactivation of facilities. This project includes reducing the risk and the surveillance and maintenance costs associated with a facility and readying the facility for final dispositioning and transition to the Environmental Restoration Program.
- The Spent Nuclear Fuel (SNF) Project, managed by DE&S Hanford, Inc., consists of the activities required to reduce the risk from and the cost of storing spent fuel at the Hanford Site. The principal activities of this project include removing the spent fuel, sludge, debris, and associated equipment from the K Basins; drying the fuel; and placing it in interim dry storage.

3.0 PROJECT HANFORD QUALITY ASSURANCE PROGRAM

Figure 1 depicts the Project Hanford QA Program document hierarchy and the relationship of the QAPD to this document and the implementing procedures. The QAPD defines the FDH and PHMC Team implementation of both 10 CFR 830.120 and DOE Order 5700.6C, *Quality Assurance*, as well as the Project Hanford organization and functional responsibilities for QA.

The QAPD is divided into two parts. Part 1 provides the Project Hanford organization and functional responsibilities. Part 2 provides the management processes considered necessary to implement 10 CFR 830.120 and DOE Order 5700.6C. The QAPD includes a table that identifies the specific portions of the QAPD that constitute FDH's commitment for purposes of 10 CFR 830.120 enforcement.

The requirements of the QAPD are implemented by each MSC through development and implementation of Quality Assurance Program Plans (QAPPs). The QAPPs merge the requirements of the QAPD with facility/project-specific QA requirements. The QAPPs implement the QAPD using a graded approach. Part 2, Section 1 of the QAPD discusses the graded application of the requirements of 10 CFR 830.120 and the flowdown of QA requirements to subtier contractors.

Project Hanford QA Program Document Hierarchy

Figure 1

4.0 PROJECT HANFORD NUCLEAR FACILITIES

The following list identifies the nuclear facilities managed by FDH and its MSCs. The list of facilities was determined in accordance with the criteria of DOE-STD-1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Orders 5480.23 Nuclear Safety Analysis Reports*, Section 3.1, "Radiological Hazards," and DOE-EM-STD-5502-94, *Hazard Baseline Documentation*, Section 5.1, "Hazard Baseline Documentation Criteria for EM Nuclear Facilities." The facilities are listed by the project they are associated with and the FDH subcontractor responsible for the project and facility is shown. Appendices A through D provide a description and compliance status of each facility.

PROJECT HANFORD NUCLEAR FACILITIES	
Tank Waste Remediation System Project (Lockheed Martin Hanford Corporation)	
<p>Single Shell Tanks Double Shell Tanks 242-S Evaporator 242-T Evaporator Grout Treatment Facility Critical Mass Laboratory (209-E) 209-E Storage Area Cribs, Ponds, and Ditches Vertical Storage Units 213-W Dry Waste Compactor Facility Miscellaneous Inactive Storage Facilities (MISFs)</p> <p>(See Appendix A)</p>	
Waste Management Project (Waste Management Federal Services of Hanford, Inc.)	
<p>Solid Waste Disposal</p> <ul style="list-style-type: none"> • Transuranic Storage and Assay Facility (TRUSAF) • Burial Grounds • Central Waste Complex (CWC) • T Plant Facilities • WRAP 1 Facility • 242-A Evaporator <p>340 Waste Handling Facility 222-S Laboratory</p> <p>(See Appendix B)</p>	

PROJECT HANFORD NUCLEAR FACILITIES	
Facility Stabilization Project (B&W Hanford Company)	
Fast Flux Test Facility (FFTF) B Plant/Waste Encapsulation Storage Facility (WESF) Plutonium Finishing Plant (PFP) <ul style="list-style-type: none">• Building 234-SZ• Building 236-Z• Building 241-Z• Building 291-Z and 291-Z-1 Stack• Building 2736-Z Complex 300 Area N Reactor Fuel Supply Facility 308 Building Building 324 Building 327 UO ₃ Storage Facility (See Appendix C)	
Spent Nuclear Fuel Project (DE&S Hanford, Inc.)	
K Basins Facility Canister Storage Building (CSB), (Project W-379) Cold Vacuum Drying Facility (CVD), (Project W-441) Hot Conditioning System Annex (HCS), (Project W-484) (See Appendix D)	

Changes from WHC-SP-1131, Rev. 1, which are reflected in this list include:

- The removal of three former nuclear facilities. The Maintenance and Storage Facility (MASF) was reclassified as a Radiological Facility, and both the Plutonium Uranium Extraction (PUREX) and the UO₃ Facility have been deactivated. The UO₃ Facility has been, and PUREX is in the process of being, transitioned to the Hanford restoration and remediation contractor.
- The addition of the WRAP 1 Facility, formerly listed as a project.
- The transfer of the 242-A Evaporator from the Tank Waste Remediation System Project to the Waste Management Project.
- The transfer of the 324 and 327 Buildings to the Facility Stabilization Project from Pacific Northwest National Laboratory.

- Independent listing of the following TWRS facilities, to match the way they are listed in the TWRS Basis for Interim Operations.
 - Critical Mass Laboratory (209-E)
 - 209-E Storage Area
 - Cribs, Ponds, and Ditches
 - Vertical Storage Units
 - 213-W Dry Waste Compactor Facility
 - Miscellaneous Inactive Storage Facilities (MISFs)
- The addition of the UO₃ Storage Facility (T-hoppers).

5.0 FACILITY COMPLIANCE STATUS

5.1 Compliance Assessment Performed by WHC

WHC stated in WHC-SP-1131 that the requirements of 10 CFR 830.120, as reflected in Section 3 of WHC-SP-1131, were used to perform the initial compliance assessments of the Hanford nuclear facilities and the activities supporting those facilities. It also stated that the assessments were conducted using a graded approach and focused on the facilities and activities that presented the greatest risk to nuclear safety. Matrices documenting the baseline assessments were presented in WHC-SP-1131, Rev. 0.

WHC-SP-1131, Rev. 0, was developed with an appendix for each WHC-managed nuclear facility. These appendices served as stand-alone documents and included matrices listing the 10 CFR 830.120 requirements with cross-references to the sections of the quality assurance program implementing those requirements, and identifying whether or not the requirements had been implemented. Actions, schedules, and appropriate interim compensatory measures were identified by WHC for any program elements not implemented. At that time, it was determined by WHC that all WHC-managed nuclear facilities, with the exception of TWRS and K Basins, had implemented QA programs in accordance with the requirements of 10 CFR 830.120.

In August 1996, WHC-SP-1131, Rev. 1, was issued. In that revision, the initial baseline matrices for those facilities with compliant QA programs were removed from the document. TWRS and K Basins updated their baseline matrices to reflect status of action items. Those updated matrices were included in WHC-SP-1131, Rev. 1, Appendices A and D.

5.2 10 CFR 830.120 Implementation Plan Actions, Schedules, and Resource Assessments

TWRS and the K Basins Facility, part of the SNF Project, are the only organizations with Implementation Plan Action Items for 10 CFR 830.120 that remain open. Table 1 summarizes the action, schedules, and incremental funding identified in the appendices of this document. The status of action items is detailed in the TWRS and SNF Project Appendices.

5.3 FDH Compliance Assessment

The FDH MSC responsible for each nuclear facility is accountable by FDH for implementing the quality assurance program defined in Section 3.0 of WHC-SP-1131, Rev. 1, until the QAPD and this document are both approved by RL. After RL approval and a 60-day implementation period, the facilities will be held accountable for implementing the QAPD. FDH has been provided a letter of compliance from each MSC, stating that the facilities for which they are responsible are implementing 10 CFR 830.120. If conditions or events are identified that are potentially noncompliant with the QAPD, the facility will screen the condition or event in accordance with DOE-HDBK-1089-95, *Guidance for Identifying, Reporting, and Tracking Nuclear Safety Noncompliances*, to determine reportability.

6.0 EXEMPTIONS

No exemptions are necessary.

7.0 STATUS OF ACTIVITIES AND MILESTONES FOR 10 CFR 830.120 COMPLIANCE

TABLE 1: IMPLEMENTATION PLAN ACTION ITEMS SUMMARY			
Project	Action Item	Schedule/Status	Incremental Cost
TWRS	Generate As-Built for new construction projects	Completed	\$65,000
TWRS	Revise As-Built to denote upgrades and maintenance	October 1995-September 2000	0
TWRS	Track condition/age of material/equipment	Completed	\$100,000
TWRS	Specify design basis for existing facilities	October 1997-September 2005	0
K Basins	Reestablish configuration management, reconstitute design bases and provide updated drawings for 105KE/KW Basin facilities	January 1998	\$1,400,000

Action Items shown as completed in WHC-SP-1131, Rev. 1, have been removed from this table.

8.0 REFERENCES

Title 10, Code of Federal Regulations, Part 830.120, *Quality Assurance Requirements*

DOE Order 5700.6C, *Quality Assurance*

DOE Standard 1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*

DOE-EM-STD-5502-94, *Hazard Baseline Documentation*

DOE-HDBK-1089-95, *Guidance for Identifying, Reporting, and Tracking Nuclear Safety Noncompliances*

HNF-MP-599, *Project Hanford Quality Assurance Program Description*, Rev. 0

TANK WASTE REMEDIATION SYSTEM PROJECT LOCKHEED MARTIN HANFORD CORPORATION

A.1 FACILITY AND MISSION DESCRIPTIONS

MISSION

The mission of the Tank Waste Remediation System (TWRS) is to store, treat, and immobilize highly radioactive waste in an environmentally sound, controlled, and cost effective manner.

NUCLEAR FACILITIES

TWRS contains several nonreactor nuclear facilities, including waste tanks (i.e., single shell tanks [SST], double shell tanks [DST], and waste transfer systems), 242-S and -T Evaporators, Grout Facility, and nonreactor nuclear facility construction projects. The waste tanks qualify as nonreactor nuclear facilities because of the presence of radionuclides in their sludge, solids, or pumpable liquid portion.

A hazard classification of TWRS facilities and operations determined that the SSTs, DSTs (including the aging waste facility tanks), and associated waste transfer systems are Hazard Category 2 facilities (Ref. HNF-SD-WM-BIO-001). The associated waste transfer systems include the 204-AR Waste Unloading Facility and the 244-AR Vault.

Although the Miscellaneous Inactive Storage Facilities (MISF) can be segmented from other TWRS facilities, these facilities are not fully characterized and are assumed to be Hazard Category 2.

Hazard Category 3 facilities include the Cribs, Ponds, and Ditches; the 209-E Storage Area; Vertical Storage Units; and the 213-W Dry Waste Compactor Building. The 2727-W Sodium Storage Facility inventory does not exceed the threshold values for Hazard Category 3 and is, therefore, a Radiological Facility.

The waste tanks consist of underground tanks that store highly radioactive mixed waste. The waste tanks (both SST and DST) are located in the "tank farms" in the 200 East and 200 West Areas of the Hanford Site.

STATUS OF FACILITIES

Single Shell Tanks

The SSTs have one carbon steel wall, are surrounded by reinforced concrete, and are situated below ground level. They were constructed between 1944 and 1964, and accepted waste until 1980. Waste in the SSTs consists of liquids, sludges, and saltcake. Over the years, the majority of the free-standing liquids have been transferred to DSTs.

Appendix A

The SSTs and ancillary structures are aged plants in a less-than-desirable material condition. About one-half of the SSTs have leaked, or are assumed to have leaked. Most of the systems, components, and structures have exceeded their design life. The SSTs have been physically isolated and are no longer capable of accepting waste.

The objective for the TWRS organization is to achieve a controlled, clean, and stable condition. Additionally, the objective for SSTs is to achieve a shutdown mode. Therefore, those activities applicable to operations will be curtailed as the SSTs progress to an inactive status. The progress from active to inactive will depend on specific characteristics of each individual SST.

Double Shell Tanks

The DSTs, which have two carbon steel walls, were constructed between 1970 and 1986, and were designed for 50 years of storage. The space between the two walls is monitored for leaks. None of the DSTs have been known to leak. The DSTs are used to treat and store a variety of liquid radioactive waste from the SSTs and from various Hanford Site processes. The waste is stored in tanks based on composition, level of radioactivity, or origin. Waste transfers routinely occur between DSTs as part of the active waste management practices required for the continued safe storage of the waste.

242-S Evaporator

The 242-S Evaporator was shut down in 1980. At the time of shutdown, there was no management objective to maintain configuration control. Original drawings had not been revised and updated to denote upgrades and maintenance; the condition and age of materials and equipment had not been tracked; records of the design and design bases had not been retained. These conditions exist today. A Shutdown/Standby Plan (SD-WM-SSP-002) was issued in September 1988, which provides specific information as to the steps taken to achieve a Condition III shutdown/standby status. A surveillance and monitoring program has been maintained to assure compliance with environmental safety. This program is conducted under the auspices of the West Tank Farm.

The 242-S Evaporator has a radioactive inventory that has only been roughly quantified. Therefore, the 242-S Evaporator will continue to be treated as a nuclear facility.

The control room of the 242-S Evaporator is being used to monitor ventilation systems, alarms, etc., in the 242-S Evaporator and the Tank Farms. The control room will continue to be used and will be maintained in an operating condition. As an operating control room, the requirements relative to configuration control and management have been applied. The 242-S Evaporator, exclusive of the control room, will be maintained in the shutdown/standby mode and is considered to be inactive.

242-T Evaporator

The 242-T Evaporator was shut down in 1972 and is considered to be inoperable. At the time of shutdown, there was no management objective to maintain configuration control. Original drawings had not been revised and updated to denote upgrades and maintenance; the condition and age of materials and equipment had not been tracked; records of the design and design bases had not been retained. These conditions exist today. Tanks located in the facility were used to receive and neutralize waste until November 1980. In April 1981, a Shutdown/Standby Plan was written. A final transfer was made in 1982; however, a significant radioactive inventory remained in the pot. Due to the high activity level, the radioactive inventory can not be easily established; therefore, the 242-T Evaporator will continue to be treated as a nuclear facility. In April 1983, a revised Shutdown/Standby Plan (SD-HS-SAR-009) was issued, which details the steps necessary to place the process portion of the 242-T Evaporator Facility in shutdown/standby Condition V (no operational mission is predicted). A surveillance and monitoring program has been maintained to assure compliance with environmental safety. This program is conducted under the auspices of the West Tank Farm.

The Shutdown/Standby Plan does require the maintenance of controlled air flow within the 242-T Evaporator Facility and high-efficiency particulate air (HEPA) filtration of exhaust air. Therefore, the control room has been maintained active and is being used to monitor ventilation systems, alarms, etc., in the 242-T Evaporator and the Tank Farms.

The objective of the TWRS organization is to eliminate the functions of the control room and place the entire facility in a shutdown mode. The facility will then be considered inactive and will be isolated.

Grout Treatment Facility

The Grout Treatment Facility is a low-level waste (LLW) nonreactor nuclear facility that combines cementitious materials with low-level radioactive liquid waste for permanent disposal. It consists of a nonradioactive dry component storage and mixing plant, a dry component-waste mixing facility, and below-grade disposal vaults for the resultant grout.

As a result of the recent TWRS rebaselining activity, the Grout Treatment Facility was shut down and placed in standby. Current standby plans will allow for a facility restart within two years if emergency tank space is needed. Prior to rebaselining, one below-grade disposal vault was filled with nonhazardous, low-activity grout during August 1988 startup, and sealed for interim stabilization until final site closure. This vault is actively storing radioactive waste and is subject to closure and post-closure requirements specified in DOE Orders and Consent Orders.

Critical Mass Laboratory (209-E)

The 209-E Complex is located northwest of the PUREX Facility in the 200 East Area. The 209-E Building was designed to provide a heavily shielded room where criticality configurations were studied. The fissile material has been removed except for residual contamination.

Appendix A

One wing of this one-story, L-shaped concrete block and reinforced concrete building houses offices, a control room, shops, and a common area. The other wing includes the equipment room, the change room, the mix room and the Critical Assembly Room (CAR). Three of these rooms (CAR, mix room, and hot side of the change room) constitute a nuclear facility because they contain residues of plutonium. Personnel are located in the office spaces of the facility. These personnel operate the less-than-90-day storage pads.

Currently, there is no approved Authorization Basis for this facility. A Justification for Continued Operation (JCO) has been prepared and is awaiting approval by the U. S. Department of Energy, Richland Operations Office. The JCO only applies to the 209-E Building and associated exhaust system. It does not apply to the 90-day storage pad. Activities conducted within this facility are limited to those prescribed by the JCO.

209-E Storage Area

The 209-E storage area consists of an administrative building, a 90-day storage pad, and a LLW storage pad. This is a Resource Conservation and Recovery Act (RCRA) storage area. The waste stored on these pads is generated by day-to-day maintenance and operations in the 200 East and West Tank Farms. The waste materials include solvents, oils, paints, and cleaning materials from the radiation zones. Other waste contributions are equipment or material contaminated through contact with the mixed waste stored in tank farms. The LLW pad stores low-level, radiologically contaminated solid waste. This pad is located northwest of the less-than-90-day storage pad.

The 209-E Complex is managed and operated by Waste Management Federal Services of Hanford for Lockheed Martin Hanford Corporation. Activities performed at these facilities are currently controlled via TWRS procedures and policies.

Cribs, Ponds, and Ditches

The cribs were subsurface liquid distribution systems. Their primary function was to dispose of liquid effluents so that low-level radionuclides (if any) were absorbed and held in the soil beneath the crib. Most cribs are gravel-filled trenches covered with soil. Ponds and ditches allowed for the discharge of waste water generated from operating facilities in the 200 East and 200 West Areas. Ditches and pipelines were used for transporting water to the ponds and for the regulation and adjustment of flow. With the exception of B Pond (lobe 216-B-3-C), the cribs, ditches, and trenches are inactive facilities.

Vertical Storage Units

Vertical storage units, most of which are located in the 200 West Area SST Farms, were used to store dry, radioactively contaminated equipment or soil within the Tank Farms. These facilities are now inactive.

Appendix A

213-W Dry Waste Compactor Facility

The 213-W Building was used to compact LLWs and is referred to as the Dry Waste Compactor Facility. Compaction activities have ceased and will not be resumed. Contaminated instruments continue to be repaired in the 213-W Building.

Miscellaneous Inactive Storage Facilities

MISFs are inactive tanks and structures, both underground and above ground, that contain low- or high-level radioactive waste/contamination or nonradioactive wastes. Underground MISFs are typically buried directly in the ground or contained in vaults. The aboveground MISFs may be contained within inactive TWRS facilities. MISFs typically contain sludges or liquid heels and have volumes <189,270 L (<50,000 gal).

Construction Projects

A variety of large-scale construction projects are planned for TWRS. These projects are integral to the mission of achieving a controlled, clean, and stable condition for the tank waste.

A.2 COMPLIANCE ASSESSMENT RESULTS**ASSESSMENT OF TWRS FACILITY**

The compliance matrix attached to the prior revisions of WHC-SP-1131 presented the results of an initial baseline assessment of compliance with the requirements of the WHC Quality Assurance Program (QAP). This QAP was contained in Section 3.0 of the WHC QAP/Implementation Plan (IP) for 10 CFR 830.120 (WHC-SP-1131). The matrix identified whether the requirements of the QAP had been implemented, partially implemented, or not implemented. The assessment was performed in accordance with the methodology discussed in Section 4.1 of WHC-SP-1131, Rev 1.

RESULTS OF COMPLIANCE ASSESSMENT

The TWRS compliance assessment revealed five areas requiring attention. Each of the five areas is identified as an action item below.

Action Item #1 Generate As-builts for Construction Projects

TWRS has completed the specific corrective actions and the closure package is filed in the RL Docketing System. Therefore, this action is complete.

WHC-CM-6-1, *Standard Engineering Practices*, was revised to augment the definition for as-builts to require physical verification of as-built configuration.

WHC-CM-6-2, *Project Management*, Section 2.0, was revised to incorporate the imposition of explicit requirements on construction projects to prepare as-built drawings and conduct walkdowns for nonreactor nuclear structures, systems, and components (SSC).

Requirements have been adopted to cause direct TWRS participation and acceptance of the construction project design documentation at the turnover from the project to TWRS. The responsibility for accepting project documentation is assigned to the designated Design Authority. The Design Authority responsibilities are defined in Volume IV, Engineering, of WHC-IP-0842, *TWRS Administration Manual*, Section 3.3, "Design Authority," and Section 3.12, "Acceptance of Structures, Systems, and Components for Beneficial Use."

Action Item #2 Revise As-builts to Denote Upgrades and Maintenance

Description: The process to update design drawings to reflect as-built conditions after nonproject facility upgrades or maintenance had been performed in existing TWRS facilities was ineffectively performed. Field verification of conditions was often not performed. Effective management of operations and maintenance activities at TWRS facilities (especially during emergency situations) is adversely affected by the lack of an effective process for updating as-built drawings and verifying their continuing validity with a walkdown after nonproject upgrade or maintenance activity.

Corrective Action and Milestone: TWRS Safety and Technical Integration, in conjunction with TWRS Tank Farm Transition Projects, has developed a process to cause drawings of existing, active facilities to be updated after nonproject facility upgrade or maintenance has occurred, such that the current configuration is documented.

LMHC currently revises drawings affected by a facility upgrade or maintenance activity. The procedures, however, do not explicitly require to have modifications "as-built" prior to incorporation on the drawing.

An as-built process is required to ensure that drawings are revised to show that the actual field configuration of a facility reflects the as-installed condition. The as-built process should incorporate the Engineering Change Notice, Nonconformance Report, and Unreviewed Safety Question process. The as-built process should also be capable of (1) supporting the reconstitution of the design basis, and (2) revising/updating operations and maintenance procedures, and support documents such as Safety Analysis Reports, technical specifications, and Master Equipment List (MEL).

The schedule for implementing this new process should account for those active facilities that will remain active longest as having the highest priority.

Appendix A

Inactive facilities do not require their drawings as-built because they are in permanent shutdown. The permanent shutdown status minimizes the need to perform work in a manner that would not allow for verification of actual conditions. The Grout Treatment Facility drawing status is in near total as-built condition because of a concerted effort during construction and the few years of its operation to maintain a current design baseline. The standby status, however, minimizes the need to perform work in a manner that would require drawing verification of actual field conditions. Response to emergency situations at a shutdown facility is unlikely to be substantially impeded by the lack of as-built drawings.

Compensatory Action: LMHC will continue with the existing Field Verification program (i.e., walkdown of systems to verify field- and project-initiated work). The Field Verification Program was initiated by Tiger Team Assessment TTA-90-0000-OA.7-3 and is identified as Tank Waste Remediation System Safety Initiative 4C.

The purpose of the Field Verification Program is to provide accurate drawings of waste tank facilities. The Program consists of updating to actual field configuration (as-building) all essential and support drawings necessary for the safe operation, training of personnel, and maintenance of 200 East and 200 West Tank Farm facilities. Critical drawings (those used to support safety analysis determinations) are also verified and presently support the current level of safety analysis development.

A new drawing program has been initiated that effectively establishes the as-built status for some systems. As an additional compensatory action, the labeling program provides labels for components, input for the MEL, and develops system drawings.

This compensatory action is funded and not contingent on approval of the incremental costs identified below.

Schedule: The schedule for improving the process to update design drawings will be performed over a number of years. The schedule is as follows:

Start in October 1995

Conclude by September 2000

Incremental Cost: \$0

Action Item #3 Update TWRS Organization and Program Documents

Both the Quality Assurance and Plant organization have completed the specific corrective actions. Therefore, this action item is complete and the closure package is filed in the RL Docketing System.

WHC-CM-6-34, *Quality Management Plan*, was issued August 1995. This document describes organizational structure, functions and responsibilities, major TWRS organizational interfaces, and deliverables of organizations within TWRS.

Appendix A

WHC-IP-0842 documents the structure of the Tank Farm Transition Projects organization. Further, the document addresses responsibility goals, objectives, performance indicators, and establishes procedures, instructions, and policies that address work.

Action Item #4 Track the Condition and Age of Materials and Equipment

TWRS has completed the specific corrective actions. Therefore, this action is complete and the closure package will be filed in the RL Docketing System.

Loop calibrations performed by functional testing system loops are being implemented in the Tank Farms as part of the implementation of the Basis for Interim Operation.

Implementation of loop calibration is currently focused on system loops associated with the Authorization Bases. The implementation of loop calibration on the remaining loop systems will be based on their importance to safety, quality, environment, and Conduct of Operations.

TWRS implemented a Maintenance Optimization Program to provide the information necessary to control the material condition and the effects of aging on the facility. The maintenance optimization process evaluates each SSC to determine the correct level of planned maintenance.

Action Item #5 Specify Design Basis for Existing Facilities

Description: The design basis for many TWRS facilities is poorly defined. Effective management of operations and maintenance activities at TWRS facilities, especially during an emergency, is adversely affected by the lack of a design basis for TWRS facilities.

Corrective Action and Milestone: TWRS Safety and Technical Integration, in conjunction with TWRS Tank Farm Transition Projects, must establish a process to reconstitute the design basis for existing, active TWRS facilities, in accordance with the Configuration Management Plan.

The schedule for reconstituting the design basis shall account for those active facilities that will remain active longest as having higher priority than those due for inactivation and decommissioning in the near term.

Compensatory Action: Additional field verification steps are taken during the planning stages of maintenance and operations activities to ensure worker and public safety. A specific example of this is the additional field validation stage prior to work on electrical systems.

Hazard Category 3 and above facilities must successfully pass the Readiness Review process per DOE 5480.31, before they are allowed to be operated.

Schedule: The schedule is as follows:

Start in October 1997

Conclude by September 2005

Incremental Cost: \$0

**WASTE MANAGEMENT PROJECT
WASTE MANAGEMENT FEDERAL SERVICES OF HANFORD, INC.**

B.1 SOLID WASTE DISPOSAL**MISSION**

Receive, store, treat, decontaminate, and dispose of solid radioactive and nonradioactive dangerous wastes in a safe, cost effective, and environmentally compliant manner.

FACILITY DESCRIPTIONS**Transuranic Storage and Assay Facility**

The Transuranic Storage and Assay Facility (TRUSAF) is located in the 200 West Area of the Hanford Site. TRUSAF assays, x-rays, and stores transuranic waste for the Hanford Site.

The 224-T Building was originally constructed for purifying plutonium. It was idle for several years after new processes made it obsolete. The 224-T Building was modified to meet requirements for the storage of transuranic and transuranic-mixed waste. The operating and services areas have been stripped of all unnecessary control equipment, panel boards, and partitions to provide approximately 11,500 ft² of storage space on three floors.

The 224-T Building is approximately 197 ft long and 60 ft wide. The modified building is constructed of reinforced concrete walls, floor, and ceiling.

The three floors of the building used for TRUSAF are completely sealed from the southeast third of the building, which contains the six contaminated process cells. The floors are connected by stairway A at the north end of the building, by stairway B at the south end of the building, and by an elevator adjacent to stairway A. There is also an unloading dock off the elevator on the outside of the building.

The storage area on the first floor is located in the former gallery area associated with A through F cells. This area contains a toilet, mechanical room, and space for storage. The storage area on the first floor is in an open area with arrays marked off or painted on the floor.

The storage area on the second floor is located in the former gallery area associated with A through F cells. The individual process cell sample galleries, which protrude into this area but are not part of the storage area, are sealed off. Storage on the second floor is in an open area, with arrays marked on the floor.

The storage area on the third floor is located in the former operating gallery area associated with cells A through E.

Continuous air monitoring of operating and storage areas on each of the 3 floors is provided by continuous air monitoring systems. Contaminated areas (the sealed process cells) are controlled by the building heating, ventilating, and air conditioning systems.

Burial Grounds

The Low Level Burial Grounds (LLBG) are located in the 200 East and 200 West Areas of the Hanford Site. Each burial ground is comprised of a number of trenches. Six active burial grounds are located in the 200 West Area and two active burial grounds are located in the 200 East Area.

The burial grounds consist of trenches that are linearly oriented excavations used for a variety of waste that have included, but are not limited to, low-level waste (LLW) in sealed fiberboard boxes, 55-gallon drums, specially fabricated wood, metal, and reinforced concrete containers, and both packaged and direct-buried failed equipment.

Prior to April 1970, all solid wastes, regardless of radionuclide content, were placed in trenches and covered with earth to prevent release of contamination. Since then, the Department of Energy (DOE) required that radioactive solid wastes be segregated by categorizing as either transuranic (TRU) and placed in retrievable storage or non-TRU and placed in nonretrievable disposal sites. After 1970, steel drums of TRU waste were segregated from LLW and placed in retrievable storage trenches. In 1987, the mixed waste burial was halted, with few exceptions.

Central Waste Complex (CWC)

The CWC is a multi-facility complex, located in the 200 West Area of the Hanford Site. The CWC receives and stores most of the solid mixed wastes that are generated and received at the Hanford Site. The solid wastes that are handled at the CWC include both currently stored and newly generated contact-handled transuranic (CH-TRU), LLW, mixed waste, and Plutonium/Polychlorinated Biphenyl (PU/PCB) wastes.

The CWC is comprised of storage buildings, flammable storage (FS) modules, alkali metal waste storage modules, and support facilities. The CWC provides storage space for approximately 114,000 208L (55 gal) or equivalent waste containers. Facilities with physical features that provide for segregated storage areas are operated to maintain appropriate separation between arrays of incompatible waste.

Flammable Storage Modules

The FS modules (FS) (27 total) are designed to meet storage requirements for hazardous and radioactive (except flammable TRU) wastes. Two of the modules have been modified by the addition of mechanical ventilation and fixed head air monitors to allow storage of TRU flammable waste. The modules are small pre-engineered buildings of various sizes with a storage capacity of 20-48, 208 liter (55 gal) drum equivalent containers. Each of the modules has an individual waste containment system.

Alkali Metal Storage Modules

Alkali Metal Waste Storage Modules (4 total) and South Alkali Metal (Material) Storage Modules (8 total) are constructed similarly to the FS Modules. The additional safety complement to these modules is Type D fire extinguishers.

Mixed Waste Storage Buildings

The Mixed Waste Storage Facility consists of 20 storage buildings that are designed to meet the storage requirements for hazardous, mixed, and radioactive wastes.

- Buildings 2401-W, 2402-W, and 2402-WB through 2402-WL (13 total) are each 4,000 ft² metal structures, approximately 50 ft wide by 80 ft long with a roof eave height of approximately 20 ft.
- Buildings 2403-WA through 2403-WD (4 total) contain four separate quadrants for managing various hazard categories. Each building is a steel-supported, sheet metal-covered structure with unobstructed clear height of approximately 17 feet. The structural system is modular beam and column rigid frame.
- Buildings 2404-WA, 2404-WB, and 2404-WC contain two separate halves for managing various hazard categories. Each building is approximately 120 ft X 180 ft or 21,600 ft² with a 20-ft roof eave height. Each of the waste storage buildings is not insulated with the exception of the heated sprinkler riser enclosure and the Mechanical, Electrical and Telecommunications (MET) room (2404 series buildings only). The purpose of the enclosures is to provide climate control for the sprinkler system riser and the mechanical/electrical and telecommunications components.

Receiving/Staging Area and Storage Pad

Adjacent to the CWC office is the asphalt staging area and a concrete storage pad.

The Waste Receiving and Staging Area is an asphalt pad approximately 200 ft long and 150 ft wide. The area is used for handling and staging containers of radioactively contaminated waste destined for the various facilities. The Staging Area includes an access for loaded trucks and other vehicles.

The Storage Pad is located adjacent to the Waste Receiving and Storage Area and is a 6-inch curbed, 9,000 ft² concrete pad with a rainwater collection and removal system and an access ramp.

T Plant Facilities

Decontamination and reclamation of contaminated equipment for Hanford Operations are the primary functions of T Plant Operations. It also serves as a central decontamination center for all Hanford Operations and the DOE. In addition to decontamination and reclamation work, the plant can operate as a reactor fuel receiving, handling, and shipping facility, and provide special chemical makeup for other operating groups and for other Hanford contractors.

Equipment is decontaminated for the following reasons:

- To return the items to usable service.
- To determine the extent of damage and the reason for failure.
- To obtain information used in deciding whether to repair or replace equipment.
- To reduce radiation and contamination levels, permitting direct burial of equipment and reducing equipment burial costs.

Most process equipment is decontaminated in the 221-T Canyon cells. The 2706-T Facility is used to decontaminate railroad equipment, buses, automobiles, road building equipment and plant processing equipment containing low-level contamination. LLW boxes and drums are segregated, repackaged, and/or verified within the facility. An addition to the 2706-T Building, designated 2706-TA, was completed in 1995 and provides additional storage and treatment capabilities.

Typical T Plant services are:

- Set up standard and individual procedures for decontamination of radioactive contaminated equipment.
- Reactor fuel handling/storage.
- Waste handling.
- Chemical storage system.
- Receiving and shipping of process equipment.

Decontamination has saved millions of dollars in direct replacement costs by cleaning and repairing failed, highly contaminated equipment and returning it to service. Additional savings were realized because engineers were able to study the failed equipment and make design or operating changes, which reduced the total number of failures. In many cases, long plant shutdowns were avoided because cleaning and repair was much quicker than replacement of equipment.

WRAP 1 Facility

The WRAP 1 Facility, located in the 200 West Area, is built to examine (real time radiograph), assay, process, repackaging if necessary, and certify waste from various sources for shipment to a treatment, storage, or disposal facility. WRAP 1 will receive containers of contact-handled (CH) waste (surface dose rates less than 200 mrem/hr). Generators of the CH wastes may be both offsite and onsite. Potential waste streams to be processed during Phase 1 operations include previously characterized waste containers from the Hanford CWC and the TRUSAF facilities.

WRAP 1 consists of three structures housing process and process support systems, and various support and utility systems. The main facility (2336-W) consists of several distinct areas including Shipping and Receiving, nondestructive examination and assay (NDE/NDAs), waste processing, control and computer, electrical and mechanical equipment, and personnel support.

Adjacent buildings house maintenance (2620-W) and administrative support functions (2740-W).

242-A Evaporator

The 242-A Evaporator was built in 1976, with operations starting in 1977, to reduce the volume of radioactive mixed waste stored in the single shell tanks and double shell tanks (DSTs) and ultimately the volume of waste that will require disposal. In 1989, the Evaporator was shut down due to environmental concerns and the Project B-534 modification was started to ensure the 242-A facility would be operational through the year 2000. This modification included a new control room and monitoring equipment, Raw Water Service Building and other support equipment.

Liquid wastes with a high water content are blended together in a double shell underground storage tank (TK-102-AW) prior to being fed to the Evaporator. TK-102-AW is also called the Evaporator feed tank. Prior to the liquid feed being blended, it is sampled and analyzed to assure it is acceptable for processing by the Evaporator, and to establish the parameters (temperature and specific gravity) that will be used to process it.

In the Evaporator, the feed is introduced into the Recirculation Loop by a 50-150 GPM feed pump. The Recirculation Loop is made up of the Reboiler, the Vapor/Liquid Separator, the Recirculation Pump (20-75 GPM), and the 28-inch piping that ties the components together.

When feed enters the recirculation loop, it blends with the slurry (concentrated waste) and enters the reboiler. The heated slurry then flows to the vapor/liquid separator. The vapor from the vapor/liquid separator is drawn through the deentrainer pads (mesh filters) into and through the vapor header to the primary condenser. The liquids cooled in the primary condenser drain to the condensate collection tank (TK-C-100). The remaining vapor passes on to the inter-condenser and after-condenser. The condensed liquids from the inter-condenser and after-condenser also drain to TK-C-100. The remaining noncondensable gases are drawn into the vessel vent system, where they pass through a deentrainment pad and prefilter to remove moisture and large particles. After the prefilter, the gases pass through an electric heater to

Appendix B

further reduce moisture and a two-stage high-efficiency particulate air filter removes any remaining fine particles. Gases are then discharged to the atmosphere by the vessel vent exhausters through the vessel vent stack. The condensate collection tank (TK-C-100) receives liquids from the three condensers. When enough condensate has been collected in TK-C-100, the condensate is pumped using the Process Condensate pump (25-100 GPM) from TK-C-100 through the condensate filter (F-C-1). From there the process condensate is sent to the liquid Effluent Retention Facility. In-line is a radiation monitor sampler to warn and isolate the effluent from discharge when an out-of-specification condition exists.

B.2 340 WASTE HANDLING FACILITY

MISSION

The 340 Waste Handling Facility serves as a less-than-90-day waste handling facility for radioactive liquid waste supporting Pacific Northwest National Laboratory (PNNL) activities conducted in the 300 Area.

FACILITY DESCRIPTION

The 340 Facility services two liquid waste systems from PNNL's 325, 326, and 329 Buildings and B&W Hanford 324 and 327 Buildings, located in the 300 Area. Radioactive Liquid Waste (RLW) is received at the 340 Facility from these laboratories via the Radioactive Liquid Waste System (RLWS) underground pipeline. The 340 Facility stores the waste and ships it via rail tankers to the DSTs in the 200 East Area of Hanford.

The facility also manages potentially radioactive process sewer waste from the Retention Process Sewer (RPS). The facility maintains diverter stations in each of the 300 Area laboratories mentioned above (except the 326 and 329 Buildings, which have a common diverter). These diverter stations monitor for radioactivity; if radioactivity is detected, the waste is diverted to the RLWS. If radioactivity is not detected, RPS liquid waste continues to the four open-top concrete 307 basins located within the 340 Facility complex. The 307 Basins are a nonnuclear component that serves as a final holding/monitoring point for liquid waste before transfer to the Process Sewer (PS). If radioactivity is detected in the waste at the 307 Basins, the waste is diverted to the 340 Facility RLW holding tanks.

The 340 Facility does not contain Safety Class/Safety Significant structures, systems, and components and has been deemed Hazard Category 3 (ref., HNF-SD-WM-ISB-003, Rev. 1, *340 Waste Handling Facility Interim Safety Basis*). As such, the risks associated with this facility are considered to be low.

The 340 Facility is tentatively scheduled to cease receipt of waste preparatory to facility closure in September, 1998 (ref., HNF-SD-LEF-SSP-001, Rev. 1, *340 Waste Handling Facility Deactivation Plan*).

B.3 222-S LABORATORY

MISSION

The current mission of the 222-S Laboratory Complex is as follows:

The 222-S Laboratory Complex will provide quality analytical chemistry and process development services meeting all customer requirements. The 222-S Laboratory Complex will support Hanford processing plants with emphasis on waste management, chemical processing, and environmental monitoring programs at tank farms, B Plant, UO₃ Plant, 242-A Evaporator, Waste Encapsulation Storage Facility, PUREX, PFP and process development/upset activities.

Activities at the 222-S Laboratory will continue to expand as the result of relatively new programs arising from hazardous waste activities. Efforts include sample analyses as defined in the Environmental Protection Agency (EPA) SW-846 Manual and/or in the EPA Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Contract Laboratory Program.

FACILITY DESCRIPTION

The 222-S Laboratory Complex was constructed in 1950-51 to provide analytical and plant support for the S-Plant Reduction-Oxidation Complex. Through the years, the missions of the 222-S Laboratory have changed, and modifications have been made in response to new requirements and to increasingly restrictive operating and design criteria.

The building is provided with several support function shops for maintenance, instrument repair and service, electricians, millwrights, pipefitters, and glass work. Facilities for laboratory material storage, standard preparation, liquid and solid waste accumulation and storage, and filtration and exhaust are provided in areas adjacent to the 222-S Laboratory Building.

**FACILITY STABILIZATION PROJECT
B&W HANFORD COMPANY****C.1 FAST FLUX TEST FACILITY****MISSION**

The primary mission of the Fast Flux Test Facility (FFTF) is currently that of defueling and transition to decontamination and decommissioning (D&D).

FACILITY DESCRIPTION

The FFTF is located in the Hanford 400 Area, where it is operated by the B&W Hanford Company. This facility was designed for irradiation testing of nuclear reactor fuels and materials for liquid-metal-fast-breeder reactors. The FFTF includes the reactor as well as the equipment and structures for heat removal, containment, core component handling and examination, instrumentation and control, and for supplying utilities and services such as emergency power generation and irradiated fuel storage.

The reactor, when operating, was a sodium-cooled, fast-neutron-flux reactor. Nominal conditions at a design power level of 400 MW included a peak neutron flux of 7×10^{15} n/cm²-s (60 to 65% > 0.1 MeV), a reactor inlet pressure of 133 psig, reactor inlet and outlet temperatures of 680°F and 980°F, and a sodium flow rate of 43,500 gal/min. Heat from the reactor was normally removed by three heat transport circuits. In December 1993, The Department of Energy (DOE) concluded that no mission could be identified for FFTF, and ordered it to be placed in a radiologically and industrially safe shutdown condition, with a goal of accomplishing that effort in approximately five years. A detailed plan for achieving this shutdown condition has been written. Present facility conditions are that the reactor core is defueled.

The Secretary of Energy approved a Memorandum of Decision on January 17, 1997, directing the FFTF be maintained in a standby condition to permit the DOE to make a decision on whether the facility should play a future in the DOE dual-track tritium production strategy. This decision would be made in parallel with the intended December 1998 decision on the selection of the primary, long-term source of tritium. The previous DOE directives regarding the shutdown of the FFTF are deferred by the January 17, 1997, decision.

C.2 B PLANT/WASTE ENCAPSULATION STORAGE FACILITY**MISSION**

The present mission of B Plant is to safely and cost effectively transition the facility to a shutdown status in a compliant, minimal surveillance configuration for turnover to the Hanford Environmental Restoration Contractor for surveillance and maintenance activities by September 30, 1998. Included is expedited hazards reduction to enable completion of the transition to shutdown status by that date.

The Waste Encapsulation and Storage Facility (WESF) near-term mission is to provide effective storage stewardship for safe, cost-effective management of Hanford's cesium and strontium capsule inventory, associated WESF facilities, and their workforce. Buildings and equipment not required for these activities will be deactivated in preparation for D&D activities.

FACILITY DESCRIPTION

A primary Hanford waste management goal for high-level radioactive waste from nuclear fuel reprocessing was the removal and long-term isolation of this waste from the biosphere. The process included removal of the long-lived radionuclides from liquid radioactive wastes. Fractionization, concentration, purification, and bulk storage of these isotopes was done in B Plant.

The WESF converted the strontium and cesium form from B Plant to suitable stable solid forms (strontium fluoride and cesium chloride). The solidified material was then encapsulated and stored. Some of the cesium and strontium capsules had been shipped to facilities away from Hanford for beneficial usage. Problems with capsule leakage subsequently led to the recall of the offsite capsules, which are slowly being returned to Hanford for storage in the WESF until they can be appropriately and safely disposed or returned to beneficial usage.

B Plant was designed to chemically process spent nuclear fuels. Radiological containment and confinement features were incorporated in the various facilities and support systems to prevent exposure of plant personnel and the general public to excessive radiation. After plant production was terminated, the plant was modified to provide for separation and purification of selected fission products. Now, cleanup and stabilization work is underway in the B Plant structures and waste sites as the facility moves toward shutdown status. Support operations and maintenance continues as required to meet the needs of these activities.

C.3 PLUTONIUM FINISHING PLANT

MISSION

The Plutonium Finishing Plant (PFP) mission is to implement the Record of Decision (ROD) resulting from the PFP Stabilization Final Environmental Impact Statement, which provides for interim storage of all special nuclear materials (SNM), deactivation of all portions of the PFP not required for the storage of SNM or to implement the ROD, stabilization of plutonium-bearing materials, preparation of PFP for D&D, completion of scheduled environmental upgrades, performance of activities necessary to maintain compliance with environmental regulations and compliance agreements, and maintenance of the safety envelope of the PFP complex as defined in the Operational Safety Requirement and Authorization Basis documentation.

Appendix C**FACILITY DESCRIPTION**

The PFP Complex is comprised of a large number of buildings, many of which are relatively small structures and do not fit the definition of a nonreactor nuclear facility. The majority of the operations and activities of the PFP Facility, however, are conducted in a few "major" buildings, as described in the following paragraphs.

Building 234-5Z

Building 234-5Z was originally constructed to house plutonium reduction operations, plutonium machining operations, and analytical laboratory services. The first floor houses the two former plutonium processing lines (RMA and RMC Lines) and associated control rooms. The RMA and RMC plutonium processing lines are inactive and not authorized for operation.

Current building activities include process support work in the Analytical Laboratory and the Plutonium Process Support Laboratory, stabilization of plutonium-bearing materials, plutonium-bearing material storage, and solid waste operations.

Building 236-Z

Building 236-Z houses Plutonium Reclamation Facility (PRF) process equipment and services for miscellaneous treatment (scrap dissolution), slag and crucible dissolution, filtrate concentration, feed preparation, plutonium solvent extraction, product concentration, and waste tank processes. The PRF is capable of producing a high purity plutonium nitrate solution from a variety of feed sources by means of continuous countercurrent solvent extraction process equipment located in the canyon cell.

The current status of plutonium recovery operations in PRF is "inactive and not authorized."

Building 241-Z

Building 241-Z covers a below-grade liquid waste collection system containing five tanks in five separate covered cells. This radioactive Waste Treatment Facility is used for intermediate storage and neutralization of PFP aqueous waste. After neutralization, the wastes are pumped to the 244-TX Tank Farm Facility. Ventilation is provided for the cells and the tanks.

The current status of this facility is "active."

Building 291-Z and 291-Z-1 Stack

Building 291-Z houses seven electric motor-driven fans that provide ventilation exhaust for Buildings 234-5Z, 242-Z, and 236-Z. The exhaust air is discharged to the atmosphere through the 200-ft tall 291-Z-1 exhaust stack. These fans plus two steam driven exhaust turbines (for backup capability) and the inlet and exhaust plenums are the primary features of Building 291-Z. It also contains compressors for instrument air and the air sampling vacuum system vacuum, plus a separate heating, ventilating and air conditioning (HVAC) system for removing heat.

Appendix C

The current status of this facility is "active."

Building 2736-Z Complex

The 2736-Z Support Storage Complex consists of Buildings 2736-Z, 2736-ZA, 2736-ZB, and 2721-Z. Building 2736-Z is designated as the primary Plutonium Storage Facility (PSF) and consists of four vaults for the storage of SNM. Building 2736-ZA houses a backup diesel generator to provide power to exhaust ventilation equipment in Building 2736-Z. 2736-ZB is used for shipping, receiving, repackaging, and nondestructive assay of SNM; and Building 2721-Z provides emergency electrical power.

These four buildings house all functional operations required to make the 2736-Z Support Storage Complex self-sufficient. All four buildings have been designed or modified to meet current seismic and extreme wind design criteria.

The current status of this facility is "active."

C.4 300 AREA N REACTOR FUEL SUPPLY FACILITY**MISSION**

The 300 Area N Reactor Fuel Supply (NRFS) Facility is used primarily for storage of unirradiated fuel that was manufactured for use in the plutonium production reactors. Some of these facilities were used for chemical and waste stream storage and transfer, which has been terminated along with fuel manufacturing operations. Storage is the primary mission until disposal is accomplished. Individual facilities within this grouping will be turned over for D&D activities once their usage is terminated and transfer of ownership is negotiated.

FACILITY DESCRIPTION

The 300 Area NRFS Facility is comprised of a variety of buildings, including the 313 and 333 Buildings. The primary fuel fabrication operations were conducted in the 333 Building. The remaining structures were used as support buildings to the fabrication operations. The requirements of 10 CFR 830.120 apply to the quality-affecting activities for the following nonreactor nuclear facilities, which are currently used to store fuel:

- 303-A Uranium Fuel Storage
- 303-B Uranium Fuel Storage
- 303-E Uranium Fuel Storage
- 303-G Uranium Fuel Storage
- 3712 Uranium Fuel Storage
- 3716 Unfinished Uranium Fuel Storage
- UO₃ Storage Facility

The 300 Area NRFS Facility ceased operations and is in transition to shutdown for turnover for decommissioning. Fissionable material movements have stopped except for waste packaging. No significant movement is planned until ultimate disposal is approved.

The history of the NRFS Facility began in 1943, when the 313 Building was constructed to house manufacturing equipment for the Hanford single pass reactors fuel. Fuel production began in mid-1944, and continued through the early 1950's. The facility was then expanded to allow for increased fuel production. In the late 1960's, a process (which included nickel plating of the bare uranium cores prior to cladding) was developed and installed. This process continued until 1971, when the production line was shut down along with the single pass reactors. Other programs conducted at the 313 Building include support of a tritium production program from 1948 to 1952 and a thorium program in the late 1960's. For N Reactor Fuel Fabrication, the 76,199 ft² 313 Building provided waste treatment system, administrative offices, training, and warehouse space. This building also houses a complete N Reactor pressure tube fabrication facility consisting of a 4,000 Ton Sutton extrusion press, draw bench, grinders, autoclaves, inspection equipment, and chemical cleaning equipment.

The 333 Building, constructed in 1958, houses the primary fabrication equipment for manufacturing N Reactor fuel. Fuel fabrication operations began in 1962. From 1965 to 1967, the facility was also used to construct lithium aluminate targets for demonstration of co-production in the N Reactor. The 46,633 ft² building contained equipment for all operations from initial component cleaning to finished fuel assembly, inspection, and packaging for shipment. Fabrication activities continued until N Reactor entered the standby phase in 1987.

The UO₃ Storage Facility has been added to the 300 Area N Reactor Fuel Supply Facility project. The UO₃ Storage Facility consists of two connected storage pads immediately north of, and border, the 2714-U Building. There are 147 T-hoppers full of UO₃ on a concrete pad and 40 empty T-hoppers (except for "heels"), and 13 drums on a gravel pad. Both pads are surrounded by a chain link fence. Forklift access is provided to each pad through separate gates on their south sides. A railroad spur extends through the gates on the east side of the concrete pad where the T-hoppers can be loaded onto bulkhead flatcars.

C.5 308 BUILDING

MISSION

The 308 Building and Annex (including the former NRF TRIGA Reactor) were operated to provide laboratories and fuel fabrication facilities for the development of reactor fuels containing plutonium.

The main 308 Building has been placed in lay-up condition, with the major support systems shut down, including the gloveboxes and ventilation systems. There is minimal residual fissionable material inventory contained within the gloveboxes and ventilation systems. No operations are planned except for minimal maintenance and surveillance activities.

The Building Annex previously contained a TRIGA reactor fuel inventory of almost 4 kilograms Uranium-235. This fuel has been relocated to the 400 Area. The current mission of the 308 Annex is to continue facility deactivation activities to prepare the facility for minimal maintenance and surveillance mode and for turnover to the Environmental Remediation Contractor.

FACILITY DESCRIPTION

The 308 Building is a two-story structure constructed of reinforced concrete, concrete block, and steel siding. It was designed as a multi-purpose nuclear facility for the development and fabrication of nuclear reactor fuel. The building, erected in 1960, has undergone several additions since the original construction to reach the current 71,000 ft².

The facility will no longer be used for nuclear fuel development or fabrication and is currently in transition to shutdown for turnover for decommissioning. All nuclear materials used in the fuel fabrication process have been removed from the building, with the exception of relatively small amounts of residual plutonium oxide held up in the gloveboxes and associated exhaust ducting. Decontamination has reduced the material retained in gloveboxes and enclosures to a total of less than 324 grams of plutonium. Approximately 21 grams of material remain in the 2,100 linear feet of glovebox ventilation exhaust ducting. Contamination in the gloveboxes has been stabilized with a fixative coating. Due to the low residual material inventory, configuration, distribution, and glovebox stabilization, the main 308 Building process area is considered to not be subject to the 10 CFR 830.120 Quality Assurance Rule requirements.

The facility previously contained a neutron radiography facility TRIGA Reactor located in an annex of the building. This 250 KW reactor was used to perform neutron radiography on FFTF reactor fuel pins fabricated by offsite vendors and in the 308 Building. Also irradiated fuel pins removed from FFTF underwent neutron radiography with this reactor.

C.6 BUILDING 324

MISSION

Building 324 is a Hazard Category 2 nonreactor nuclear facility that is being transitioned for D&D.

FACILITY DESCRIPTION

Building 324 consists of laboratory areas, including radiological and nonradiological laboratories, support facilities, and administrative areas. The radiological laboratories within the facility include two hot cell facilities and various low-level analytical laboratories. The hot cell facilities include the radiochemical engineering cells and the shielded materials facility. Both of the facilities are used for high-level radiological activities, and as such are shielded and equipped for remote operations. B-Cell, which is one cell in the radiochemical engineering cells, is currently being cleaned out (i.e., removal of equipment, fixtures and residual radioactive materials).

Appendix C

Building 324 is 205 feet by 235 feet by 45 feet and has a partial basement, first, second, and partial third floors, for a total of approximately 101,709 feet² of floor area. The support facilities include the storage vault (located in the basement) the craft shop, the exhaust stack, and the stack monitoring facility. The storage vaults are used for storing special nuclear materials (as oxides).

The administrative areas include office space and lunchrooms for operations personnel and support staff.

C.7 BUILDING 327**MISSION**

The Building 327 Postirradiation Laboratory is a Hazard Category 2 nonreactor nuclear facility that is being transitioned for D&D.

FACILITY DESCRIPTION

Building 327 provides shielded, ventilated, and specifically equipped laboratories for physical and metallurgical examination and testing of irradiated fuels, concentrated fission products, and structural materials. The irradiated fuels examined consists primarily of fuel pins containing plutonium oxides and uranium oxides.

Building 327 is a single-story structure with a partial basement. Maximum dimensions are 215 ft long by 140 ft wide and 32 ft high. The total work area of the building is approximately 25,200 ft² with 10,000 ft² of laboratory and work areas, 2,100 ft² of offices and 2,400 ft² of storage areas, with 10,500 ft² of common areas containing ventilation and auxiliary equipment.

The building framework is welded steel. The roof is an insulated steel deck with a tar and gravel covering. The exterior walls are fluted-steel insulated panels. The first floor laboratory is reinforced concrete or steel decking with concrete and finished with paint. Interior partitions are overlapping metal panels with sealed joints. Suspended ceiling in the lower ceiling areas (none in the canyon) are perforated metal sections backed with fiberglass pads. Change room and offices have fiberglass pads.

Appendix D

**SPENT NUCLEAR FUEL PROJECT
DE&S HANFORD, INC.****D.1 FACILITY AND MISSION DESCRIPTIONS****D.1.1 K BASINS FACILITY****MISSION**

The mission of the K Basins Facility is to maintain storage of irradiated nuclear fuel until the DOE selects an interim and/or final irradiated fuel disposition method.

FACILITY DESCRIPTION

The 105KE and 105KW reactors, their irradiated fuel storage basins, and auxiliary facilities were built in the early 1950's and ceased operation in the early 1970's. All irradiated nuclear fuel from operation of the 105KE and 105KW reactors was removed from the basins at that time. The 105KE Irradiated Fuel Storage Basin was modified in 1974-1975 to store irradiated N Reactor fuel. In a similar manner, the 105KW Irradiated Fuel Storage Basin was modified in 1980 to provide additional storage capacity for irradiated N Reactor fuel. Presently, approximately 2100 MTU of irradiated N Reactor fuel are stored in the two basins. A small quantity of irradiated Hanford single pass reactor fuel is also stored in each of the two basins.

The K Basins Facility includes the 105KE and 105KW Irradiated Fuel Storage Basins and certain auxiliary 100-K Area facilities required to support fuel storage in the basins. These auxiliary facilities include water pumping, treatment and discharge facilities, maintenance shops, electrical service facilities, and office and laboratory space. The remaining presently unused 100-K Area facilities have been turned over to the Hanford Surplus Facilities Program to await eventual D&D.

D.1.2 CANISTER STORAGE BUILDING (PROJECT W-379)**MISSION**

The mission of the Spent Nuclear Fuel (SNF) Project Canister Storage Building (CSB) is to provide for safe, economic, environmentally sound staging and dry interim storage for K Basins spent nuclear fuel until a decision on final disposition is reached and implemented. The CSB also houses nuclear Hot Conditioning System (HCS) Equipment.

In the staging mode of operation, the CSB receives multi-canister overpacks (MCOs), filled with K Basins spent fuel and places them in storage positions with the MCO Handling Machine (MHM). The CSB provides short-term storage (six years or less) of the MCOs and stages the MCOs for hot conditioning. The MHM is used to retrieve the staged MCOs and transfer them to the HCS for processing. After final drying, the MCOs are returned to the storage tubes for forty-year storage, or until the final disposition has been determined and the long-term repository is available.

FACILITY DESCRIPTION

The CSB consists of a steel operating area shelter, which encloses the load-in/load-out area and the HSC Annex, and three equally sized below-grade concrete vaults covered by a concrete operating deck. Support functions and equipment are housed in a steel building located north of the operations building. Only the northern most vault (vault 1) is equipped with steel tubes for staging and storing of the MCOs. The storage tubes are supported from the foundation base slab of the vault and are accessed through tube plugs in the operating deck. The tube plugs provide shielding, confinement, and connections for purge and evacuation. The MCO storage vault (vault 1) is cooled by natural convection through the above-grade, dedicated concrete and steel inlet structure and exhaust air stack, and the below-grade reinforced concrete plenums.

A gantry-type receiving crane is used to transfer the MCO cask from the transporter trailer to a below-grade service station pit in the load-in/load-out area located at the north end of the operating area. The MCO is removed from the cask and either placed into a vertical steel tube house in the vault, or moved directly to the HCS Annex on the south side of the CSB operating area. The MHM is used to transfer the MCO from the cask to the storage tube for staging, from the tube to the HCS Annex for conditioning, and from the HCS Annex back to the CSB storage tube for interim storage.

Storage tube vent and purge carts are used for periodic pressure purging and evacuation and reinserting of each storage tube.

Vault 1 contains 220 storage tubes, each capable of staging or storing two MCOs. Six additional tubes are available to accommodate overpacked MCOs. Each standard storage tube contains both a bottom and an intermediate impact absorber. Standard storage tube plugs contain connections for sampling, purging, evacuating, and relieving of tube atmosphere and a pressure gauge for surveillance of tube pressure. Overpack storage tube plugs are designed for shielding only, and do not have purge and evacuation connections.

The CSB Facility has storm drains and flood control facilities. The CSB Facility also has the following support systems: backup electrical power; fire protection; heating, ventilating and air conditioning (HVAC) system (consisting of two subsystems); health protection system; inert gas supply system; utility distribution systems (electrical power, distributed control system, instrument and plant air system, liquid waste collection, potable water); and auxiliary systems (communications systems, safeguards and security system).

D.1.3 COLD VACUUM DRYING FACILITY (PROJECT W-441)

MISSION

The mission of the SNF Project Cold Vacuum Drying (CVD) Facility subproject is to safely, reliably, and consistently perform the following activities: receive the MCOs containing the K Basins spent nuclear fuel and K Basins water, remove the free water, remove the residual water by cold vacuum drying, backfill the MCO with inert gas, and release the MCO for transport to the CSB.

FACILITY DESCRIPTION

The CVD Facility is housed in a separate new structure located to the west of the K Basins West Power Control Building. The CVD Facility consists of a fenced-off area surrounding a building, a transport access staging area, various outside equipment, and utility connections. The CVD Facility building is a steel-frame structure on a concrete pad.

The CVD Facility building comprises four areas: the processing bays, the process water tank room, the transfer corridor and auxiliary spaces, and the administrative area. The processing area contains process bays in which transport trailers can be contained while the free water is drained and a vacuum-gas purge process dries the spent fuel. Four of these bays are used for processing and the fifth (bay 1) is a spare. Process bays are accessed through a transfer corridor and auxiliary spaces area that has change rooms, an access corridor, and a second floor mechanical room that houses facility equipment. An administrative area houses the control room and other features required to support and coordinate operations.

The process bays house the process systems. The process systems are composed of a vacuum pumping system and a MCO-tempered water system for performing MCO drying operations. The process water tank room houses the radioactive liquid waste system, which receives and processes the contaminated water from the MCOs. The second floor mechanical rooms house the support systems, composed of HVAC systems, a chilled water system, compressed gases systems (helium and nitrogen), demineralized water system, compressed and instrument air system, and process chilled water systems (tempered water cooling and vacuum pumping system chilled water). The transfer corridor houses change rooms (which provide separate access to each processing bay), various operations support rooms, and the pipe runs and HVAC ducting to the process bays.

Transport trailers carrying the cask and MCO access the bays through overhead garage doors along the east side of the building. A corridor running along the west side of the building allows personnel access to the bays through change rooms, and acts as a chase for service header piping and conduits.

Appendix D

Each bay is an independent nuclear material secondary confinement structure that will block release to the outside environment, if an accident or Natural Phenomena Hazard causes a release from the drying process. Each bay is served by a dedicated ventilation system that circulates and filters air through high-efficiency particulate air (HEPA) filters. The ventilation system also exhausts process exhaust, and vent streams and air collected from a hood at the top of the MCO where connections are made and broken. Before being discharged to the environment, these exhausts are filtered through HEPA filters and collected in a stack that is monitored to detect radioactive emissions. Each bay has a fire protection detection and wet-pipe sprinkler systems, and floor drains leading to an outside collection sump for collecting fire water and water from the transport trailers.

Each bay has separate process equipment skids containing all of the processing equipment. There are two skids in each bay; one for the vacuum pumping system, and another for the MCO-tempered water system. These skids provide process line connections to the MCO and cask. Each bay is supplied with electrical power, instrument air, inert purge gas (helium and nitrogen), demineralized water, process-chilled water, and a radioactive liquid waste line from the radioactive liquid waste system connected to the process skids to transfer liquid waste. Ports in the MCO are connected to hoses that lead to the vacuum pumping system. The MCO bulk water is drained from the MCO by the radioactive liquid waste system to a receiver tank in the process water tank room. The vacuum pumping system is capable of drying the residual K Basins water contained in the MCO by purging warm dry gas through the MCO, or by pulling a vacuum on the MCO. A programmable logic controller directs a sequence of purge or vacuum cycles that dries the contents of the MCO. The MCO-tempered water system skid is connected to the cask annulus, and includes a hot and chilled water system that establishes and controls the temperature of the MCO during the drying process.

At the end of cold vacuum processing, each MCO undergoes a pressurization test to confirm the generation of hydrogen from water is sufficiently low to be able to seal the MCO for safe shipment to the CSB within a specified time window.

D.1.4 HOT CONDITIONING SYSTEM ANNEX (PROJECT W-484)**MISSION**

The SNF Project Hot Conditioning System (HCS) mission is to acquire a system that will remove residual chemically bound water and metal hydrides from the fuel in the MCOs. The HCS Annex subproject will provide multiple stations for concurrent processing of the MCOs. The process provided by this system minimizes the potential of subsequent pressurization of the sealed MCOs, by removing constituents that can change phase to a gaseous state under storage conditions. The total number of MCOs to be processed is 225 from the 105 K East Basin, and 202 from the 105 K West Basin. Current plans require all MCOs to be processed within a two-year period beginning in September 1998.

FACILITY DESCRIPTION

The HCS Facility Annex is an extension of the CSB, which is located in the 200 East Area of the Hanford Site. The HCS Annex is located on the south side of the CSB. The site includes infrastructure in the form of unpaved roads, fire and sanitary water mains, sanitary sewer collection and treatment facilities, and overhead power lines.

The HCS Facility Annex houses the HCS equipment and hot conditioning operations. The HCS Annex consists of substructure, operations deck, superstructure, HCS equipment accommodations, and support facilities. The HCS Annex extends road access to the southwest corner of the CSB/HCS Annex Facility, extends the MHM crane rails for MHM access of the HCS Annex six process stations and the welding station, and provides adequate space and clearance to enable the safe conduct of operations. The HCS Annex also extends CSB utilities and services essential for grounding, lighting, HVAC, operation of safeguards and security, communications, alarms, etc. The area south of the HCS Annex shall be kept clear and free of encumbrances to allow for future expansion and protect future interface of the CSB with other users.

D.2 COMPLIANCE ASSESSMENT RESULTS

D.2.1 ASSESSMENT OF K BASINS FACILITY

The compliance matrix attached to the prior revisions of WHC-SP-1131 presented the results of an initial baseline assessment of compliance with the requirements of the WHC Quality Assurance Program (QAP). This QAP was contained in Section 3.0 of the WHC QAP/Implementation Plan (IP) for 10 CFR 830.120 (WHC-SP-1131). The matrix identified whether the requirements of the QAP had been implemented, partially implemented, or not implemented. The assessment was performed in accordance with the methodology discussed in Section 4.1 of WHC-SP-1131, Rev 1.

D.2.2 RESULTS OF COMPLIANCE ASSESSMENT

The requirements of the WHC QAP for 10 CFR 830.120 had been implemented at the K Basins Facility, except as noted below.

1) Actions Necessary to Achieve Compliance with 10 CFR 830.120, Criterion 2

- Actions:
1. Establish the bases for K Basins management/supervision, operations, maintenance, and technical support personnel training.
 2. Prepare training matrices/plans/programs for these personnel, including plant-specific training.
 3. Revise the 5480.20 Training Implementation Matrix accordingly and resubmit to RL.

4. Implement the training matrices/plans/programs.

Compensatory Measures:

K Basins management restricted work activities at the K Basins Facility as follows until the quality problems identified for Criterion 2, 5, 6 and 9 herein are resolved:

1. Hazard Category 3 and above activities must successfully pass the Readiness Assessment process per DOE 5480.31, before they are allowed to be performed.
2. Work on all K Basins Facility safety systems are being controlled through the rigorous application of the Job Control System and extensive management oversight. This assures the work is properly planned and executed, and the applicable customer requirements are met.

Completion Date: 9-30-95; ACTION COMPLETE

Cost (incremental, if any): \$300K

2) Actions Necessary to Achieve Compliance with 10 CFR 830.120, Criterion 5

Action: 1. Complete revisions of K Basins administrative procedures, as necessary, to bring them current with the K Basins mission, policies, management philosophy, organizational structure, responsibilities and interfaces, and to incorporate any additional changes necessitated by the Standard Requirement Identification Document Phase I Assessments results.

Compensatory Measures:

Same as for Criterion 2 actions.

Completion Date: 9-30-95; ACTION COMPLETE

Cost (incremental, if any): None

3) Actions Necessary to Achieve Compliance with 10 CFR 830.120, Criterion 6

- Actions:
1. Complete the reconstitution of the design bases for those Safety Class 3 systems at 105KE/KW Basins facilities that protect workers from radiological exposure.
 2. Reestablish configuration control for these facilities.
 3. Provide drawings for these facilities for use by K Basins operations, maintenance, engineering, and other organizations, as needed.

Appendix D

4. Provide supporting documentation (including reconstituted/available design bases, operations philosophy, vendor information, etc.) for these facilities for use by K Basins Engineering, Operations, Maintenance and other organizations, as needed.

Compensatory Measures:

Same as for Criterion 2 actions.

Completion Date: 1-9-98

Cost (incremental, if any): \$1,400K

4) Actions Necessary to Achieve Compliance with 10 CFR 830.120, Criterion 9

- Action:
1. Complete Action 3 above, and define the pathway for removing the fuel from the K Basins Facility.
 2. Establish an integrated, resource-loaded schedule for near-term storage of the fuel in the K Basins Facility.

Compensatory Measures:

Same as for Criterion 2 actions.

Completion Date: 9-30-96; ACTION COMPLETE

Cost (incremental, if any): None

Document Title: WESTINGHOUSE HANFORD COMPANY QUALITY ASSURANCE
PROGRAM AND IMPLEMENTATION PLAN

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EXECUTIVE SUMMARY

In response to the Price-Anderson Amendments Act of 1988 and the Quality Assurance Rule (Title 10 Code of Federal Regulations Part 830.120) of May 5, 1994, DOE contractors were required to submit a Quality Assurance Program (QAP) and an Implementation Plan (IP) to DOE on November 1, 1994. This document is the first revision of the QAP/IP for the nuclear facilities managed and operated by the Westinghouse Hanford Company (WHC). Development of the initial IP required review of the WHC quality assurance program to the requirements of the 10 CFR 830.120, and completion of initial baseline assessments against the QAP to verify implementation of the program.

Each WHC-managed nuclear facility provided a stand-alone section to the QAP/IP, describing its mission and life-cycle status, and the results of the initial baseline assessment performed to determine implementation status. WHC support organizations which have lead for certain elements of the QAP also performed assessments for their lead areas, and provided inputs to a separate, stand-alone section with the initial baseline assessment results. Each of the revision 0 sections included a matrix that listed the 10 CFR 830.120 requirements, cross-referencing them to the sections of the QAP that implement the requirements, and identified whether or not the requirements had been implemented. For any program elements not implemented, the IP identified actions, schedules, and appropriate interim compensatory measures. In this first revision, the initial baseline matrixes, for those facilities found to be in compliance with the QAP, have been removed. Tank Waste Remediation System and K Basins have modified their baseline matrixes to show completion of action items to date.

With the following exceptions, the WHC-managed nuclear facilities and their support organizations were found to have implemented QA programs that satisfy the requirements of 10 CFR 830.120.

Tank Waste Remediation System (TWRS) identified Implementation Plan Action Items having to do with: generation and revision of as-built drawings; updating TWRS organizational and program documents; tracking the condition/age of materials/equipment, and; reconstitution of design bases for existing, active facilities. No incremental funding needs were identified for FY95. For FY97, TWRS identified incremental funding in the amount of \$65,000 for as-built drawings, and \$100,000 for tracking the age/condition of materials/equipment.

The K Basin Fuel Storage Facility identified Implementation Plan Action Items having to do with: training; updating procedures; establishing configuration management, reconstituting design bases, and providing drawing; and developing integrated, resource-loaded schedules. Incremental funding needs in the amount of \$1.7 million were identified, over a time period through March 1996, to implement the actions. The costs were all associated with the actions on training (\$300K) and configuration management, design bases, and drawings (\$1.4M).

Schedular details and compensatory measures for the action items are provided in Appendices A and D to this document.

WHC-SP-1131

Changes to the QAP described in Section 3.0 of this document included 1) the deletion of examples of specific productivity improvement programs under Criterion 3 and, 2) under Criterion 10, changed the implementation reference from the WHC corrective action management system to Criterion 3, which contains the QAP description of this process. The removal of these examples and the change in reference do not represent significant changes, and the QAP as approved in the initial revision of this document continues to satisfy the requirements of 10 CFR 830.120.

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ATTACHMENT 1: Projects in the design, construction, and/or preoperational testing phase which have the potential to be classified as a nuclear facility.

Quality Assurance Program**1.0 GENERAL INFORMATION****1.1. Purpose**

This is the first revision of the Westinghouse Hanford Company (WHC) Quality Assurance Program (QAP) and Implementation Plan (IP) required by Title 10 of the Code of Federal Regulations (CFR) Part 830.120, *Quality Assurance Requirements*. Section 3.0 provides the quality assurance program description for each criterion of this regulation.

1.2 Scope

WHC has a quality program which is applied across the company, in a graded approach. The scope of this document is limited to the application of 10 CFR 830.120 requirements to nuclear facilities managed and operated by the WHC on behalf of the U.S. Department of Energy, Richland Operations Office (RL).

The specific nuclear facilities to which this QAP/IP applies are identified in Section 2 of this document.

1.3 Content and Format

The content of this document includes a description of the quality assurance program implemented at the WHC, and the implementation status of 10 CFR 830.120 at each WHC-managed nuclear facility. Specific activities, compensatory actions, and completion dates are also identified where the initial baseline assessments found that QAP requirements, as contained in Section 3.0 of this document, were not being implemented.

The format of this document is as follows:

Section 1 provides general information on the purpose of the document, including content and format.

Section 2 provides the definition of a nuclear facility. This definition is used to determine 10 CFR 830.120 applicability at WHC-managed facilities. The WHC-managed nuclear facilities are listed in this Section.

Section 3 provides the QAP. This section includes a description of the way each criterion of 10 CFR 830.120 is implemented at WHC-managed nuclear facilities.

Section 4 is the IP for the WHC. It describes the baseline assessment activities that were performed in order to determine the current level of compliance with the requirements of 10 CFR 830.120. The results of the initial baseline assessments performed under the direction of the responsible managers are provided in the appendices in the initial revision of this document. These appendices identified, where appropriate, the actions to be taken to implement 10 CFR 830.120, with corresponding schedules and compensatory actions. In this revision, the initial baseline matrixes, for facilities with compliant quality assurance programs, have been removed. Table #1 summarizes actions, schedules, and resource needs.

Section 5 describes the prioritization system used to determine the priorities for actions needed to implement QAP (Section 3.0 of this document) requirements.

Section 6 identifies that no exemptions were necessary.

Section 7 describes the tracking system used to monitor progress and completion status for activities needed to implement a requirement.

Section 8 lists the documents referenced in this document.

Section 9 addresses the revision of this document and identifies the organization responsible for maintaining this document.

Appendices A through M provide facility-specific information.

Appendix N provides oversight/support organization-specific information.

1.4 Facilities, Missions, and Status

The facility-specific appendices to this document provide information on the mission and status of each WHC-managed nuclear facility.

2.0 APPLICABILITY - DEFINITION OF A NUCLEAR FACILITY

Title 10 CFR 830.120 is applicable to each WHC-managed nuclear facility (per 10 CFR 830.3). The list of WHC-managed nuclear facilities, which includes those activities that involve radioactive and/or fissionable materials in such form and quantity that a nuclear hazard potentially exists to the employees or the general public, is detailed below.

Tank Waste Remediation System

- Waste Tanks (Aging Waste, Double Shell, and Single Shell)

- Grout

- 242-A Evaporator

- 242-S,T Evaporators

Solid Waste Disposal

- Central Waste Complex

- Burial Grounds

- Transuranic Storage and Assay Facility (TRUSAF)

- T-Plant

340 Waste Handling Facility

- K Basin Fuel Storage Facility

- N Reactor Fuel Supply Facility

- Fast Flux Test Facility (FFTF) and Maintenance and Storage Facility (MASF)

- B-Plant/Waste Encapsulation Storage Facility (WESF)

- Plutonium Finishing Plant (PFP)

- Plutonium Uranium Extraction (PUREX) Facility

Quality Assurance Program

UO, Facility
222 S Laboratory
308 Building

The list of WHC-managed nuclear facilities was determined in accordance with the criteria of DOE-STD-1027-92, "Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Orders 5480.23 Nuclear Safety Analysis Reports," Section 3.1, "Radiological Hazards," and DOE-EM-STD-5502-94, "Hazard Baseline Documentation," Section 5.1, "Hazard Baseline Documentation Criteria for EM Nuclear Facilities."

A list of projects in the design, construction, and/or preoperational testing phase which have the potential to be classified as a nuclear facility is provided in Attachment 1. Candidate projects and projects not validated or authorized are not included in this list. Due to the dynamic evolution throughout the project lifecycle, this list is provided for information only. The current life cycle status, scope, and authorization level must be verified prior to using this list for compliance purposes to the requirements established in Section 3.0 of this document.

3.0 QUALITY ASSURANCE PROGRAM

The WHC organizational structure is shown in Figure 1. The WHC President and General Manager is the company's point of contact accountable to the Department of Energy for regulatory and contractual issues and provides for the allocation of company resources. Under the President's Office, WHC is structured around four major projects supported by administrative and oversight organizations. The four major projects are:

- Tank Waste Remediation System, which is responsible for the management of all the highly radioactive liquid waste created by plutonium production at Hanford. This responsibility includes the storage, remediation, treatment and preparation for permanent disposal of the radioactive nuclear waste contained in Hanford's waste storage tanks. In addition, TWRS manages the WHC lessons learned program.
- Spent Nuclear Fuel Project, which is responsible for managing the disposition of all of the spent nuclear fuel at the Hanford Site. This responsibility includes operation of the K Basin fuel storage facilities, and engineering evaluations to support storage or processing alternatives.
- Transition Projects, which is responsible for the deactivation of former Defense Production facilities and preparing them for eventual turnover to decontamination and decommissioning. This division is also responsible for management of the WHC technical training services as a center of excellence. This responsibility includes the development of training standards and instructions, conduct of specialized training, and the performance of systematic performance evaluations to measure the effectiveness of the training.

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- ~~8. Personnel performing assessments are technically qualified and knowledgeable in the areas being assessed. Assessors are responsible for: evaluating work performance and process effectiveness; identifying abnormal performance and potential problems; finding opportunities for improvements; documenting and reporting results; and verifying satisfactory resolution of reported problems in accordance with the OAP description for Criterion 3.~~

4.0 IMPLEMENTATION PLAN

4.1 Compliance Assessment

Compliance assessments of WHC nuclear facilities, and activities supporting those facilities, were performed using the requirements of 10 CFR 830.120, as reflected in the QAP contained in Section 3.0 of this document. The assessment activities were conducted using a graded approach by focusing on the facilities and activities that presented the greatest risk to nuclear safety. Matrices documenting the baseline assessment were presented in the initial revision of this document.

All WHC-managed nuclear facilities, with the exception of Tank Waste Remediation System and K Basins, have implemented quality assurance programs in accordance with Section 3.0 of this document. In this revision, the initial baseline matrices, for facilities with compliant quality assurance programs, have been removed. Tank Waste Remediation System (see Appendix A) and K Basins (see Appendix D) have modified their baseline matrices to show the completion of action items to date.

In these matrices, Appendices A and D, the implementation status of each requirement, as reflected in Section 3.0 of this document is indicated by a "Y", "P", "N", and "N/A" where:

"Y" — means that the requirements of that element of 10 CFR 830.120 (as described in Section 3.0 of this document) are implemented effectively. An effective program can have individual instances of noncompliance with the established controls.

"P" — means there is an established program for meeting the requirement, (for example a document control program), but there is a significant implementation problem with one or more elements of the overall program.

"N" — means that the program controls are missing: there is no program covering the requirements.

"N/A" — means that the requirement as reflected in Section 3.0 of this document is not applicable to the assessing organization, or that responsibility for implementing the criteria lies with another organization.

Assessment results were documented by those responsible for the facility or activity. In those cases where deficiencies were identified that impact compliance to a requirement, as reflected in Section 3.0 of this document, are addressed in the Appendices to this document.

Quality Assurance Program

Except for areas identified in Appendices A and D and summarized in Section 4.2 of this document, all WHC-managed nuclear facilities, and their oversight/support organizations have implemented quality assurance programs that satisfy the requirements of 10 CFR 830.120.

Each WHC-managed nuclear facility is accountable and responsible for implementing the nuclear safety commitments defined in Section 3.0 of this document, and their facility-specific appendix. If a condition or event is identified that is potentially noncompliant with Section 3.0 of this document, the facility will screen the condition or event in accordance with DOE-HDBK-1089-95, "Guidance for Identify, Reporting, and Tracking Nuclear Safety Noncompliances," to determine reportability. Each facility is expected to use existing programs, such as audits, appraisals, self-assessments, to assist in managing the compliance baseline for the quality assurance program requirements.

4.2 10 CFR 830.120 Implementation Plan Action, Schedules, and Resource Assessments

Tank Waste Remediation System and K Basin Fuel Storage Facility were the only two organizations to identify Implementation Plan Action Items for 10 CFR 830.120. Table #1 summarizes the action, schedules, and incremental funding identified in the appendices to this document.

5.0 PRIORITIZATION

The actions needed to implement the requirements of 10 CFR 830.120 (as established in the QAP contained in Section 3.0 of this document) are prioritized based on such factors as: the importance of the action to safe facility operation; the availability of cost-effective compensatory measures; and the overall resources available. Risk magnitudes and cost/benefit considerations are utilized when developing budgets and scheduling priorities for proper utilization of resources. The WHC Priority Planning Grid (PPG) system is a part of the prioritization process. The implementation plan action items and schedules in the facility-specific Appendices to this document reflect these priorities.

6.0 EXEMPTIONS

No exemptions are necessary.

7.0 TRACKING OF ACTIVITIES AND MILESTONES

The implementation plan actions are tracked using the Hanford Action Tracking System (HATS).

TABLE #1: IMPLEMENTATION PLAN ACTION ITEMS SUMMARY

FACILITY	ACTION ITEM	SCHEDULE	INCREMENTAL COST
TWRS	Generate As-Builts for new construction projects	October 1996 - December 1996	\$65,000
TWRS	Revise As-Builts to denote upgrades and maintenance	October 1995 - September 2000	0
TWRS	Update organization and program documents	Completed	0
TWRS	Track condition/age of material/equipment	October 1995 - September 1996	\$100,000
TWRS	Specify design basis for existing facilities	October 1997 - September 2005	0
K Basin	Provide training design and train personnel accordingly	Completed	\$300,000
K Basin	Update administrative procedures to make them current and applicable to the facility	Completed	0
K Basin	Reestablish configuration management, reconstitute design bases and provide updated drawings for 105KE/KW Basin facilities	Complete by March 1996	\$1,400,000
K Basin	Establish an integrated, resource-loaded schedules for near-term storage of the fuel	Completed	0

Compensatory measures are described in the Appendices A (TWRS) and D (K Basin Fuel Storage Facility)

Quality Assurance Program**8.0 REFERENCES**

Title 10 Code of Federal Regulations (CFR), Part 830.120, "Quality Assurance Requirements."

U.S. DOE Standard 1027-92, "Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports."

DOE-EM-STD-5502-94, "Hazard Baseline Documentation."

DOE-HDBK-1089-95, "Guidance for Identify, Reporting, and Tracking Nuclear Safety Noncompliances,"

Quality Requirements (WHC-CM-4-2): Each QR applies only to the extent specified in the text of Section 3.0 of this document.

QR 1.0, Revision 4, "Organization," Change 1, dated March 8, 1995

QR 2.0, Revision 3, "Quality Assurance Program," dated September 30, 1993

QR 3.0, Revision 5, "Design Control," dated September 30, 1993

QR 4.0, Revision 4, "Procurement Document Control," Change 1, dated November 2, 1994

QR 5.0, Revision 3, "Instructions, Procedures, and Drawings," dated September 30, 1993

QR 6.0, Revision 1, "Document Control," dated December 31, 1992

QR 7.0, Revision 4, "Control of Purchased Items and Services," dated July 6, 1994

QR 8.0, Revision 5, "Identification and Control of Items," dated March 28, 1994

QR 9.0, Revision 4, "Control of Processes," dated September 30, 1993, including Page Change 1 dated March 1, 1994

QR 10.0, Revision 3, "Inspection and Surveillance," dated July 6, 1994

QR 11.0, Revision 4, "Test Control," dated August 22, 1994

QR 12.0, Revision 5, "Control of Instruments," dated September 30, 1993

QR 13.0, Revision 3, "Handling, Storage, and Shipping," dated March 28, 1994

QR 14.0, Revision 5, "Inspection, Test, and Operating Status," dated July 6, 1994

QR 15.0, Revision 5, "Control of Nonconforming Items," dated September 30, 1993

QR 16.0, Revision 3, "Corrective Action," dated September 30, 1993

QR 17.0, Revision 2, "Quality Assurance Records," dated August 9, 1991, including Page Change 2 dated May 2, 1995

QR 18.0, Revision 4, "Audits," dated March 8, 1995

QR 19.0, Revision 1, "Software Quality Assurance Requirements," dated September 30, 1993

9.0 MAINTENANCE OF THIS DOCUMENT

In accordance with 10 CFR 830.120, WHC may at any time make changes to this document. Changes made over the previous year will be submitted annually to RL for review. The submittal will identify the changes, the pages affected, the reason for the changes, and the basis for concluding that the revised document continues to satisfy the requirements of 10 CFR 830.120. Changes made to correct spelling, punctuation, or other editorial items will not need to have an explanation. The WHC Quality Assurance organization is responsible for the development and maintenance of this document.

FIGURE 1: WESTINGHOUSE HANFORD COMPANY ORGANIZATIONAL STRUCTURE

Tank Waste Remediation System

Compliance Assessment and Implementation Plan for

Title 10 CFR Part 830.120

Quality Assurance Requirements

Concurrence Signatures:

James H. Wicks, Jr., Nuclear Safety Compliance Officer

12 Jan 96

Date

Jack Weber, Manager, TWRS Quality Assurance

1/12/96

Date

J. M. Garcia, Manager, Characterization Project ESQ

1-25-96

Date

I certify under penalty of law, as defined in 10 CFR 820.71, that the information provided herein is true and accurate to the best of my knowledge, information, and belief.

Approval Authority:

Roger F. Bacon, Vice-President, TWRS

1/15/96

Date

Appendix A

TANK WASTE REMEDIATION SYSTEM**A.1 Mission**

The mission of the Tank Waste Remediation System is to store, treat, and immobilize highly radioactive waste in an environmentally sound, controlled, and cost effective manner.

A.2 Nuclear Facilities

The Tank Waste Remediation System contains several nonreactor nuclear facilities. Tank Waste Remediation System nonreactor nuclear facilities include Waste Tanks (i.e., Single Shell Tanks, Double Shell Tanks, and transfer lines linking tanks), 242 Evaporators, Grout Facility, and nonreactor nuclear facility construction projects. The Waste Tanks qualify as nonreactor nuclear facilities because of the presence of radionuclides in their sludge, solids, or pumpable liquid portion.

The Waste Tanks consist of underground tanks that store highly radioactive mixed waste. The waste tanks (both single and double shell) are located in the several "tank farms" in the 200 East and 200 West Areas of the Hanford Site.

A.3 Status of FacilitiesSingle Shell Tanks

The Single Shell Tanks have one carbon steel wall, are surrounded by reinforced concrete, and are situated below ground level. They were constructed between the years 1944 and 1964, and accepted waste until 1980. Waste in the Single Shell Tanks consists of liquids, sludges, and saltcake. Over the years, the majority of the free-standing liquids have been transferred to Double Shell Tanks.

The Single Shell Tanks and ancillary structures are aged plants in a less-than-desirable material condition. About one-half of the Single Shell Tanks have leaked, or are assumed to have leaked. Most of the systems, components, and structures have exceeded their design life. The Single Shell Tanks have been physically isolated and are no longer capable of accepting waste.

The objective for the Tank Waste Remediation System organization is to achieve a controlled, clean, and stable condition. Additionally, the objective for Single Shell Tanks is to achieve a shutdown mode. Therefore, those activities which are applicable to operations will be curtailed as the Single Shell Tanks progress to an inactive status. The progress from active to inactive will be dependant on the specific characteristics of each individual Single Shell Tank.

Appendix A

Double Shell Tanks

Double Shell Tanks, which have two carbon steel walls, were constructed between the years 1970 and 1986, and were designed for 50 years of storage. The space between the two walls is monitored for leaks. None of the Double Shell Tanks have been known to leak. The Double Shell Tanks are used to treat and store a variety of liquid radioactive waste from the Single Shell Tanks and from various Hanford Site processes. The waste is stored in tanks based upon composition, level of radioactivity, or origin. Waste transfers routinely occur between Double Shell Tanks as part of the active waste management practices required for the continued safe storage of the waste.

242-A Evaporator

The 242-A Evaporator is operational and is employed to reduce the volume of Double Shell Tank waste contents. A recently completed facility upgrade has extended the design life into the early 21st century and has also brought important portions of the facility up to current design and safety standards. Several operational campaigns are currently planned to reduce the volume of waste stored in the Tank Farms.

242-S Evaporator

The 242-S Evaporator facility was shutdown in 1980. At the time of shutdown, there was no management objective to maintain configuration control. Original drawings had not been revised and updated to denote upgrades and maintenance; the condition and age of materials and equipment had not been tracked; records of the design and design basis had not been retained. These conditions exist today. A Shutdown/Standby Plan (SD-WM-SSP-002) was issued in September 1988, which provides specific information as to the steps taken to achieve a Condition III shutdown/standby status. A surveillance and monitoring program has been maintained to assure compliance with environmental safety; this program is conducted under the auspices of the West Tank Farm.

The 242-S Evaporator has a radioactive inventory which has only been roughly quantified. Therefore, the 242-S Evaporator will continue to be treated as a nuclear facility.

The control room of the 242-S Evaporator is being used to monitor ventilation systems, alarms, etc., in the 242-S Evaporator and the Tank Farms; the control room will continue to be utilized and will be maintained in an operating condition. As an operating control room, the requirements relative to configuration control and management have been applied. The 242-S Evaporator, exclusive of the control room, will be maintained in the shutdown/standby mode and is considered to be inactive.

Appendix A

242-T Evaporator

The 242-T Evaporator was shutdown in 1972 and considered to be inoperable. At the time of shutdown, there was no management objective to maintain configuration control. Original drawings had not been revised and updated to denote upgrades and maintenance; the condition and age of materials and equipment had not been tracked; records of the design and design basis had not been retained. These conditions exist today. Tanks located in the facility were used to receive and neutralize waste until November 1980. In April 1981, a Shutdown/Standby Plan was written. A final transfer was made in 1982, however, a significant radioactive inventory remained in the pot. Due to the high activity level, the radioactive inventory can not be easily established, and therefore, the 242-T Evaporator will continue to be treated as a nuclear facility. In April 1983, a revised Shutdown/Standby Plan (SD-HS-SAR-009) was issued; which details the steps necessary to place the process portion of the 242-T Evaporator facility in shutdown/standby condition V (no operational mission is predicted). A surveillance and monitoring program has been maintained to assure compliance with environmental safety; this program is conducted under the auspices of the West Tank Farm.

The Shutdown/Standby Plan does require the maintenance of controlled air flow within the 242-T Evaporator facility and HEPA filtration of exhaust air. Therefore, the control room has been maintained active and is being used to monitor ventilation systems, alarms, etc., in the 242-T Evaporator and the Tank Farms.

The objective of the Tank Waste Remediation System organization is to eliminate the functions of the control room and place the entire facility in a shutdown mode. The facility will then be considered inactive and will be isolated.

Grout Treatment Facility

The Grout Treatment Facility is a low-level waste nonreactor nuclear facility which combines cementitious materials with low-level radioactive liquid waste for permanent disposal. It consists of a nonradioactive dry component storage and mixing plant, a dry component-waste mixing facility, and below-grade disposal vaults for the resultant grout.

As a result of the recent Tank Waste Remediation System rebaselining activity, the Grout Treatment Facility was shut down and placed in standby. Current standby plans will allow for a facility restart within two years if emergency tank space is needed. Prior to rebaselining, one below-grade disposal vault was filled with nonhazardous, low-activity grout during August 1988 startup, and sealed for interim stabilization until final site closure. This vault is actively storing radioactive waste and is subject to closure and post-closure requirements specified in DOE Orders and Consent Orders.

Construction Projects

A variety of large scale construction projects are planned for Tank Waste Remediation System. These projects are integral to the mission of achieving a controlled, clean, and stable condition for the tank waste. These projects are subject to the requirements of Section 3.0 of this document.

Appendix A

A.4 Overview of Compliance Assessment Process

The compliance matrix included with this appendix documents the assessment that Tank Waste Remediation System performed to determine compliance issues. The context of the assessment was the active Tank Waste Remediation System nonreactor nuclear facilities. The sources used to identify potential compliance issues were (1) Standards/Requirements Identification Document (S/RID) evaluations for Westinghouse Hanford Company Tank Waste Remediation System Operations, (2) the Tank Waste Remediation System Tank Farm Transition Projects Issues Management process, and (3) the audits pertinent to Tank Waste Remediation System performed by Westinghouse Hanford Company Compliance Assurance. The assessment process involved evaluation of each of the Quality Assurance Plan paragraphs referenced in the compliance matrix to determine (1) if a Tank Waste Remediation System program or system exists to respond to the requirement and (2) whether the Tank Waste Remediation System program or system is effectively implemented.

If both conditions were met (i.e., system and program in place and implemented effectively), the implementation status of the requirement was then listed as "YES". If the assessment showed that no system or program is in place to respond to the requirement, the implementation status was then listed as "NO", and the reason for the "NO" status was cited.

If the assessment showed that a system or program is in place to respond to the requirement, but the system or program had not been substantially implemented, the implementation status was then listed as "PARTIALLY", and the reason for the "PARTIALLY" status was cited. Action items were designated to address those topics that had a "NO" or "PARTIALLY" implementation status.

A.5 Results of Compliance Assessment

The Tank Waste Remediation System compliance assessment revealed five areas requiring attention. Each of the five areas is identified as an action item below.

Action Item #1 Generate As-builts for Construction Projects

Description: The process to generate reliable as-built drawings for Tank Waste Remediation System nonreactor nuclear facility construction projects does not result in a physically verified engineering configuration due to lack of a clearly defined "as-built" definition and criteria for a graded application (e.g., safety class) to various systems. Effective management of operations and maintenance activities at Tank Waste Remediation System facilities is adversely affected by the lack of an effective process for generating as-builts and verifying their validity with a walkdown at facility turnover.

Appendix A

Corrective Action and Milestone: Construction Projects, in conjunction with Tank Waste Remediation System Safety and Technical Integration and Tank Farm Transition Projects, must establish a process to generate accurate and reliable as-builts of new nuclear facilities at the point of turnover to Tank Waste Remediation System Plant for operation. These organizations will work with the Site Engineer/Engineering Council to establish standard definition/criteria for as-building, including the requirements for a walkdown. The process shall account for a verification "walkdown" of essential facility systems (i.e., those systems that must function during normal operation and those that must function to safely shut the facility down during an emergency). The process shall also assure that the results of the walkdown are incorporated into the as-built documentation.

The requirement for definition and criteria has been completed in December 1995, in order to support on-going construction projects. Upon completion of the definition and criteria, each project will prepare specific change requests to implement the new requirement(s).

Compensatory Action: None - there are no new, large-scale construction projects due for turnover to startup or operation planned in the immediate future.

Schedule: The schedule is based on early resolution of the definition/criteria for as-building the drawings such that a common approach is established. The corrective action will commence on October, 1996 and complete December, 1996.

Incremental Cost: \$ 0 (Fiscal Year 1996)
\$65,000 (Fiscal Year 1997)

Action Item #2 Revise "As-builts" to Denote Upgrades and Maintenance

Description: The process to update design drawings to reflect "as-built" conditions after non-project facility upgrades or maintenance had been performed in existing Tank Waste Remediation System facilities was ineffectively performed. Field verification of conditions was often not performed. Effective management of operations and maintenance activities at Tank Waste Remediation System facilities (especially during emergency situations) is adversely affected by the lack of an effective process for updating as-built drawings and verifying their continuing validity with a walkdown after non-project upgrade or maintenance activity.

Corrective Action and Milestone: Tank Waste Remediation System Safety and Technical Integration, in conjunction with Tank Waste Remediation System Tank Farm Transition Projects, has developed a process to cause drawings of existing, active facilities to be updated after non-project facility upgrade or maintenance has occurred, such that the current configuration is documented.

Westinghouse Hanford Company currently revises drawings affected by a facility upgrade or maintenance activity. The procedures, however, do not explicitly require to have modifications "as-built" prior to incorporation on the drawing.

Appendix A

An "as-built" process is required to ensure that drawings are revised to show that the actual field configuration of a facility reflects the as-installed condition. The "as-built" process should incorporate the Engineering Change Notice, Nonconformance Report, and Unreviewed Safety Question process. The "as-built" process should also be capable of (1) supporting the reconstitution of the design basis, and (2) revising/ updating operations and maintenance procedures, and support documents such as Safety Analysis Reports, technical specifications, and Master Equipment List (MEL).

The schedule for implementing this new process should account for those active facilities that will remain active longest having the highest priority.

Inactive facilities do not require their drawings as-built because they are in permanent shutdown. The permanent shutdown status minimizes the need to perform work in a manner that would not allow for verification of actual conditions. The Grout Treatment Facility drawing status is in near total as-built condition because of concerted effort during construction and the few years of its operation to maintain a current design baseline. The standby status, however, minimizes the need to perform work in a manner that would require drawing verification of actual field conditions. Response to emergency situations at a shutdown facility is unlikely to be substantially impeded by the lack of as-built drawings.

Compensatory Action: Westinghouse Hanford Company will continue with the existing Field Verification program (i.e, walkdown of systems to verify field and project initiated work). The Field Verification Program was initiated by Tiger Team Assessment TTA-90-0000-OA.7-3 and is identified as Tank Waste Remediation System Safety Initiative 4C.

The purpose of the Field Verification Program is to provide accurate drawings of waste tank facilities. The Program consists of updating to actual field configuration (as building) all Essential and Support drawings necessary for the safe operation, training of personnel, and maintenance of 200 East and 200 West tank farm facilities. Critical drawings (those used to support safety analysis determinations) are also verified and presently support the current level of safety analysis development.

A new drawing program has been initiated which effectively establishes the "as-built" status for some systems. As an additional compensatory action, the Labeling program provides labels for components, input for the Master Equipment List, and develops System drawings.

This compensatory action is funded and not contingent upon approval of incremental costs identified below.

Schedule: The schedule for improving the process to update design drawings will be performed over a number of years. The schedule is as follows:

Start in October 1995
Conclude by September 2000

Incremental Cost: \$0

Appendix A

Action Item #3 Update Tank Waste Remediation System Organization and Program Documents

Both the Quality Assurance and Plant organization have completed the specific corrective actions. Therefore, this action item is complete and the closure package is filed in the RL Docketing System.

WHC-CM-6-34, "Quality Management Plan", was issued August 1995. This document describes the organizational structure; the functions and responsibilities; major Tank Waste Remediation System organizational interfaces; and deliverables of organizations within Tank Waste Remediation System.

WHC-IP-0842 documents the structure of the Tank Farm Transition Projects organization. Further, the document addresses responsibility goals; objectives; performance indicators; and establishes procedures, instructions, and policies which address work.

Action Item #4 Track the Condition and Age of Materials and Equipment

Description: The process to track the condition and age of materials and equipment used in Tank Waste Remediation System facilities suffers from a lack of historical information. Effective management of operations and maintenance activities at these facilities is adversely affected by a lack of the information necessary to control material condition and aging. Also individual components are calibrated as single instruments without regard to their function within a system loop. Loop calibrations to ensure that system loops are operating within tolerance are not performed.

Corrective Action and Milestone: The Waste Tank facility is an aged plant with less than desirable material condition. Many systems have exceeded their design life. Operations and maintenance activities have largely focused on operating components, systems and structures. In order to comply with maintenance management requirements to track the condition and age of materials and equipment, the existing facility inspection program will have to be expanded and upgraded.

The information necessary to determine the condition and age of materials and equipment is that information which describes the loop operating parameters (e.g. time, temperature, pressure). The current program collects and maintains this information based on instruments which are calibrated as individual components. Loop calibration will be initiated to ensure that the monitoring or data collection system is operating, and that the data gathered are suitable for predicting the life characteristics of materials and equipment.

The revised facility inspection program to gather the loop information will implement the requirements established by DOE Order 4330.4B, Maintenance Management Programs, Chapter 2, Nuclear Facilities, Element 14, "Facility Condition Inspections." This element identifies inspection requirements for nuclear facilities and establishes minimum standards for tracking and completing corrective actions identified during facility inspections. A "graded approach" will be used to determine work priority.

Appendix A

Compensatory Action: The previously referenced facility inspection program is being incorporated into a facility monitoring program. All deficiencies identified while monitoring is performed will be documented and tracked in the Work Control System. Long range items that require out year budget support will be tracked in the Tank Waste Remediation System Tank Farm Transition Projects Maintenance Long-Range Plan. This compensatory action is funded and not contingent upon the approval of incremental costs identified below.

Hazard Category 3 and above facilities must successfully pass the Westinghouse Hanford Company Readiness Review process per DOE 5480.31 before they are allowed to be operated.

Schedule: The schedule for improving the process to track the condition and age of material and equipment is as follows:

Start in October 1995

Conclude by September 1996

Incremental Cost: \$100,000 (Fiscal Year 1996)

Action Item #5 Specify Design Basis for Existing Facilities

Description: The design basis for many Tank Waste Remediation System facilities is poorly defined. Effective management of operations and maintenance activities at Tank Waste Remediation System facilities, especially during an emergency, is adversely affected by the lack of a design basis for Tank Waste Remediation System facilities.

Corrective Action and Milestone: Tank Waste Remediation System Safety and Technical Integration, in conjunction with Tank Waste Remediation System Tank Farm Transition Projects, must establish a process to reconstitute the design basis for existing, active Tank Waste Remediation System facilities, in accordance with the Configuration Management Plan.

The schedule for reconstituting the design basis shall account for those active facilities that will remain active longest having higher priority than those due for inactivation and decommissioning in the near term.

Compensatory Action: Additional field verification steps are taken during the planning stages of maintenance and operations activities to ensure worker and public safety. A specific example of this is the additional field validation stage prior to work on electrical systems.

Hazard Category 3 and above facilities must successfully pass the Westinghouse Hanford Company Readiness Review process per DOE 5480.31 before they are allowed to be operated.

Appendix A

Schedule: The schedule is as follows:

Start in October 1997

Conclude by September 2005

Incremental Cost: \$0

TANK WASTE REMEDIATION SYSTEM 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 1: PROGRAM				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
A written QAP shall be developed, implemented, and maintained.	1.	*	See Support Organization Compliance Matrix	
The QAP shall describe the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing, and assessing the work.	2. 3.	*	See Support Organization Compliance Matrix	
The QAP shall describe management processes, including planning, scheduling, and resource considerations.	4.	*	See Support Organization Compliance Matrix	

Status Key Y = Yes (in compliance)
 P = Partially (additional action(s) required)
 N = No (additional action(s) required)
 NA = Not Applicable (justification required)
 * = Function performed by Site wide Support Organization

TANK WASTE REMEDIATION SYSTEM 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 2: PERSONNEL TRAINING AND QUALIFICATION				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Personnel shall be trained and qualified to ensure they are capable of performing their assigned work.	1. 2. 3. 4. 5.	Y		
Personnel shall be provided continuing training to ensure that job proficiency is maintained.	6. 7.	Y		

Status Key Y = Yes (in compliance)
 P = Partially (additional action(s) required)
 N = No (additional action(s) required)
 NA = Not Applicable (justification required)

Appendix A

TANK WASTE REMEDIATION SYSTEM 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 3: QUALITY IMPROVEMENT				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Processes to detect and prevent quality problems shall be established and implemented.	1.	Y		
Items, services, and processes that do not meet established requirements shall be identified, controlled, and corrected according to the importance of the problem and the work affected.	2. 3.	Y		
Correction shall include identifying the causes of problems and working to prevent recurrence.	4.	Y		
Item characteristics, process implementation, and other quality-related information shall be reviewed and the data analyzed to identify items, services, and processes needing improvement.	5.	Y		

Status Key

Y = Yes (in compliance)

P = Partially (additional action(s) required)

N = No (additional action(s) required)

NA = Not Applicable (justification required)

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CRITERION 4: DOCUMENTS AND RECORDS				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Documents shall be prepared, reviewed, approved, issued, used, and revised to prescribe processes, specify requirements, or establish design.	1. 2. 3.	P	There are two compliance issues associated with this requirement. Both relate to Configuration Management. 1) The system to generate accurate as-built drawings of nuclear facilities to be constructed is ineffective. 2) The process to update as-built drawings to reflect performed maintenance and upgrades in the Tank Farms is ineffectively performed.	Action Item 1 Action Item 2
Records shall be specified, prepared, approved, and maintained.	4. 5.	Y		

Status Key Y = Yes (in compliance)
 P = Partially (additional action(s) required)
 N = No (additional action(s) required)
 NA = Not Applicable (justification required)

TANK WASTE REMEDIATION SYSTEM 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 5: WORK PROCESSES				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Work shall be performed to established technical standards and administrative controls using approved instructions, procedures, or other appropriate means.	1. 2. 3. 4. 5. 6.	Y		
Items shall be identified and controlled to ensure their proper use.	7.	Y		
Items shall be maintained to prevent their damage, loss, or deterioration.	8.	P	Most elements of the TWRS material control system are established and effective. However, one element (material condition and aging control) needs attention.	Action Item 4
Equipment used for process monitoring or data collection shall be calibrated and maintained.	9.	P	While the primary components of process monitoring and data collection systems are routinely calibrated and maintained, current practices do not provide calibration of system loops.	Action Item 4

Status Key Y = Yes (in compliance)
 P = Partially (additional action(s) required)
 N = No (additional action(s) required)
 NA = Not Applicable (justification required)

TANK WASTE REMEDIATION SYSTEM 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 6: DESIGN				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Items and processes shall be designed using sound engineering/scientific principles and appropriate standards.	1. 2.	Y		
Design work, including changes, shall incorporate applicable requirements and design bases.	3. 4.	P	The design bases for some TWRS facilities have not been specified. The design basis of particular waste tanks and ancillary facilities is inadequately specified.	Action Item 5
Design interfaces shall be identified and controlled.	5. 6.	Y		
The adequacy of design products shall be verified or validated by individuals or groups other than those who performed the work.	7.	Y		
Verification and validation work shall be completed before approval and implementation of the design.	8.	Y		

Status Key Y = Yes (in compliance)
 P = Partially (additional action(s) required)
 N = No (additional action(s) required)
 NA = Not Applicable (justification required)

TANK WASTE REMEDIATION SYSTEM 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 7: PROCUREMENT				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Procured items and services shall meet established requirements and perform as specified.	1. 2. 3. 4. 5.	Y		
Prospective suppliers shall be evaluated and selected on the basis of specified criteria.	6. 7.	*	See Support Organization Compliance Matrix	
Processes to ensure that approved suppliers continue to provide acceptable items and services shall be established and implemented.	8. 9.	*	See Support Organization Compliance Matrix	

Status Key Y = Yes (in compliance)
P = Partially (additional action(s) required)
N = No (additional action(s) required)
NA = Not Applicable (justification required)
* = Function performed by Site wide Support Organization

TANK WASTE REMEDIATION SYSTEM 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 8: INSPECTION AND ACCEPTANCE TESTING				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Inspection and testing of specified items, services, and processes shall be conducted using established acceptance and performance criteria.	1. 2. 3. 4. 5. 6.	Y		
Equipment used for inspections and tests shall be calibrated and maintained.	7. 8.	Y		

Status Key Y = Yes (in compliance)
 P = Partially (additional action(s) required)
 N = No (additional action(s) required)
 NA = Not Applicable (justification required)

TANK WASTE REMEDIATION SYSTEM 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 9: MANAGEMENT ASSESSMENT				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Managers shall assess their management processes.	1.	Y		
Problems that hinder the organization from achieving its objectives shall be identified and corrected.	2.	Y		

Status Key Y = Yes (in compliance)
 P = Partially (additional action(s) required)
 N = No (additional action(s) required)
 NA = Not Applicable (justification required)

TANK WASTE REMEDIATION SYSTEM 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 10: INDEPENDENT ASSESSMENT				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Independent assessments shall be planned and conducted to measure item and service quality, to measure the adequacy of work performance, and to promote improvement.	1. 2. 3. 4. 5. 6.	*	See Support Organization Compliance Matrix	
The group performing independent assessments shall have sufficient authority and freedom from the line to carry out its responsibilities.	7.	*	See Support Organization Compliance Matrix	
Persons conducting independent assessments shall be technically qualified and knowledgeable in the areas assessed.	8.	*	See Support Organization Compliance Matrix	

Status Key Y = Yes (in compliance)
 P = Partially (additional action(s) required)
 N = No (additional action(s) required)
 NA = Not Applicable (justification required)
 * = Function performed by Site wide Support Organization

Solid Waste Disposal Division

Compliance Assessment and Implementation Plan for

Title 10 CFR Part 830.120

Quality Assurance Requirements

Concurrence Signatures:

Solid Waste Management

Robert L. Girou, Nuclear Safety Compliance Officer

Date

1/11/96

Paul L. Hapke, Manager

Date

1/11/96

T-Plant

Steven H. Norton, Nuclear Safety Compliance Officer

Date

1/11/96

Malcolm S. Wright, Manager

Date

1/11/96

Analytical & Environmental Quality Assurance

Dana G. Farwick, Manager

Date

1/11/96

I certify under penalty of law, as defined in 10 CFR 820.71, that the information provided herein is true and accurate to the best of my knowledge, information, and belief.

Approval Authority:

William H. Hamilton, Jr., Manager, Solid Waste Disposal Division

Date

1/11/96

Appendix B

SOLID WASTE DISPOSAL

B.1 MISSION

Receive, store, treat, decontaminate, and dispose of solid radioactive and nonradioactive dangerous wastes in a safe, cost effective, and environmentally compliant manner.

B.2 FACILITY DESCRIPTION

Solid Waste Disposal is composed of 4 Nuclear Facilities: Transuranic Storage and Assay Facility (TRUSAF); Burial Grounds, Central Waste Complex (CWC), and T Plant (including 2706-T). A description of each facility is provided below.

Transuranic Storage and Assay Facility (TRUSAF)

The TRUSAF Facility (224-T) is located in the 200 West Area of the Hanford Site. TRUSAF assays, x-rays, and stores transuranic waste for the Hanford site.

The 224-T Building was originally constructed for purifying plutonium. It was idle for several years after new processes made it obsolete. The 224-T Building was modified to meet requirements for the storage of transuranic and transuranic mixed waste. The operating and services areas have been stripped of all unnecessary control equipment, panel boards, and partitions to provide approximately 11,500 ft² of storage space on three floors.

The 224-T Building is approximately 197 ft long and 60 ft wide. The modified building is constructed of reinforced concrete walls, floor, and ceiling.

The three floors of the building used for TRUSAF are completely sealed from the southeast third of the building which contains the six contaminated process cells. The floors are connected by stairway A at the north end of the building, by stairway B at the south end of the building, and by an elevator adjacent to stairway A. There is also an unloading dock off the elevator on the outside of the building.

The storage area on the first floor is located in the former gallery area associated with A through F cells. This area contains a toilet, mechanical room, and space for storage. The storage area on the first floor is in an open area with arrays marked off or painted on the floor.

The storage area on the second floor is located in the former gallery area associated with A through F cells. The individual process cell sample galleries, which protrude into this area but are not part of the storage area, are sealed off. Storage on the second floor is in an open area, with arrays marked on the floor.

The storage area on the third floor is located in the former operating gallery area associated with cells A through E.

Appendix B

Continuous air monitoring of operating and storage areas on each of the 3 floors is provided by CAMs. Contaminated areas (the sealed process cells) are controlled by the building HVAC.

Burial Grounds

The Low Level Burial Grounds (LLBG) are located in the 200 East and 200 West Areas of the Hanford Site. Each burial ground is comprised of a number of trenches. Six active burial grounds are located in the 200 West Area and two active burial grounds are located in the 200 East Area.

The burial grounds consist of trenches that are linearly oriented excavations used for a variety of waste that have included, but not limited to, low-level waste in sealed fiberboard boxes, 55-gallon, drums, specially fabricated wood, metal, and reinforced concrete containers and both packaged and direct-buried failed equipment.

Prior to April, 1970, all solid wastes, regardless of radionuclide content, were placed in trenches and covered with earth to prevent release of contamination. Since then, DOE required that radioactive solid wastes be segregated by categorizing as either transuranic (TRU) and placed in retrievable storage or non-TRU and placed in non-retrievable disposal sites. After 1970, steel drums of TRU waste were segregated from LLW and placed in retrievable storage trenches. In 1987, the mixed waste burial was halted with few exceptions.

Central Waste Complex (CWC)

The CWC is a multi-facility complex, located in the 200 West Area of the Hanford Site. The CWC receives and stores most of the solid mixed wastes (MW) that are generated, received, and stored at the Hanford Site. The solid wastes that are handled at the CWC include both currently stored and newly generated contact-handled transuranic (CH-TRU), low level waste (LLW), MW, and PU/PCB wastes.

The CWC is comprised of approximately 17 storage buildings, low-flashpoint modules, and 2 pads, and support facilities. The CWC provides storage space for approximately one hundred thousand 208-L (55 gal) or equivalent waste containers. Facilities with physical features that provide for segregated storage areas are operated to maintain appropriate separation between arrays of incompatible waste.

The Low Flashpoint Mixed Waste (LFMW) Storage Modules are designed to meet storage requirements for hazardous and radioactive (except flammable TRU) wastes. Two of the modules have been modified for TRU flammable waste. The modules are small pre-engineered buildings.

The Mixed Waste (MW) Storage Facility consists of an initial phase consisting of 13 similar storage buildings (2401-W, 2402-W and 2402-WB through 2402-WL). Adjacent to the buildings are two open air pads: an asphalt staging area and a concrete storage pad. The buildings were designed to meet the requirements for hazardous, mixed, and radioactive wastes. The storage buildings are each 4,000 ft² metal structures, approximately 50 ft wide by 80 ft long and an eave height of approximately 20 ft.

Appendix B

The Waste Receiving and Staging Area is an asphalt pad approximately 200 ft long and 150 ft deep. The pad is used for handling and staging containers of radioactively contaminated waste destined for the various facilities. Components of the pad include an access for loaded trucks and other vehicles.

The Storage Pad is a 6 in. curbed 9,000 ft² concrete pad with an access ramp. The pad has a rainwater collection and removal system.

The latest phase of the MW Storage Facility consists of four large buildings (2403-WA through 2403-WD). Each storage building is planned and designed to contain four separate quadrants for managing various hazard categories. Each building was designed to meet all the requirements for hazardous, mixed, and radioactive type wastes.

Each building is a steel-supported, sheet metal-covered structure with unobstructed clear height of no less than 17 ft and roof slopes of 1 in 12. The structural system is modular beam and column rigid frame. Each rigid frame is supported by two interior columns, spaced at distances of one-third of the building's overall width. The roof and wall panels are 26-gauge steel sheets with exterior finish.

Each building is un-insulated with the exception of the heated sprinkler riser enclosure. The purpose of the enclosure is to provide a heated space within which the sprinkler system riser may be housed and kept from freezing.

T Plant

The original buildings at T Plant were constructed in the mid-1940's to extract plutonium from production reactor fuel. The plant continued to perform this function until it was deactivated in 1956. Most of its original process equipment subsequently was removed. In 1957 T Plant was placed in service as a beta-gamma decontamination facility and as a support complex for experiments and other operations requiring containment or isolation. It currently functions as a decontamination and waste handling/segregation facility. One of the process cells has been converted to a pool and it is used for storage of spent fuel.

The T Plant Facility consists of two primary decontamination buildings: 221-T and 2706-T. Building 221-T was built during 1943 to 1944. Building 221-T provides services in radioactive decontamination, reclamation, and decommissioning of process and other equipment contaminated with fission products. The 2706-T Building was built during 1959 to 1960. Building 2706-T was constructed as a low-level radioactive decontamination facility and is used to segregate wastes, decontaminate railroad equipment, buses, trucks, automobiles, road-building equipment, and plant process equipment.

B.3 COMPLIANCE ASSESSMENT OF SOLID WASTE DISPOSAL DIVISION FACILITIES FOR IMPLEMENTATION OF 10 CFR 830.120

The compliance matrix attached to the initial revision of this document provided the results of an initial baseline assessment of compliance with the requirements of the WHC Quality Assurance Program (QAP) that describes how the requirements of 10 CFR 830.120 are implemented at WHC-managed nuclear facilities. This QAP is contained in Section 3.0 of the WHC QAP/Implementation Plan (IP) for 10 CFR 830.120 (WHC-SP-1131), to which this document is appended. The matrix identified whether the requirements of the QAP had been implemented, partially implemented, or not implemented. The assessment was performed in accordance with the methodology discussed in Section 4.1 of the QAP/IP for 10 CFR 830.120 (WHC-SP-1131).

Certain of the requirements of the WHC QAP are performed by WHC organizations other than the nuclear facilities. For example, Criterion 10, Independent Assessment, is performed by a support organization, and not by the nuclear facilities themselves. Criterion 2, Personnel Training and Qualifications, was assessed by the Training, Health Physics, and Safety organizations for applicability and status of their support roles. The initial baseline matrix identified which QAP requirements are performed and/or assessed by support organizations. There is a separate appendix with the results of the compliance assessments performed by these support organizations, for implementation of the QAP requirements for which they have lead responsibility.

SWD personnel completed the compliance matrix by evaluating the QAP compliance commitment for each of the requirements. The QAP reference was then compared to the procedures used and it was then determined whether compliance was achieved or partial compliance was being met. No cases of non-compliance were identified.

Management self-assessments are completed semi-annually in SWD. Reports are prepared and submitted to the Director of SWD. Actions are identified for items of non-compliance and they are tracked to completion. In addition, overview assessments are provided by Safety and Quality Assurance personnel.

Based on these initial baseline assessments, SWD concluded that operations in the Division were being performed in a manner that meet the 10 CFR 830.120 Requirements.

B.4 RESULTS OF INITIAL BASELINE COMPLIANCE ASSESSMENT

The baseline 10 CFR 830.120 compliance assessment (Ref. WHC-SP-1131, Rev. 0, "Westinghouse Hanford Company Quality Assurance Program and Implementation Plan, dated March 1, 1995) identified that the requirements of the WHC QAP for 10 CFR 830.120 compliance were implemented at the Solid Waste Disposal Division facilities, described above, with no exceptions at that time.

340 Waste Handling Facility

**Compliance Assessment and
Implementation Plan for**

Title 10 CFR Part 830.120

Quality Assurance Requirements

Concurrence Signatures:

M. E. Poole, Nuclear Safety Compliance Officer

12/21/95
Date

Dana G. Farwick, Manager, A&E Quality Assurance

1/5/95
Date

I certify under penalty of law, as defined in 10 CFR 820.71, that the information provided herein is true and accurate to the best of my knowledge, information, and belief.

Approval Authority:

L. W. Roberts, Manager, 300 Area Liquid Effluent Facilities

12/21/95
Date

Appendix C

340 WASTE HANDLING FACILITY**C.1 MISSION**

The 340 Waste Handling Facility serves as a less than 90 day waste handling facility for radioactive liquid waste supporting Pacific Northwest National Laboratories activities conducted in the 300 Area.

C.2 FACILITY DESCRIPTION

The 340 Facility services two liquid waste systems from Pacific Northwest Laboratories' 324, 325, 326, 327, and 329 Buildings located in the 300 Area. Radioactive Liquid Waste (RLW) is received at the facility from these laboratories via the Radioactive Liquid Waste System (RLWS) underground pipeline. The facility stores the waste and ships it via rail tankers to the Double Shell Tanks (DSTs).

The facility also manages potentially radioactive process sewer waste from the Retention Process Sewer (RPS). The facility maintains diverter stations in each of the 300 Area laboratories mentioned above, except the 326 and 329 Buildings which have a common diverter. These diverter stations monitor for radioactivity; if radioactivity is detected, the waste is diverted to the RLWS. If radioactivity is not detected, RPS liquid waste continues to the four open-top concrete 307 basins located within the 340 Facility complex. The 307 basins are a non-nuclear component which serve as a final holding/monitoring point for liquid waste before transfer to the process sewer. If radioactivity is detected in the waste at the 307 Basins, the waste may be diverted to the 340 Facility RLW holding tanks.

C.3 COMPLIANCE ASSESSMENT OF 340 WASTE HANDLING FACILITY FOR IMPLEMENTATION OF 10 CFR 830.120

The compliance matrix attached to the initial revision of this document provided the results of an initial baseline assessment of compliance with the requirements of the WHC Quality Assurance Program (QAP) that describes how the requirements of 10 CFR 830.120 are implemented at WHC-managed nuclear facilities. This QAP is contained in Section 3.0 of the WHC QAP/Implementation Plan (IP) for 10 CFR 830.120 (WHC-SP-1131), to which this document is appended. The matrix identified whether the requirements of the QAP had been implemented, partially implemented, or not implemented. The assessment was performed in accordance with the methodology discussed in Section 4.1 of the QAP/IP for 10 CFR 830.120 (WHC-SP-1131).

Some of the requirements of the WHC QAP are performed by WHC organizations other than the nuclear facilities. For example, Criterion 10, Independent Assessment, is performed by a support organization, and not by the nuclear facilities themselves. The initial baseline matrix identified which QAP requirements are performed by support organizations. There is a separate appendix with the results of the compliance assessments performed by these support organizations, for implementation of the QAP requirements for which they have lead responsibility.

Appendix C

C.4 RESULTS OF INITIAL BASELINE COMPLIANCE ASSESSMENT

The baseline 10 CFR 830.120 compliance assessment (Ref. WHC-SP-1131, Rev. 0, "Westinghouse Hanford Company Quality Assurance Program and Implementation Plan, dated March 1, 1995) identified that the requirements of the WHC QAP for 10 CFR 830.120 compliance were implemented at the 340 Waste Handling Facility, described above, with no exceptions at that time.

Actions Necessary to Achieve Compliance with 10 CFR 830.120

Action: N/A

Completion Date: N/A

Cost (incremental, if any): N/A

K Basins Facility

**Compliance Assessment and
Implementation Plan for**

Title 10 CFR Part 830.120

Quality Assurance Requirements

Concurrence Signatures:

Cherri Defigh-Price, Nuclear Safety Compliance Officer

12-21-95

Date

Dennis W. Smith, Manager, SNFP Quality Assurance

12-22-95

Date

I certify under penalty of law, as defined in 10 CFR 820.71, that the information provided herein is true and accurate to the best of my knowledge, information, and belief.

Approval Authority:

Dean W. Siddoway, Director, K Basins

12/22/95

Date

APPENDIX D**K BASINS FACILITY****D.1 MISSION**

The mission of the K Basins Facility is to maintain storage of irradiated nuclear fuel until the DOE selects an interim and/or final irradiated fuel disposition method.

D.2 FACILITY DESCRIPTION

The 105KE and 105KW reactors, their irradiated fuel storage basins, and auxiliary facilities were built in the early 1950's and ceased operation in the early 1970's. All irradiated nuclear fuel from operation of the 105KE and 105KW reactors was removed from the basins at that time. The 105KE Irradiated Fuel Storage Basin was modified in 1974-1975 to store irradiated N Reactor fuel. In a similar manner the 105KW Irradiated Fuel Storage Basin was modified in 1980 to provide additional storage capacity for irradiated N Reactor fuel. Presently, approximately 2100 MTU of irradiated N Reactor fuel are stored in the two basins in about evenly divided quantities. A small quantity of irradiated Hanford single pass reactor fuel is also stored in each of the two basins.

The K Basins Facility includes the 105KE and 105KW Irradiated Fuel Storage Basins and certain auxiliary 100K Area facilities required to support fuel storage in the basins. These auxiliary facilities include water pumping, treatment and discharge facilities, maintenance shops, electrical service facilities and office and laboratory space. The remaining presently unused 100-K Area facilities have been turned over to the Hanford Surplus Facilities Program to await eventual decontamination and decommissioning.

D.3 COMPLIANCE ASSESSMENT OF K BASINS FACILITY FOR IMPLEMENTATION OF 10 CFR 830.120

The attached compliance matrix provides the results of an updated assessment of current compliance of the K Basins Facility with the requirements of the WHC Quality Assurance Program (QAP) that describes how the requirements of 10 CFR 830.120 are implemented at WHC-managed nuclear facilities. This update accounts for those actions which have been completed since Rev. 0 of this plan. This QAP is contained in Section 3.0 of the WHC QAP/Implementation Plan (IP) for 10 CFR 830.120 (WHC-SP-1131), to which this document is appended. The matrix identifies whether the requirements of the QAP have been implemented, partially implemented, or not implemented. The assessment was performed in accordance with the methodology discussed in Section 4.1 of the QAP/IP for 10 CFR 830.120 (WHC-SP-1131). For requirements that have not been implemented, or which have been partially implemented, necessary actions have been identified in the following section of this document.

Certain of the requirements of the WHC QAP are performed by WHC organizations other than the nuclear facilities. For example, Criterion 10, Independent Assessment, is performed by a support organization, and not by the nuclear facilities themselves. The attached matrix identifies which QAP requirements are performed by support organizations. There is a separate appendix with the results of the compliance assessments performed by these support organizations, for implementation of the QAP requirements for which they have lead responsibility.

D.4 RESULTS OF COMPLIANCE ASSESSMENT

The requirements of the WHC QAP for 10 CFR 830.120 have been implemented at the K Basins Facility described above, except as noted below:

1) Actions Necessary to Achieve Compliance with 10 CFR 830.120, Criterion 2

- Actions:
1. Establish the bases for K Basins management/supervision, operations, maintenance and technical support personnel training.
 2. Prepare training matrices/plans/programs for these personnel, including Plant Specific Training.
 3. Revise the 5480.20 Training Implementation Matrix accordingly and resubmit to RL.
 4. Implement the training matrices/plans/programs.

Compensatory Measures:

K Basins management has restricted work activities at the K Basins Facility as follows until the quality problems identified for Criterion 2, 5, 6 and 9 herein are resolved:

- a. Hazard category 3 and above activities must successfully pass the WHC Readiness Assessment process per DOE 5480.31 before they are allowed to be performed.
- b. Work on all K Basins Facility safety systems are being controlled through the rigorous application of the WHC Job Control System and extensive management oversight. This assures the work is properly planned and executed, and the applicable customer requirements are met.

Completion Date: 9-30-95; ACTION COMPLETE

Cost (incremental, if any): \$300K

APPENDIX D

2) Actions Necessary to Achieve Compliance with 10 CFR 830.120, Criterion 5

- Action: 1. Complete revisions of K Basins administrative procedures, as necessary, to bring them current with the K Basins mission, policies, management philosophy, organizational structure, responsibilities and interfaces, and to incorporate any additional changes necessitated by the S/RIDs Phase I Assessments results.

Compensatory Measures: Same as for Criterion 2 actions.

Completion Date: 9-30-95; ACTION COMPLETE

Cost (incremental, if any): None

3) Actions Necessary to Achieve Compliance with 10 CFR 830.120, Criterion 6

- Action: 1. Complete the reconstitution of the design bases for those Safety Class 3 systems at 105KE/KW Basins facilities, which protect workers from radiological exposure.
2. Reestablish configuration control for these facilities.
3. Provide drawings for these facilities for use by K Basins operations, maintenance, engineering and other organizations, as needed.
4. Provide supporting documentation (including reconstituted/available design bases, operations philosophy, vendor information, etc.) for these facilities for use by K Basins Engineering, Operations, Maintenance and other organizations, as needed.

Compensatory Measures: Same as for Criterion 2 actions.

Completion Date: 3-31-96

Cost (incremental, if any): \$1,400K

4) Actions Necessary to Achieve Compliance with 10 CFR 830.120, Criterion 9

- Action: 1. Complete Action 3 above, and define the pathway for removing the fuel from the K Basins Facility.
2. Establish an integrated, resource-loaded schedule for near-term storage of the fuel in the K Basins Facility.

Compensatory Measures: Same as for Criterion 2 actions.

Completion Date: 9-30-96; ACTION COMPLETE less "Complete Action 3" in item 1 above

Cost (incremental, if any): None

K BASINS FACILITY 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 1: PROGRAM				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
A written QAP shall be developed, implemented, and maintained.	1.	*	See Support Organization Compliance Matrix	
The QAP shall describe the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing, and assessing the work.	2. 3.	*	See Support Organization Compliance Matrix	
The QAP shall describe management processes, including planning, scheduling, and resource considerations.	4.	*	See Support Organization Compliance Matrix	

Status Key Y = Yes (in compliance)
 P = Partially (additional action(s) required)
 N = No (additional action(s) required)
 NA = Not Applicable (justification required)
 * = Function performed by Site wide Support Organization

K BASINS FACILITY 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 2: PERSONNEL TRAINING AND QUALIFICATION				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Personnel shall be trained and qualified to ensure they are capable of performing their assigned work.	1.	Y		1
	2.	Y		
	3.	Y		
	4.	Y		
	5.	Y		
Personnel shall be provided continuing training to ensure that job proficiency is maintained.	6.	Y		
	7.	Y		

Status Key Y = Yes (in compliance)
P = Partially (additional action(s) required)
N = No (additional action(s) required)
NA = Not Applicable (justification required)

K BASINS FACILITY 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 3: QUALITY IMPROVEMENT				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Processes to detect and prevent quality problems shall be established and implemented.	1.	Y		
Items, services, and processes that do not meet established requirements shall be identified, controlled, and corrected according to the importance of the problem and the work affected.	2. 3.	Y Y		
Correction shall include identifying the causes of problems and working to prevent recurrence.	4.	Y		
Item characteristics, process implementation, and other quality-related information shall be reviewed and the data analyzed to identify items, services, and processes needing improvement.	5.	Y		

Status Key Y = Yes (in compliance)
 P = Partially (additional action(s) required)
 N = No (additional action(s) required)
 NA = Not Applicable (justification required)

K BASINS FACILITY 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 4: DOCUMENTS AND RECORDS				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Documents shall be prepared, reviewed, approved, issued, used, and revised to prescribe processes, specify requirements, or establish design.	1.	Y		
	2.	Y		
	3.	Y		
Records shall be specified, prepared, approved, and maintained.	4.	Y		
	5.	Y		

Status Key Y = Yes (in compliance)
P = Partially (additional action(s) required)
N = No (additional action(s) required)
NA = Not Applicable (justification required)

K BASINS FACILITY 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 5: WORK PROCESSES				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Work shall be performed to established technical standards and administrative controls using approved instructions, procedures, or other appropriate means.	1. 2. 3. 4. 5. 6.	Y Y Y Y Y Y		2
Items shall be identified and controlled to ensure their proper use.	7.	Y		
Items shall be maintained to prevent their damage, loss, or deterioration.	8.	Y		
Equipment used for process monitoring or data collection shall be calibrated and maintained.	9.	Y		

Status Key Y = Yes (in compliance)
 P = Partially (additional action(s) required)
 N = No (additional action(s) required)
 NA = Not Applicable (justification required)

K BASINS FACILITY 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 6: DESIGN				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Items and processes shall be designed using sound engineering/scientific principles and appropriate standards.	1. 2.	Y Y		
Design work, including changes, shall incorporate applicable requirements and design bases.	3. 4.	Y P	The 105KE/KW Basine facilities are beyond design base life and configuration control of these facilities has not been maintained; therefore, K Basine management has established a program to reconstruct the design base and reestablish configuration control of these facilities, and to provide drawings and supporting documentation (including design bases, available vendor information, operations philosophy, etc.) for the facilities.	3
Design interfaces shall be identified and controlled.	5. 6.	Y Y		
The adequacy of design products shall be verified or validated by individuals or groups other than those who performed the work.	7.	Y		
Verification and validation work shall be completed before approval and implementation of the design.	8.	Y		

Status Key Y = Yes (in compliance)
 P = Partially (additional action(s) required)
 N = No (additional action(s) required)
 NA = Not Applicable (justification required)

K BASINS FACILITY 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 7: PROCUREMENT				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Procured items and services shall meet established requirements and perform as specified.	1.	Y		
	2.	Y		
	3.	Y		
	4.	Y		
	5.	Y		
Prospective suppliers shall be evaluated and selected on the basis of specified criteria.	6.	*	See Support Organization Compliance Matrix	
	7.			
Processes to ensure that approved suppliers continue to provide acceptable items and services shall be established and implemented.	8.	*	See Support Organization Compliance Matrix	
	9.			

Status Key Y = Yes (in compliance)
 P = Partially (additional action(s) required)
 N = No (additional action(s) required)
 NA = Not Applicable (justification required)
 * = Function performed by Site wide Support Organization

K BASINS FACILITY 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 8: INSPECTION AND ACCEPTANCE TESTING				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Inspection and testing of specified items, services, and processes shall be conducted using established acceptance and performance criteria.	1.	Y		
	2.	Y		
	3.	Y		
	4.	Y		
	5.	Y		
	6.	Y		
Equipment used for inspections and tests shall be calibrated and maintained.	7.	Y		
	8.	Y		

Status Key Y = Yes (in compliance)
 P = Partially (additional action(s) required)
 N = No (additional action(s) required)
 NA = Not Applicable (justification required)

K BASINS FACILITY 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 9: MANAGEMENT ASSESSMENT				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Managers shall assess their management processes.	1.	Y		
Problems that hinder the organization from achieving its objectives shall be identified and corrected.	2.	Y		4

Status Key Y = Yes (in compliance)
P = Partially (additional action(s) required)
N = No (additional action(s) required)
NA = Not Applicable (justification required)

K BASINS FACILITY 10 CFR 830.120 COMPLIANCE MATRIX

CRITERION 10: INDEPENDENT ASSESSMENT				
REQUIREMENTS	QAP Paragraph Reference	Status	Implementation Comments	Implementation Plan Action Item Number
Independent assessments shall be planned and conducted to measure item and service quality, to measure the adequacy of work performance, and to promote improvement.	1. 2. 3. 4. 5. 6.	*	See Support Organization Compliance Matrix	
The group performing independent assessments shall have sufficient authority and freedom from the line to carry out its responsibilities.	7.	*	See Support Organization Compliance Matrix	
Persons conducting independent assessments shall be technically qualified and knowledgeable in the areas assessed.	8.	*	See Support Organization Compliance Matrix	

Status Key Y = Yes (in compliance)
 P = Partially (additional action(s) required)
 N = No (additional action(s) required)
 NA = Not Applicable (justification required)
 * = Function performed by Site wide Support Organization

300 Area N Reactor Fuel Supply Facility

Compliance Assessment and Implementation Plan for

Title 10 CFR Part 830.120 *Quality Assurance Requirements*

Concurrence Signatures:

David E. Rasmussen, Nuclear Safety Compliance Officer

1/05/96

Date

John N. Nansen, Manager, TP Quality Assurance

1/5/96

Date

I certify under penalty of law, as defined in 10 CFR 820.71, that the information provided herein is true and accurate to the best of my knowledge, information, and belief.

Approval Authority:

Ivan L. Metcalf, Manager, Fuel Supply Shutdown

1/5/96

Date

Appendix E

300 AREA N REACTOR FUEL SUPPLY FACILITY

E.1 MISSION

The 300 Area N Reactor Fuel Supply Facility is used primarily for storage of unirradiated fuel that was manufactured for use in the plutonium production reactors. Some of these facilities were used for chemical and waste stream storage and transfer, which has been terminated along with fuel manufacturing operations. Storage is the primary mission until disposal is accomplished. Individual facilities within this grouping will be turned over for decontamination and decommissioning activities once their usage is terminated and transfer of ownership is negotiated.

E.2 FACILITY DESCRIPTION

The 300 Area N Reactor Fuel Supply Facility is comprised of a variety of buildings, including two major structures, the 313 and 333 Buildings. The primary fuel fabrication operations were conducted in 333. The remaining structures were used as support buildings to the fabrication operations. The requirements of 10 CFR 830.120 apply to the quality affecting activities for the following non-reactor nuclear facilities, which are currently used to store fuel:

- 303-A Uranium Fuel Storage
- 303-B Uranium Fuel Storage
- 303-E Uranium Fuel Storage
- 303-G Uranium Fuel Storage
- 3712 Uranium Fuel Storage
- 3716 Unfinished Uranium Fuel Storage

The 300 Area N Reactor Fuel Supply Facility buildings have ceased operations and are in transition to shutdown for turnover for decommissioning. Fissionable material movements have stopped except for waste packaging and no significant movement is planned until ultimate disposal is approved.

The history of the NRFS Facility began in 1943 when the 313 Building was constructed to house manufacturing equipment for the Hanford single pass reactors fuel. Fuel production began in mid-1944, and continued through the early 1950's. The facility was then expanded to allow for increased fuel production. In the late 1960's, a process, which included nickel plating of the bare uranium cores prior to cladding, was developed and installed. This process continued until 1971, when the production line was shut down along with the single pass reactors. Other programs conducted at the 313 Building include support of a tritium production program from 1948 to 1952 and a thorium program in the late 1960's. For N Reactor Fuel Fabrication, the 76,199 ft² 313 Building provided waste treatment system, administrative offices, training, and warehouse space. This building also houses a complete N Reactor pressure tube fabrication facility consisting of a 4000 Ton Sutton extrusion press, draw bench, grinders, autoclaves, inspection, equipment and chemical cleaning equipment.

Appendix E

The 333 Building, constructed in 1958, houses the primary fabrication equipment for manufacturing N Reactor fuel. Fuel fabrication operations began in 1962. From 1965 to 1967, the facility was also used to construct lithium aluminate targets for demonstration of co-production in the N Reactor. The 46,633 ft² building contained equipment for all operations from initial component cleaning to finished fuel assembly, inspection, and packaging for shipment. Fabrication activities continued until N Reactor entered the standby phase in 1987.

E.3 COMPLIANCE ASSESSMENT OF 300 AREA N REACTOR FUEL SUPPLY FACILITY FOR IMPLEMENTATION OF 10 CFR 830.120

The compliance matrix attached to the initial revision of this document provided the results of an initial baseline assessment of compliance with the requirements of the WHC Quality Assurance Program (QAP) that describes how the requirements of 10 CFR 830.120 are implemented at WHC-managed nuclear facilities. This QAP is contained in Section 3.0 of the WHC QAP/Implementation Plan (IP) for 10 CFR 830.120 (WHC-SP-1131), to which this document is appended. The matrix identified whether the requirements of the QAP had been implemented, partially implemented, or not implemented. The assessment was performed in accordance with the methodology discussed in Section 4.1 of the QAP/IP for 10 CFR 830.120 (WHC-SP-1131).

Some of the requirements of the WHC QAP are performed by WHC organizations other than the nuclear facilities. For example, Criterion 10, Independent Assessment, is performed by a support organization, and not by the nuclear facilities themselves. The initial baseline matrix identified which QAP requirements are performed by support organizations. There is a separate appendix with the results of the compliance assessments performed by these support organizations, for implementation of the QAP requirements for which they have lead responsibility.

E.4 RESULTS OF INITIAL BASELINE COMPLIANCE ASSESSMENT

The baseline 10 CFR 830.120 compliance assessment (Ref. WHC-SP-1131, Rev. 0, "Westinghouse Hanford Company Quality Assurance Program and Implementation Plan, dated March 1, 1995) identified that the requirements of the WHC QAP for 10 CFR 830.120 compliance were implemented at the 300 Area N Reactor Fuel Supply Facility, described above, with no exceptions at that time.

Fast Flux Test Facility

**Compliance Assessment and
Implementation Plan for**

Title 10 CFR Part 830.120

Quality Assurance Requirements

I certify under penalty of law, as defined in 10 CFR 820.71, that the information provided herein is true and accurate to the best of my knowledge, information, and belief.

Approval Authority:

Edward F. Loika, Director, FFTF Transition Project

1/2/96
Date

Concurrence Signatures:

Wayne L. Marshall, Nuclear Safety Compliance Officer

12/28/95
Date

John N. Nansen, Manager, TP Quality Assurance

12/27/95
Date

FAST FLUX TEST FACILITY

F.1 MISSION

The primary mission of the Fast Flux Test Facility (FFTF) is currently that of defueling and transition to decontamination and decommissioning.

F.2 FACILITY DESCRIPTION

The Fast Flux Test Facility is located on the U.S. Department of Energy Hanford Site near Richland, Washington. More specifically, FFTF is located in the Hanford 400 Area, where it is operated by the Westinghouse Hanford Company. This facility was designed for irradiation testing of nuclear reactor fuels and materials for liquid-metal-fast-breeder reactors. The term Fast Flux Test Facility includes the reactor as well as the equipment and structures for heat removal, containment, core component handling and examination, instrumentation and control, and for supplying utilities and services such as emergency power generation and irradiated fuel storage.

The reactor, when operating, was a sodium-cooled, fast-neutron-flux reactor. Nominal conditions at a design power level of 400 MW included a peak neutron flux of 7×10^{15} n/cm²-s (60 to 65% > 0.1 MeV), a reactor inlet pressure of 133 psig, reactor inlet and outlet temperatures of 680°F and 980°F, and a sodium flow rate of 43,500 gal/min. Heat from the reactor was normally removed by three heat transport circuits. In December 1993, The Department of Energy concluded that they could identify no mission for FFTF, and ordered it to be placed in a radiologically and industrially safe shutdown condition, with a goal of accomplishing that effort in approximately 5 years. A detailed plan for achieving this shutdown condition has been written. Present facility conditions are that the Reactor Core is defueled as part of the preparation for decontamination and decommissioning. Future plans also call for draining the sodium from the facility.

F.3 COMPLIANCE ASSESSMENT OF FFTF FACILITIES SUBJECT TO 10 CFR 830.120

The compliance matrix attached to the initial revision of this document provided the results of an initial baseline assessment of compliance with the requirements of the WHC Quality Assurance Program (QAP) that describes how the requirements of 10 CFR 830.120 are implemented at WHC-managed nuclear facilities. This QAP is contained in Section 3.0 of the WHC QAP/Implementation Plan (IP) for 10 CFR 830.120 (WHC-SP-1131), to which this document is appended. The matrix identified whether the requirements of the QAP had been implemented, partially implemented, or not implemented. The assessment was performed in accordance with the methodology discussed in Section 4.1 of the QAP/IP for 10 CFR 830.120 (WHC-SP-1131).

Some of the requirements of the WHC QAP are performed by WHC organizations other than the nuclear facilities. For example, Criterion 10, Independent Assessment, is performed by a support organization, and not by the nuclear facilities themselves. The initial baseline matrix identified which QAP requirements are performed by support organizations. There is a separate appendix with the results of the compliance assessments performed by these support organizations, for implementation of the QAP requirements for which they have lead responsibility.

F.4 RESULTS OF INITIAL BASELINE COMPLIANCE ASSESSMENT

The baseline 10 CFR 830.120 compliance assessment (Ref. WHC-SP-1131, Rev. 0, "Westinghouse Hanford Company Quality Assurance Program and Implementation Plan, dated March 1, 1995) identified that the requirements of the WHC QAP for 10 CFR 830.120 compliance were implemented at the Fast Flux Test Facility, described above, with no exceptions at that time.

Maintenance and Storage Facility

Compliance Assessment and Implementation Plan for

Title 10 CFR Part 830.120 *Quality Assurance Requirements*

I certify under penalty of law, as defined in 10 CFR 820.71 that the information herein is true and accurate to the best of my knowledge, information and belief.

Approval Authority:

Edward F. Loika, Director, FFTF Transition Project

Date

Concurrence Signatures:

Wayne L. Marshall, Nuclear Safety Compliance Officer

Date

John N. Nansen, Manager, TP Quality Assurance

Date

Appendix G

MAINTENANCE AND STORAGE FACILITY

G.1 MISSION

The primary mission of the Maintenance and Storage Facility (MASF) is currently to provide direct support for the transition of the Fast Flux Test Facility (FFTF) to decontamination and decommissioning.

G.2 FACILITY DESCRIPTION

The Maintenance and Storage Facility is located on the U.S. Department of Energy Hanford Site near Richland, Washington. More specifically, MASF is located in the Hanford 400 Area, where it is operated by the Westinghouse Hanford Company. This facility was designed primarily for support of the Fast Flux Test facility.

MASF is a multipurpose service center that supports the specialized maintenance and storage requirements of the other 400 area facilities. MASF provides the capability for sodium film removal, decontamination, repair and storage of non-fuel components and hardware for the FFTF and Fuel Storage Facility and other 400 area facilities. Work at MASF includes handling items that are radioactive by neutron activation, and items that are contaminated with radioisotopes and/or sodium films. Of late, MASF has been used to support other Hanford projects such as Tank Waste Pump testing. Transuranic materials, in the form of fuel, are not permitted in the building.

Even though MASF is defined as a separate Nuclear Facility from FFTF, it is located only 500 feet from FFTF and is operated and administratively controlled by the FFTF management team. All Administrative Controls used for FFTF are also used for MASF. Therefore, all Quality Assurance practices for MASF are identical to those for FFTF.

G.3 COMPLIANCE ASSESSMENT OF FFTF FACILITIES SUBJECT TO 10 CFR 830.120

The compliance matrix attached to the initial revision of this document provided the results of an initial baseline assessment of compliance with the requirements of the WHC Quality Assurance Program (QAP) that describes how the requirements of 10 CFR 830.120 are implemented at WHC-managed nuclear facilities. This QAP is contained in Section 3.0 of the WHC QAP/Implementation Plan (IP) for 10 CFR 830.120 (WHC-SP-1131), to which this document is appended. The matrix identified whether the requirements of the QAP had been implemented, partially implemented, or not implemented. The assessment was performed in accordance with the methodology discussed in Section 4.1 of the QAP/IP for 10 CFR 830.120 (WHC-SP-1131).

Some of the requirements of the WHC QAP are performed by WHC organizations other than the nuclear facilities. For example, Criterion 10, Independent Assessment, is performed by a support organization, and not by the nuclear facilities themselves. The initial baseline matrix identified which QAP requirements are performed by support organizations. There is a separate appendix with the results of the compliance assessments performed by these support organizations, for implementation of the QAP requirements for which they have lead responsibility.

Appendix G

G.4 RESULTS OF INITIAL BASELINE COMPLIANCE ASSESSMENT

The baseline 10 CFR 830.120 compliance assessment (Ref. WHC-SP-1131, Rev. 0, "Westinghouse Hanford Company Quality Assurance Program and Implementation Plan, dated March 1, 1995) identified that the requirements of the WHC QAP for 10 CFR 830.120 compliance were implemented at the Maintenance and Storage Facility, described above, with no exceptions at that time.

B Plant/Waste Encapsulation Storage Facility

Compliance Assessment and Implementation Plan for

Title 10 CFR Part 830.120 *Quality Assurance Requirements*

I certify under penalty of law, as defined in 10 CFR 820.71, that the information provided herein is true and accurate to the best of my knowledge, information, and belief.

Approval Authority:

J. C. Midgett, Director, B Plant/WESF Transition Project

12/22/95

Date

Concurrence Signatures:

Dennis W. Wilson, Manager, B Plant/WESF Regulatory Compliance

12/22/95

Date

John N. Nansen, Manager, TP Quality Assurance

12/22/95

Date

B PLANT/WASTE ENCAPSULATION STORAGE FACILITY

H.1 MISSION

The present mission of B Plant is to safely and cost effectively transition the facility to a "shutdown" status in a compliant, minimal surveillance configuration for turn-over to the Hanford Environmental Restoration Contractor for surveillance and maintenance activities by September 30, 1998. Included is expedited hazards reduction to enable completion of the transition to "shutdown" status by that date.

The Waste Encapsulation and Storage Facility (WESF) near term mission is to provide effective storage stewardship for safe, cost-effective management of Hanford's cesium and strontium capsule inventory, associated WESF facilities, and their work force. Buildings and equipment not required for these activities will be deactivated in preparation for D&D activities.

H.2 FACILITY DESCRIPTION

A primary Hanford Waste Management goal for high level radioactive waste from nuclear fuel reprocessing was the removal and long term isolation of this waste from the biosphere. As an intermediate step in the process, this program included removal of the long-lived radionuclides from liquid radioactive wastes. Fractionization, concentration, purification, and bulk storage of these isotopes was done in B Plant.

The WESF converted the strontium and cesium form from B Plant to suitable stable solid forms (strontium fluoride and cesium chloride). The solidified material was then encapsulated and stored. Some of the cesium and strontium capsules had been shipped to facilities away from Hanford for beneficial usage. Problems with capsule leakage subsequently led to the recall of the offsite capsules which are slowly being returned to Hanford for storage in the WESF once again until such time as they can be appropriately and safely disposed or returned to beneficial usage.

B Plant was designed to chemically process spent nuclear fuels. Radiological containment and confinement features were incorporated in the various facilities and support systems to prevent exposure of plant personnel and the general public to excessive radiation. After plant production was terminated, the plant was modified to provide for separation and purification of selected fission products. Now, cleanup and stabilization work is underway in the B Plant structures and waste sites as the facility moves toward shutdown status. Support operations and maintenance continues as required to met the needs of these activities.

Appendix H

H.3 COMPLIANCE ASSESSMENT OF B PLANT/WESF FOR IMPLEMENTATION OF 10 CFR 830.120

The compliance matrix attached to the initial revision of this document provided the results of the initial baseline assessment of the B Plant and WESF facility compliance with the requirements of the WHC Quality Assurance Program (QAP) that described how the requirements of 10 CFR 830.120 were implemented at WHC-managed nuclear facilities by the original effective date of 10 CFR 830.120. This QAP is contained in Section 3.0 of the WHC QAP/Implementation Plan (IP) for 10 CFR 830.120 (WHC-SP-1131, Rev. 1), to which this document is appended. The initial baseline assessment matrix identified whether the requirements of the QAP were implemented, partially implemented, or not implemented at the time of that assessment. The initial baseline assessment was performed in accordance with the methodology discussed in Section 4.1 of the QAP/IP for 10 CFR 830.120 (WHC-SP-1131).

Certain of the requirements of the WHC QAP are performed by WHC organizations other than the nuclear facilities. For example, Criterion 10, Independent Assessment, is performed by a support organization, and not by the nuclear facilities themselves. The initial matrix identified which QAP requirements are performed by support organizations. There is a separate appendix with the results of the compliance assessments performed by these support organizations, for implementation of the QAP requirements for which they have lead responsibility.

Subsequent identification of noncompliances with the WHC QAP have been, and will continue to be, reported and have corrective actions implemented in accordance with the DOE Handbook, "Guidance for Identifying, Reporting, and Tracking Nuclear Safety Noncompliances," DOE-HDBK-1089-95.

H.4 RESULTS OF INITIAL BASELINE COMPLIANCE ASSESSMENT

The baseline 10 CFR 830.120 compliance assessment (Ref. WHC-SP-1131, Rev. 0, "Westinghouse Hanford Company Quality Assurance Program and Implementation Plan, dated March 1, 1995) identified that the requirements of the WHC QAP for 10 CFR 830.120 compliance were implemented at the B Plant/WESF, described above, with no exceptions at that time.

H.4.1 Actions Necessary to Achieve Compliance with 10 CFR 830.120

Action: None required.

Completion Date: None required.

Compensatory Action: None required.

Cost (incremental, if any): None required.

Plutonium Finishing Plant Transition Project

Compliance Assessment and Implementation Plan for

Title 10 CFR Part 830.120 *Quality Assurance Requirements*

Concurrence Signatures:

James R. Carey, Nuclear Safety Compliance Officer

1/5/96
Date

John N. Nansen, Manager, TP Quality Assurance

1/5/96
Date

I certify under penalty of law, as defined in 10 CFR 820.71, that the information provided herein is true and accurate to the best of my knowledge, information, and belief.

Approval Authority:

Eric C. Vogt, Director, PFP Transition Project

1/5/96
Date

Appendix I

PLUTONIUM FINISHING PLANT

I.1 Mission

The Plutonium Finishing Plant's (PFP) mission is to prepare the PFP to implement the Record of Decision (ROD) resulting from the PFP Cleanup Environmental Impact Statement, to provide interim storage for all special nuclear materials (SNM) currently at the PFP, and to deactivate all portions of the PFP not required for the storage of SNM or to implement the ROD. Facilities will be deactivated in a systematic manner which supports the storage of SNM.

I.2 Structures Subject to Requirements of 10 CFR 830.120, Quality Assurance

The PFP complex is comprised of a large number of buildings, many of which are relatively small structures and do not fit the definition of a nonreactor nuclear facility. The majority of the operations and activities of the PFP facility, however, are conducted in a few "major" buildings, as described in the following paragraphs.

Building 234-5-Z

The 234-5-Z building is of steel frame construction, approximately 500 ft long by 180 ft wide, with four floor levels. Internal features include reinforced concrete walls surrounding the processing area, several vault-type rooms with thick, reinforced concrete walls and ceilings, and two reinforced concrete stairwells.

The 234-5-Z building was originally constructed to house plutonium reduction operations, plutonium machining operations, and analytical laboratory services. Current building activities include process support work in the Engineering Laboratory and the Plutonium Process Support Laboratory, plutonium conversion (currently in maintenance and upgrade outage), and plutonium product, solution, scrap and solid waste handling operations.

Building 236-Z

The 236-Z building is a reinforced concrete, above ground, canyon-type structure, 79 ft by 71 ft by 47.5 ft high and surmounted by a 22.5-ft-high penthouse on the southwest corner. The building is adjacent to the southeast corner of Building 234-5-Z.

Building 236-Z houses the Plutonium Reclamation Facility (PRF) process equipment and services for Miscellaneous Treatment (MT) (scrap dissolution), Slag & Crucible dissolution, filtrate concentration, feed preparation, plutonium solvent extraction, product concentration, and Waste Tank processes. The PRF is capable of producing a high purity plutonium nitrate solution from a variety of feed sources by means of continuous countercurrent solvent extraction process equipment located in the canyon cell.

Appendix IBuilding 241-Z

Building 241-Z covers a below-grade liquid waste collection system containing five tanks in five separate covered cells. This Radioactive Liquid Waste Facility is used for intermediate storage and neutralization of PFP aqueous wastes and is in an active status. After neutralization, the wastes are pumped to the 244-TX Tank Farm facility. A steam jet is also provided for transfer of the pump heel. Ventilation is provided for the cells and the tanks; the building is ventilated through the cells.

Building 291-Z and 291-Z-1 Stack

Building 291-Z houses seven electric motor-driven fans that provide ventilation exhaust for Buildings 234-5-Z, 242-Z, and 236-Z. The exhaust air is discharged to the atmosphere through the 200-ft-tall 291-Z-1 exhaust stack. These fans plus two steam-driven exhaust turbines (for backup capability) and the inlet and exhaust plenums are the primary features of Building 291-Z. The 291-Z Building ventilation supply and exhaust system is used only to remove the heat generated by the motors and other 291-Z equipment. Evaporative coolers provide supply air cooling in summer; exhaust is provided by gravity damper exhaust outlets.

Building 2736-Z Complex

The 2736-Z Support Storage Complex consists of Buildings 2736-Z, 2736-ZA, 2736-ZB, and 2721-Z.

Building 2736-Z is designated the primary Plutonium Storage Facility (PSF). Building 2736-ZA provides exhaust ventilation for 2736-Z; Building 2736-ZB is utilized for shipping, receiving, repackaging, and Non-destructive Assay of Special Nuclear Materials; and Building 2721-Z provides emergency electrical power.

These four buildings house all functional operations required to make the 2736-Z Support Complex self-sufficient. All four buildings have been designed or modified to meet current seismic and extreme wind resistance design criteria.

I.3 Status of Structures Subject to Requirements of 10 CFR 830.120, Quality Assurance

The PFP operations have been in a shut down condition since 1989, awaiting restart of plutonium recovery and stabilization operations. This effort is on hold pending submittal and approval of an Environmental Impact Statement and restart readiness reviews. Meanwhile, interim storage stabilization activities with special nuclear materials are permitted. This includes stabilizing "reactive scrap" as well as other approved operations and maintenance that are necessary to support PFP in the current transition mission.

Appendix I

I.4 Compliance Assessment of the PFP for Implementation of 10 CFR 830.120, "Quality Assurance."

The compliance matrix attached to the initial revision of this document provided the results of an initial baseline assessment of compliance with the requirements of the WHC Quality Assurance Program (QAP) that describes how the requirements of 10 CFR 830.120 are implemented at WHC-managed nuclear facilities. This QAP is contained in Section 3.0 of the WHC QAP/Implementation Plan (IP) for 10 CFR 830.120 (WHC-SP-1131), to which this document is appended. The matrix identified whether the requirements of the QAP had been implemented, partially implemented, or not implemented. The assessment was performed in accordance with the methodology discussed in Section 4.1 of the QAP/IP for 10 CFR 830.120 (WHC-SP-1131).

Some of the requirements of the WHC QAP are performed by WHC organizations other than the PFP. For example, Criterion 10, Independent Assessment, is performed by a support organization, and not by the PFP. The initial baseline matrix identified which QAP requirements are performed by support organizations. There is a separate appendix with the results of the compliance assessments performed by these support organizations, for implementation of the QAP requirements for which they have lead responsibility.

The PFP assessment to determine the degree of compliance with the QA Rule 10 CFR 830.120 was accomplished by the following:

- Reviewing the results of the DOE Order Compliance Self Assessment conducted using DP-AP-202 methodology, by A. T. Kearney, Inc., and reported in "PFP 5700.6C Facility Assessment," dated March 15, 1994. Documents cited as evidence of compliance in the report were reviewed to ensure that they adequately reflected the requirements of the QA Rule. Field assessments cited as evidence in the report were accepted. Areas covered by the QA rule, wherein changes to documents referenced in the A. T. Kearney report have occurred since the report issue date, were assessed by the PFP Operations Assurance and PFP Quality Assurance organizations.
- Evaluating the 10 CFR 830.120 compliance matrix versus the QAP in WHC-SP-1131 and current PFP implementing procedures.

I.5 Results of the Initial Baseline Compliance Assessment

The baseline 10 CFR 830.120 compliance assessment (Ref. WHC-SP-1131, Rev. 0, "Westinghouse Hanford Company Quality Assurance Program and Implementation Plan, dated March 1, 1995) identified that the requirements of the WHC QAP for 10 CFR 830.120 compliance were implemented at the PFP complex structures subject to the requirements of the QA Rule, described above, with no exceptions at that time.

I.6 Actions Necessary to Achieve Compliance with 10 CFR 830.120, "Quality Assurance"

No implementation plan actions were identified by the assessment.

I.7 Exemptions or Non-Adherences Requested

None.

PUREX Plant Transition Project

Compliance Assessment and Implementation Plan for

Title 10 CFR Part 830.120 *Quality Assurance Requirements*

Concurrence Signatures:

G. J. LeBaron, Nuclear Safety Compliance Officer

4 Jan '96
Date

John N. Nansen, Manager, TP Quality Assurance

4 Jan '96
Date

I certify under penalty of law, as defined in 10 CFR 820.71, that the information provided herein is true and accurate to the best of my knowledge, information, and belief.

Approval Authority:

Douglas G. Hamrick, Director, PUREX/UO₂ Transition Project

1/5/96
Date

PLUTONIUM URANIUM EXTRACTION FACILITY (PUREX)

J.1 MISSION

The PUREX facility was constructed in the 1950's to reprocess irradiated fuel from the Hanford Reservation reactors for the recovery of uranium and plutonium. The PUREX facility is presently in the process of being deactivated for eventual turn over of the facility to Bechtel Hanford Incorporated (BHI). The purpose of the PUREX facility deactivation is to reduce the source terms and potential hazards of the facility prior to turnover to BHI.

J.2 FACILITY DESCRIPTION

The 202-A building, consists of three main structural components: (1) a thick-walled, heavily shielded concrete portion called the canyon which contains remote process cells and equipment; (2) a section comprised of three gallery levels parallel to and isolated from the canyon; and, (3) a steel transite annex to the north of the gallery section which houses offices. In addition to these structures, the laboratory, and a number of building service areas are encompassed in the PUREX facility.

The structures in the 202 A building are built to safely handle materials of varying degrees of radioactivity. The canyon structure with below-grade, isolated chemical processing cells was selected as being most appropriate for a bulk radiochemical separations operation. Structures built prior to 1968, which include the 202A canyon and most of the other structures handling highly radioactive materials, were designed for typical static vertical live and dead loads in accordance with uniform building codes, Hanford Facility Standards, and other applicable design documents in effect at the time of construction. Structures built after 1968 were designed for the most severe possible combination of dead, live, and operating loads appropriate for the given criteria. Seismic provision is made in the load calculations for a maximum credible earthquake producing a 0.25g horizontal ground acceleration and a 0.17g vertical acceleration.

The PUREX facility is comprised of several regulated areas. Regulated areas are those areas which are involved in the treatment, storage, and accumulation of radioactive regulated wastes. Regulated wastes are those wastes defined by state and federal regulations and include both radioactive and non-radioactive chemical wastes (including lead and silver).

Before the PUREX facility was placed in a standby condition, its mission was to reprocess irradiated fuels for the recovery of uranium and plutonium. The program to design and construct the PUREX Plant (202A building) and the associated support facilities was initiated in 1952 by the U.S. Atomic Energy Commission (now DOE). The PUREX Plant was one of the mainstays in the United States' nuclear fuel separations program, processing irradiated production reactor fuels for the recovery of uranium and weapons- or fuels-grade plutonium. From the first operation in 1956 to shutdown in September 1972 and from its restart in 1983 to being standby in 1990, refinements were made in the Plant to upgrade Safety and Process equipment, achieve process versatility, and adapt to changing feed material.

Appendix J

Hanford's PUREX Facility was designed and constructed to provide supplemental fuel reprocessing capability to separate plutonium and uranium products from irradiated fuel. The facility was operated by Westinghouse Hanford Company (WHC) under the direction of the U. S. Department of Energy (DOE). The PUREX process, developed at Oak Ridge National Laboratory (ORNL), Oak Ridge, Tennessee, was used as an improvement over the REDOX process.

The PUREX facility and process was originally designed to reprocess aluminum-clad uranium metal fuel to recover weapons-grade plutonium and natural enriched uranium, but later modified to reprocess zirconium alloy (Zircaloy) clad fuel from N-Reactor to recover plutonium and uranium. This process assisted programs, such as research, reactor development, safety, and the United States defense; plus, provide uranium for fuel in reactors generating electricity and plutonium.

Since its first process using spent fuel in 1956, a variety of fuels have been reprocessed. The fuel enrichments have varied from 0.72% to 2.1% ²³⁵U; fuel exposures have varied from 300 to 3,000 MWd/t U; and cooling times have varied from 120 days to 7 years. Aluminum-clad and zirconium-clad fuels have been processed at the PUREX facility. Types of fuels processed include uranium metal, uranium and plutonium oxides (Pu and Al alloys), and thorium targets. During operations, improvements were made to increase production rates, provide diverse capability to handle various fuels, provide higher quality products, decrease environmental releases, and improve the safety of the operation. Additional changes were made while the plant was on standby between September 1972 and November 1983.

J.3 COMPLIANCE ASSESSMENT OF PUREX FACILITY FOR IMPLEMENTATION OF 10 CFR 830.120

The compliance matrix attached to the initial revision of this document provided the results of an assessment of compliance with the requirements of the WHC Quality Assurance Program (QAP) that describes how the requirements of 10 CFR 830.120 are implemented at the PUREX Facility. This QAP is contained in Section 3.0 of the WHC QAP/Implementation Plan (IP) for 10 CFR 830.120 (WHC-SP-1131), to which this document is appended. The assessment was performed in accordance with the methodology discussed in Section 4.1 of the QAP/IP for 10 CFR 830.120 (WHC-SP-1131).

Certain of the requirements of the WHC QAP are performed by WHC organizations other than the nuclear facilities. For example, Criterion 10, Independent Assessment, is performed by a support organization, and not by the nuclear facilities themselves. The initial baseline matrix identified which QAP requirements are performed by support organizations. There is a separate appendix with the results of the compliance assessments performed by these support organizations, for implementation of the QAP requirements for which they have lead responsibility.

J.4 RESULTS OF INITIAL BASELINE COMPLIANCE ASSESSMENT

The baseline 10 CFR 830.120 compliance assessment (Ref. WHC-SP-1131, Rev. 0, "Westinghouse Hanford Company Quality Assurance Program and Implementation Plan, dated March 1, 1995) identified that the requirements of the WHC QAP for 10 CFR 830.120 compliance were implemented at the PUREX facility, described above, with no exceptions at that time.

UO₃ Plant Transition Project

Compliance Assessment and Implementation Plan for

Title 10 CFR Part 830.120 *Quality Assurance Requirements*

Concurrence Signatures:

G. J. LeBaron, Nuclear Safety Compliance Officer

4 JAN '96
Date

John N. Nansen, Manager, TP Quality Assurance

4 Jan '96
Date

I certify under penalty of law, as defined in 10 CFR 820.71, that the information provided herein is true and accurate to the best of my knowledge, information, and belief.

Approval Authority:

Douglas G. Hamrick, Director, PUREX/UO₃ Transition Project

1/5/96
Date

UO₃ FACILITY

K.1 MISSION

The UO₃ Plant completed the final stabilization/cleanout campaign in 1993. The facility was deactivated and transferred to Bechtel Hanford Incorporated with the exception of the 2714 storage building and T-hopper storage pad. The 2714 building and T-hopper storage pad area are operated by the Plutonium Uranium Extraction (PUREX) facility.

K.2 FACILITY DESCRIPTION

The 2714-U metal storage building is located on the north west side of the U Canyon facility in the 200 West Area. The 2714-U building contains the 55 gallon drums of depleted uranium trioxide which was used in the UO₃ Plant operations. A concrete pad is located adjacent to the 2714-U building which is used to store the T-hoppers of uranium trioxide which were filled during the stabilization campaign.

K.3 COMPLIANCE ASSESSMENT OF UO₃ FACILITY FOR IMPLEMENTATION OF 10 CFR 830.120

The compliance matrix attached to the initial revision of this document provided the results of an initial baseline assessment of compliance with the requirements of the WHC Quality Assurance Program (QAP) that describes how the requirements of 10 CFR 830.120 are implemented at WHC-managed nuclear facilities. This QAP is contained in Section 3.0 of the WHC QAP/Implementation Plan (IP) for 10 CFR 830.120 (WHC-SP-1131), to which this document is appended. The matrix identified whether the requirements of the QAP had been implemented, partially implemented, or not implemented. The assessment was performed in accordance with the methodology discussed in Section 4.1 of the QAP/IP for 10 CFR 830.120 (WHC-SP-1131).

Certain of the requirements of the WHC QAP are performed by WHC organizations other than the nuclear facilities. For example, Criterion 10, Independent Assessment, is performed by a support organization, and not by the nuclear facilities themselves. The initial baseline matrix identified which QAP requirements are performed by support organizations. There is a separate appendix with the results of the compliance assessments performed by these support organizations, for implementation of the QAP requirements for which they have lead responsibility.

K.4 RESULTS OF INITIAL BASELINE COMPLIANCE ASSESSMENT

The baseline 10 CFR 830.120 compliance assessment (Ref. WHC-SP-1131, Rev. 0, "Westinghouse Hanford Company Quality Assurance Program and Implementation Plan, dated March 1, 1995) identified that the requirements of the WHC QAP for 10 CFR 830.120 compliance were implemented at the UO₃ facility, described above, with no exceptions at that time.

222-S Laboratory Complex

**Compliance Assessment and
Implementation Plan for**

Title 10 CFR Part 830.120

Quality Assurance Requirements

Concurrence Signatures:

Stephen L. Brey, Nuclear Safety Compliance Officer

1/22/96

Date

Dana G. Farwick, Manager, A&E Quality Assurance

1/22/96

Date

I certify under penalty of law, as defined in 10 CFR 820.71, that the information provided herein is true and accurate to the best of my knowledge, information, and belief.

Approval Authority:

Gerald B. Griffin, Manager, 222-S Analytical Operations

1/22/96

Date

222-S LABORATORY

L.1 MISSION

The current mission of the 222-S Laboratory Complex is as follows:

The 222-S Laboratory Complex will provide quality analytical chemistry and process development services meeting all customer requirements. The 222-S Laboratory Complex will support Hanford processing plants with emphasis on waste management, chemical processing, and environmental monitoring programs at Tank Farms, B Plant, UO₂ Plant, 242-A Evaporator, Waste Encapsulation Storage Facility (WESF), PUREX, PFP and process development/upset activities.

Activities at the 222-S Laboratory will continue to expand as the result of relatively new programs arising from hazardous waste activities. Efforts include sample analyses as defined in the Environmental Protection Agency (EPA) SW-846 Manual and/or in the EPA Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Contract Laboratory Program. The 222-S Laboratory is also likely to support development of procedures for the Hanford Waste Vitrification Plant and continue to increase its environmental monitoring activities.

L.2 FACILITY DESCRIPTION

The 222-S Laboratory Complex was constructed in 1950 to 1951 to provide analytical and plant support for the S-Plant Reduction-Oxidation (REDOX) Complex. Through the years, the missions of the 222-S Laboratory have changed, and modifications have been made in response to new requirements and to increasingly restrictive operating and design criteria.

The building is provided with several support function shops for maintenance, instrument repair and service, electricians, millwrights, pipefitters, and glass work. Facilities for laboratory material storage, standard preparation, liquid and solid waste accumulation and storage, and filtration and exhaust are provided in areas adjacent to the 222-S Laboratory Building.

L.3 COMPLIANCE ASSESSMENT OF 222-S LABORATORY COMPLEX FOR IMPLEMENTATION OF 10 CFR 830.120

The compliance matrix attached to the initial revision of this document provided the results of an initial baseline assessment of compliance with the requirements of the WHC Quality Assurance Program (QAP) that describes how the requirements of 10 CFR 830.120 are implemented at the WHC-managed 222-S Laboratory Complex. This QAP is contained in Section 3.0 of the WHC QAP/Implementation Plan (IP) for 10 CFR 830.120 (WHC-SP-1131), to which this document is appended. The matrix identified whether the requirements of this QAP had been implemented, partially implemented, or not implemented. The assessment was performed in accordance with the methodology discussed in Section 4.1 of the QAP/IP for 10 CFR 830.120 (WHC-SP-1131).

Appendix L

Certain of the requirements of the WHC QAP are performed by WHC organizations other than the 222-S Laboratory Complex. For example, Criterion 10, Independent Assessment, is performed by a support organization, and not by the 222-S Laboratory Complex itself. The initial baseline matrix identified which QAP requirements are performed by support organizations. There is a separate appendix with the results of the compliance assessments performed by these support organizations, for implementation of the QAP requirements for which they have lead responsibility.

L.4 RESULTS OF INITIAL BASELINE COMPLIANCE ASSESSMENT

The baseline 10 CFR 830.120 compliance assessment (Ref. WHC-SP-1131, Rev. 0, "Westinghouse Hanford Company Quality Assurance Program and Implementation Plan, dated March 1, 1995) identified that the requirements of the WHC QAP for 10 CFR 830.120 compliance were implemented at the 222-S Laboratory, described above, with no exceptions at that time.

308 Building

**Compliance Assessment and
Implementation Plan for**

Title 10 CFR Part 830.120

Quality Assurance Requirements

Concurrence Signatures:

David E. Rasmussen
David E. Rasmussen, Nuclear Safety Compliance Officer

1/05/96
Date

John N. Nansen
John N. Nansen, Manager, TP Quality Assurance

1/5/96
Date

I certify under penalty of law, as defined in 10 CFR 820.71, that the information provided herein is true and accurate to the best of my knowledge, information, and belief.

Approval Authority:

Jim M. Steffen
Jim M. Steffen, Manager, Fuel Fab Facilities Transition Project

1/5/96
Date

308 BUILDING

M.1 MISSION

The 308 Building and Fuel Storage Annex (formerly NRF TRIGA Reactor) were operated to provide laboratories and fuel fabrication facilities for the development of reactor fuels containing plutonium.

The main 308 Building has been placed in lay up condition with the major support systems shut down including the gloveboxes and ventilation systems. There is minimal residual fissionable material inventory contained within gloveboxes and ventilation systems. No operations are planned except for minimal maintenance and surveillance activities.

The Fuel Storage Annex (FSA) previously contained a TRIGA reactor fuel inventory of almost 4 kilograms Uranium-235. This fuel has been relocated to the 400 Area. The current mission of the 308 Annex is to continue facility deactivation activities to prepare the facility for minimal maintenance and surveillance mode and for turnover to the Environmental Remediation Contractor.

M.2 FACILITY DESCRIPTION

The 308 Building is a two story structure constructed of reinforced concrete, concrete block, and steel siding. It was designed as a multipurpose nuclear facility for the development and fabrication of nuclear reactor fuel. The building, erected in 1960, has undergone several additions since the original construction to reach the current 71,000 square feet.

The facility will no longer be used for nuclear fuel development or fabrication and is currently in transition to shutdown for turnover for decommissioning. All nuclear materials used in the fuel fabrication process have been removed from the building with the exception of relatively small amounts of residual plutonium oxide held up in the gloveboxes and associated exhaust ducting. Decontamination has reduced the material retained in gloveboxes and enclosures to a total of less than 400 grams of plutonium. Approximately 20 grams of material remain in the 2100 linear feet of glovebox ventilation exhaust ducting. Contamination in the gloveboxes has been stabilized with a fixative coating. Due to the low residual material inventory, configuration, distribution, and glovebox stabilization, the main 308 Building process area is considered to not be subject to the 10 CFR 830.120 Quality Assurance Rule requirements.

The facility previously contained a neutron radiography facility TRIGA Reactor located in an annex of the Building. This 250 KW reactor was used to prepare neutron radiographs of FFTF Reactor fuel pins fabricated by offsite vendors and in the 308 building.

The shutdown TRIGA reactor fuel was previously stored within storage racks in the reactor water pool. The TRIGA fuel has been relocated to the 400 Area.

Appendix M

M.3 COMPLIANCE ASSESSMENT OF 308 BUILDING FOR IMPLEMENTATION OF 10 CFR 830.120

The compliance matrix attached to the initial revision of this document provided the results of an initial baseline assessment of compliance with the requirements of the WHC Quality Assurance Program (QAP) that describes how the requirements of 10 CFR 830.120 are implemented at WHC-managed nuclear facilities. This QAP is contained in Section 3.0 of the WHC QAP/Implementation Plan (IP) for 10 CFR 830.120 (WHC-SP-1131), to which this document is appended. The matrix identified whether the requirements of the QAP had been implemented, partially implemented, or not implemented. The assessment was performed in accordance with the methodology discussed in Section 4.1 of the QAP/IP for 10 CFR 830.120 (WHC-SP-1131).

Certain of the requirements of the WHC QAP are performed by WHC organizations other than the nuclear facilities. For example, Criterion 10, Independent Assessment, is performed by a support organization, and not by the nuclear facilities themselves. The initial baseline matrix identified which QAP requirements are performed by support organizations. There is a separate appendix with the results of the compliance assessments performed by these support organizations, for implementation of the QAP requirements for which they have lead responsibility.

M.4 RESULTS OF INITIAL BASELINE COMPLIANCE ASSESSMENT

The baseline 10 CFR 830.120 compliance assessment (Ref. WHC-SP-1131, Rev. 0, "Westinghouse Hanford Company Quality Assurance Program and Implementation Plan, dated March 1, 1995) identified that the requirements of the WHC QAP for 10 CFR 830.120 compliance were implemented at the 308 Building, described above, with no exceptions at that time.

SUPPORT AND OVERSIGHT

Compliance Assessment and Implementation Plan for

Title 10 CFR Part 830.120 *Quality Assurance Requirements*

I certify under penalty of law, as defined in 10 CFR 820.71, that the information provided herein is true and accurate to the best of my knowledge, information, and belief.

Approval Authorities:

J. M. Roberts, Director Quality Assurance

8/23/96
Date

R. G. Slocum, Director Training Services

8-20-96
Date

J. R. Knight, Manager Facility Evaluation

8-16-96
Date

SUPPORT AND OVERSIGHT

N.1 COMPLIANCE ASSESSMENT OF SUPPORT AND OVERSIGHT FOR IMPLEMENTATION OF 10 CFR 830.120

The WHC-managed nuclear facilities performed initial baseline assessments of their compliance with the requirements of the WHC Quality Assurance Program (QAP) that describes how the requirements of 10 CFR 830.120 are implemented at WHC-managed nuclear facilities. This QAP is contained in Section 3.0 of the WHC QAP/Implementation Plan (IP) for 10 CFR 830.120 (WHC-SP-1131), to which this document is appended.

However, certain of the requirements of the WHC QAP are implemented by support and oversight organizations rather than by the nuclear facilities themselves. For this reason, these elements were shown as "N/A" in the initial facility-specific compliance assessment matrixes contained in Appendixes A - M of WHC-SP-1131 Rev. 0. These elements are shown as "*" in this revision. The initial baseline matrixes, for these support and oversight organizations provided the results of the assessments performed for the following requirements:

CRITERION 1

Developing and maintaining the WHC quality program, including interpreting regulatory requirements and evaluating industry standards and practices, and defining and maintaining company policy standards and requirements for quality assurance.

CRITERION 7, Paragraphs 6 - 9

Evaluating prospective suppliers and monitoring suppliers to ensure that they continue to provide acceptable items and services.

CRITERION 10

Performing independent assessments of operations and activities at WHC-managed nuclear facilities.

N.2 RESULTS OF INITIAL BASELINE COMPLIANCE ASSESSMENT

The requirements of the WHC QAP for 10 CFR 830.120 were found to be implemented by the following WHC oversight and support organizations:

- Quality Assurance
- Facility Evaluation
- Training Services

Projects in the Design, Construction, and/or Preoperational Testing Phase which have the Potential to be Classified as a Nuclear Facility.

CONSTRUCTION

Project W-026, Waste Receiving and Processing Facility (WRAP) Module 1. The WRAP project will provide the facility required to perform processing necessary to prepare and certify retrieved and newly generated contact handled suspect transuranic solid drum and box waste for disposal.

Project W-379, Canister Storage Building. This project consists of activities necessary to retrieve and provide for near-term and interim dry storage for N Reactor Fuel. This material will be retrieved from the K Basin facility.

Project W-484, Hot Conditioning System. This project is design modification to the CSB incorporating Hot Conditioning Facility.

DESIGN

Project W-441, Cold Vacuum Drying Facility. This project will provide the facility and process storage equipment necessary to reduce the volatility of the N Reactor Spent Nuclear Fuel in preparation for dry storage in the canister storage building.