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Tank Waste Remediation System FSAR Hazard Identification/Facility Configuration Verification Report

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U.S. Department of Energy Contract DE-AC06-87RL10930

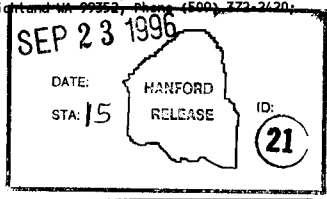
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Abstract: This document provides the results of the Tank Waste Remediation System Final Safety Analysis Report (TWRs FSAR) hazards identification/facility configuration activities undertaken from the period of March 7, 1996 to May 31, 1996. The purpose of this activity was to provide an independent overview of the TWRs facility specific hazards and configurations that were used in support of the TWRs FSAR hazards and accident analysis development. It was based on a review of existing published documentation and field inspections. The objective of the verification effort was to provide a "snap shot" in time of the existing TWRs facility hazards and configurations and will be used to support hazards and accident analysis activities.

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Karen M. Noland 9/23/96
Release Approval Date

Approved for Public Release

**Tank Waste Remediation System
FSAR Hazard Identification/Facility
Configuration Verification Report**

May 1996

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EXECUTIVE SUMMARY

This document provides the results of the Tank Waste Remediation System Final Safety Analysis Report (TWRS FSAR) hazard identification/facility configuration activities which were undertaken from the period of March 7 through May 31, 1996. The purpose of the hazards and configuration verification activity was to provide an independent overview of TWRS facility-specific hazards and configurations that were used in support of the TWRS FSAR hazards and accident analysis development. The scope of this effort addressed all current TWRS-owned facilities within the scope of the FSAR. It was based on a review of existing published documentation and field inspections. The objective of the verification effort was to provide a "snap shot" in time of the existing TWRS facilities hazards and configurations and will be used to support hazards and accident analysis activities.

This report contains an introduction section that provides for the background and associated purpose and scope of the activities; results of the verification activities that provides a summary of the data collection and review process; a discussion of the facility specific matrix data table development activities that included the identification of data needs and the generation of the actual data tables, training and pilot studies; and states the verification methodology that was employed during the document review and field verification activities.

The methodology employed for the verification activities included the development of facility specific matrix tables and associated activities which included:

- Development of an initial master checklist of TWRS facilities which bounds the project scope
- Division of the master checklist into twenty smaller checklists (one for each of the 18 tank farms, one for transfer lines, and one for miscellaneous facilities)
- Creation of six tables (checklists) of information to be compiled for all TWRS facilities (except transfer lines) through document review and field verification activities
- Creation of a seventh table specifically for transfer lines
- Preparation of instructions to assist in completion of the tables
- Training of personnel involved in the verification process
- Completion of a pilot study on AP Tank Farm.
- Incorporation of lessons learned from the AP Tank Farm Pilot
- Completion of checklists for the remainder of the TWRS facilities

In general, the verification activity results represent a "snap shot in time" of the TWRS facility configurations and potential hazards. Widely varying amounts and quality of data were available for the respective TWRS facilities. For example, double-shell tanks (DSTs) had generally up-to-date drawings, while single-shell tank (SST) drawings were, in general, not current with existing field conditions. Tank contents are well documented for the SSTs and DSTs. Less information was readily available for catch tanks, vault tanks, Inactive Miscellaneous Underground Storage Tanks (IMUSTs), and Double-Contained Receiver Tanks (DCRTs). The results obtained during the verification process will be utilized by the hazards/accident analysis group for use in the determination and evaluation of potential TWRS related hazards, facility configurations and accident scenarios associated with facility operations.

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CONTENTS

| | |
|--|-----|
| EXECUTIVE SUMMARY | iii |
| 1.0 INTRODUCTION | 1 |
| 1.1 BACKGROUND | 1 |
| 1.2 PURPOSE AND SCOPE | 1 |
| 1.3 OBJECTIVES | 2 |
| 1.4 REPORT ORGANIZATION | 2 |
| 2.0 VERIFICATION RESULTS | 3 |
| 2.1 TANK FARM DATA | 4 |
| 2.2 MISCELLANEOUS FACILITY DATA | 8 |
| 2.3 TRANSFER LINE DATA | 11 |
| 2.4 CORRECTIONS TO THE MASTER FACILITY CHECKLISTS | 12 |
| 2.5 ELECTRONIC VERSION OF RESULTS | 12 |
| 2.6 IDENTIFICATION/RESOLUTION OF OPEN ISSUES | 12 |
| 3.0 MATRIX TABLE DEVELOPMENT | 15 |
| 3.1 MASTER FACILITY CHECKLIST | 15 |
| 3.2 TABLE DEVELOPMENT | 16 |
| 3.2.1 Table 1 - Materials Inventory | 16 |
| 3.2.2 Table 2 - Hazards Identification | 17 |
| 3.2.3 Table 3 - Unique Phenomena | 17 |
| 3.2.4 Table 4 - Facility Configuration | 17 |
| 3.2.5 Table 5 - Radiation Source/Physical Protection | 18 |
| 3.2.6 Table 6 - OSR/OSD Safety Controls | 18 |
| 3.2.7 Table 7 - Transfer Pipelines | 18 |
| 3.3 TABLE INSTRUCTIONS | 18 |
| 3.4 TEAM DEVELOPMENT AND TRAINING | 18 |
| 3.5 AP PILOT STUDY | 19 |
| 4.0 VERIFICATION METHODOLOGY | 21 |
| 4.1 TABLE 1 - MATERIALS INVENTORY | 21 |
| 4.2 TABLE 2 - HAZARDS IDENTIFICATION | 22 |
| 4.3 TABLE 3 - UNIQUE PHENOMENA | 22 |
| 4.4 TABLE 4 - FACILITY CONFIGURATION | 23 |
| 4.5 TABLE 5 - RADIATION SOURCE/PHYSICAL PROTECTION | 23 |
| 4.6 TABLE 6 - OSD/OSR SAFETY CONTROLS | 23 |
| 4.7 TABLE 7 - TRANSFER PIPELINES | 24 |
| 4.8 DATA ASSIMILATION PROCESS | 24 |
| 4.9 REVIEW/SIGN OFF PROCESS | 24 |
| 5.0 SUMMARY AND CONCLUSIONS | 27 |
| 6.0 REFERENCES | 29 |

APPENDICES

- A MATRIX TABLE INSTRUCTION SHEETS**
- B 200 EAST AREA DOUBLE-SHELL TANK FARMS**
- C 200 WEST AREA DOUBLE-SHELL TANK FARMS**
- D 200 EAST AREA SINGLE-SHELL TANK FARMS**
- E 200 WEST AREA SINGLE-SHELL TANK FARMS**
- F MISCELLANEOUS FACILITIES**
- G TRANSFER LINES**

TABLES

| | | |
|-----|---|----|
| 2-1 | Summary of Results Organization Within the Appendices | 3 |
| 2-2 | Types of Facilities Found During Verification Activities Which Were Not on the Original Master Checklists | 5 |
| 2-3 | Facilities From Original Master Checklists Which Do Not Belong to TWRS | 6 |
| 2-4 | Miscellaneous Facilities (Not Tied to a Tank Farm) | 9 |
| 2-5 | Open Items | 14 |

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1.0 INTRODUCTION

1.1 BACKGROUND

Westinghouse Hanford Company (WHC) is currently producing a Tank Waste Remediation System Final Safety Analysis Report (TWRS FSAR) document that will serve as the safety basis for TWRS operating facilities within the FSAR scope. An integral part of this consolidation process is the analysis of the hazards and identification of facility configurations associated with the operations of TWRS facilities.

The TWRS FSAR efforts required the review of TWRS documentation and interaction with TWRS personnel. The information gathered from this activity resulted in the generation of data to be incorporated in the FSAR. Due to the need to produce much of the FSAR in parallel, integration and verification of data for the hazard analysis and configuration identification was consolidated into one activity. This activity included a field walkdown effort to provide information on conditions (at the time of the walkdown) to support an assessment of the comprehensiveness and accuracy of the FSAR. The data gathered through these activities were captured in a table format for eventual conversion into a database structure to assist in the FSAR hazards/accident analysis activities and to support future activities.

1.2 PURPOSE AND SCOPE

The purpose of the TWRS FSAR hazard and configuration verification activity was to provide an independent verification of TWRS facility specific hazards and facility configurations which was used in support of the development of the TWRS FSAR. In some cases, multiple sources of information exist regarding hazards or configurations of TWRS facilities. The purpose of this document was to identify the appropriate analysis or information to be used in the FSAR. This was accomplished by document review, interviews, and field walkdown activities to identify and document TWRS facility specific hazards and configurations as they currently exist. This document reports the results of the verification process which occurred during the period between March 18, 1996 and May 31, 1996.

The scope of the effort included a review of all known TWRS owned facilities which will be covered in the FSAR document utilizing the existing published documentation and visual inspections. Hazards within TWRS, the configuration of TWRS systems and structures, and the existing operational controls were investigated. Field walkdowns were performed at the facility level (i.e., tank farm, building, or miscellaneous facility) and relied primarily on available published information and visual inspections of the accessible portions of the operating systems. No attempt was made during the field verification to review inaccessible portions of a given facility (e.g., contents within a valve pit or diversion box) as we employed a non-intrusive method of verification in accordance with existing WHC As Low As Reasonably Achievable (ALARA) principles.

The scope of the verification activities was to confirm the identification of:

- 1) Radioactive or hazardous materials in TWRS which potentially could pose a hazard to the public, onsite workers, TWRS workers, and/or the environment,

- 2) Potential energy sources which could contribute to the uncontrolled release of material,
- 3) Unique phenomena associated with TWRS storage tanks which could contribute to the uncontrolled release of material,
- 4) TWRS facility systems, structures, and components (SSCs) related to the storage and transfer of waste,
- 5) Radiation protection features related to TWRS,
- 6) Operating Safety Requirements (OSRs) and Operating Specification Documents (OSDs) related to TWRS monitoring and control SSCs, and
- 7) Transfer lines related to the movement of liquid waste between facilities.

1.3 OBJECTIVES

The objective of the verification effort was to provide a "snap shot" in time of the existing TWRS facilities hazards and configurations. This facility and function specific information will be used to support the hazards and accident analysis, identification of radiation controls, and to confirm existing facility configurations. The data provided within the facility specific matrix tables support the hazard and accident analysis and the identification of necessary safety controls. The information contained in the report appendices may or may not be sufficient for other purposes.

1.4 REPORT ORGANIZATION

Section 1.0 outlines the background, purpose and scope, and organization of the report; Section 2.0 summarizes the results of the verification process; Section 3.0 explains the development of the matrix tables, including further definition of the project scope and objectives; Section 4.0 provides an overview of the verification process methodology; Section 5.0 provides a summary and conclusion of the verification activities; and Section 6.0 lists the references which were utilized. The appendices contain the instructions for completing the matrix tables and the actual matrix tables for each facility within the scope of the TWRS FSAR effort.

2.0 VERIFICATION RESULTS

The results of the verification activities are summarized in this section. The detailed data collected are provided in matrix tables and drawings located in Appendices B through G. Appendix A contains the instructions provided to assist in completion of the tables. The appendices have been organized by 200 East double-shell tanks (DSTs), 200 West DSTs, 200 East single-shell tanks (SSTs), 200 West SSTs, miscellaneous facilities, and transfer lines. Table 2-1 summarizes the organization of the Appendices.

Table 2-1. Summary of Results Organization Within the Appendices

| Appendix | TWRS Facilities Included | Comments |
|----------|--------------------------|--|
| A | All* | *Instructions for completing matrix tables are provided in Appendix A. |
| B | 200 East Area DSTs | AN, AP, AW, AY, AZ Farms |
| C | 200 West Area DSTs | SY Farm |
| D | 200 East Area SSTs | A, AX, B, BX, BY, C Farm |
| E | 200 West Area SSTs | S, SX, T, TX, TY, U Farm |
| F | Miscellaneous Facilities | See Table 2-4 for a listing of miscellaneous facilities. |
| G | Transfer Lines | Descriptive data provided for active transfer lines located between farms or facilities. Transfer lines located within the boundaries of a tank farm and inactive lines have been listed for accountability, with limited descriptive data provided. |

In general, the results represent a "snap shot in time" of the TWRS facility configurations and potential hazards. Transient conditions are noted in the "Comment" columns wherever possible. Widely varying amounts and quality of data were available for the respective TWRS facilities. For example, DSTs had generally up-to-date, useful drawings, while SST drawings were, in general, not current with existing field conditions. Some information was available on the SST and DST tank contents (a few samples of DST supernate have been taken); less information was readily available for catch tanks, vault tanks, Inactive Miscellaneous Underground Storage Tanks (IMUSTs), and Double-Contained Receiver Tanks (DCRTs).

Matrix table results are organized by tank farm or miscellaneous facility. All "facilities" have been grouped by tank farm to the extent possible (Note: A "facility" could be a tank, building, crib, diversion box, etc.). Any facility with a tank farm letter in its identification (ID) number has been tied to that tank farm. For example, 241-BX-302B, which is an IMUST near B Plant, has been tied to BX Farm and is included with the BX Farm tables of information. This results in the majority of the TWRS owned facilities being tied to one of the tank farms and included with the information on that tank farm, even if the facility is physically located outside the boundaries of that farm. The remaining facilities, whose ID numbers did not include a tank farm designator, were deemed "Miscellaneous

Facilities" and were reviewed and documented separately (see Appendix F). Transfer lines were also reviewed and documented separately (see Appendix G).

The matrix tables of data for each tank farm contained in Appendices B through E are briefly summarized in Section 2.1. The miscellaneous facility tables of data, found in Appendix F, are discussed in Section 2.2. Appendix G, which contains data on transfer lines (Table 7), is summarized in Section 2.3.

Note: "NA" on the tables indicates the block was not applicable or not required for the stated purpose of the project.

2.1 TANK FARM DATA

For each tank farm, the Appendices contain a matrix table sign-off sheet which provides sign off of the data generator and data reviewer, a tank farm drawing which denotes the facility configuration observed during the field walkdown, a master checklist of "facilities" tied to the specific tank farm, and six matrix tables of information (Material Inventory, Hazard Identification, Unique Phenomena, Facility Configuration, Radiation Source/Physical Protection, and OSR/OSD Safety Controls). The results are summarized for each table below:

Sign-Off Sheet The signatures on the sign-off sheet signify that the information provided on this tank farm is based on the available reference documents, was field verified where possible, and is believed to be true, accurate, and complete at the time of review. Signatures of the team lead responsible for collating the information and the WHC cognizant engineer and design authority who reviewed the information are included.

Tank Farm Drawing Drawings were provided for each tank farm walkdown. The walkdowns were used to update and provide additional information (related to facility configuration and potential hazards) for the drawings. The drawings included in the Appendices reflect these field walkdown modifications. The locations and sizes of objects added to the drawings are approximations only.

Tank Farm Master Facility Checklist Each walkdown team was provided with a master checklist of facilities for each tank farm (see Sections 3.0 and 4.0 for more information on the overall project methodology). The team lead was responsible for ensuring that all facilities were considered when filling out the matrix tables. An "x" in the box indicates that that facility was included on that table.

All facilities which could not be accounted for are noted in the tank farm master checklists "Comment" columns and are discussed in Section 2.6. Additional facilities found during verification activities which were not on the original tank farm master checklists were added at the end of the checklists and are summarized in Table 2-2. Facilities from the master checklists which do not belong to TWRS are noted in the "Comments" column of the master checklists and are summarized in Table 2-3.

**Table 2-2. Types of Facilities Found During Verification Activities
 Which Were Not on the Original Master Checklists**

| Facility Description | Comments |
|--|--|
| Valve Pits | Found in A Farm, AX Farm, BY Farm, C Farm, and SX Farm |
| Flush Pits | Found in SX Farm and U Farm |
| Service Pits | Found in A Farm, BX Farm, C Farm, and U Farm |
| Instrument Buildings | Found in BX Farm, BY Farm, SX Farm, T Farm, and U Farm |
| Condenser Building | Found in SX Farm |
| Compressor Buildings | Found in C Farm and SX Farm |
| Sampling Buildings | Found in SY Farm |
| Other Misc. Buildings (Water Building, Ventilation Building, Leak Detection Lateral Buildings) | Found in A Farm |
| Cribs | Found in A Farm, AZ Farm, and T Farm |
| Caustic Addition Building and Skid | Found in AN Farm |
| Surface Condenser Facility | Found in AX Farm |
| Cross Connection Facility | Found in AX Farm |
| IMUST | Found in TX Farm |
| Diversion Boxes | Found in BX/BY Farm, T Farm, and TX Farm |
| Clean Out Boxes | Found in S Farm and U Farm |

Table 2-3. Facilities From Original Master Checklists Which Do Not Belong to TWRS

| Facility | Current Owner |
|--|--|
| 211U non-rad storage tank (Chemical Storage Tank) | BHI |
| 211UA non-rad storage tank (Cold Chemical Make-up Tank) | BHI |
| 276U non-rad storage tank (Chemical Storage Tank) | BHI |
| 211T non-rad storage tank (Chemical Storage Tank) | T Plant |
| 2706T201 non-rad storage tank (Low Level Waste Decon Tank) | T Plant |
| 2706T202 non-rad storage tank (Low Level Waste Decon Tank) | T Plant |
| 211S non-rad storage tank (Chemical Storage Tank) | BHI |
| 241-C-801 Process Storage Building | Bechtel, monitored by TWRS |
| 211B non-rad storage tank (Chemical Storage Tank) | B Plant |
| COB-AW-01, -02, -03, -04, -05, -06, -07, -08, -11, -12, COB-A-30 | 242-A Evaporator |
| 211A non-rad storage tank (Chemical Storage Tank) | Purex |
| 270A non-rad storage tank (Underground Condensate Neutralization Tank) | Purex |
| 213-W-TK-1 IMUST | Not owned by TWRS (WHC-SD-WM-PD-046, Rev. 0), but included with 213-W Compressor tables under Miscellaneous Facilities because it was noted during the 213-W walkdown. |
| 216-B-3-3* | BHI |
| 222EC non-rad storage tank (Emergency Generator) | 222-S Lab |
| 284WA non-rad storage tank (Salt Brine Storage Tank) | 200-W Power House (Salt Brine Storage Tank) |
| TR31-ST-T1 non-rad storage tank (Leachate Storage Tank) | Solid Waste Disposal |
| TR34-ST-T1 non-rad storage tank (Leachate Storage Tank) | Solid Waste Disposal |
| 2711E66 non-rad storage tank (Waste Oil Tank) | 200-E Garage |
| 2711E66A non-rad storage tank (Waste Oil Tank) | 200-E Garage |
| 2721E66 non-rad storage tank (Diesel Storage Tank) | 200-E Security Building |
| Gasoline / Fuel Oil Storage Facility | Hanford Site (none specifically owned by TWRS). |

* This was called 216-3-3 on the original master list. A.K. McDowell of WHC, Tank Farm Projects Group, provided this ID number.

Table 1. Material Inventory

The radioactive wastes stored in the DST and SSTs were the largest inventories of material found. No activity level measurements were found for pits or boxes. A minimal amount of analytical data on the curie content of failed High-Efficiency Particulate Air (HEPA) filters for use in accident analyses were found. In general, underground diesel fuel storage tanks, flammable storage cabinets, and contaminated equipment storage areas were identified in the field. Approximately 80% of the information on these tables was found in documents and could not be field verified, with the remainder being observed in the field.

Table 2. Hazards Identification

Numerous hazards or potential hazards were identified including flammable materials (diesel fuel, hydrogen, sodium), corrosives (acids, caustics), electrical (wiring, motors, heaters), pressure/volume (gas bottles, surge tanks) and mass/gravity/height (stairs, cranes, ladders, pits). The categories of hazards were provided in a checklist from the FSAR hazard analysts.

Table 3. Unique Phenomena

Unique phenomena were only considered for single-shell, double-shell, and double-contained receiver tanks, per the FSAR Hazard/Accident analysts. Minimal documented data were available for the DCRTs. Minimal information was available on the potential for siphoning; however, a separate siphoning analysis is being performed by the FSAR hazards analysis group in parallel with this project. Hazards identified included high heat, flammable gas, ferrocyanide, corrosivity, and organics.

Table 4. Facility Configuration

The configuration of all "facilities" found in each tank farm, including tanks, pits, boxes, buildings, instrumentation, and ventilation systems were identified. Not all tanks within a given farm have the same equipment (different pits, different ventilation methods, and different types of instrumentation exist on tanks within a given farm).

Instrumentation identified included waste level measurement, high level probes, leak detection instrumentation, temperature probes, and Continuous Air Monitors (CAMs). Some instrumentation was believed to be operable on certain tanks and inoperable on other tanks, while other instrumentation exists which does not work on any of the tanks within a given farm.

Monitoring systems were also found which do not work as originally designed, but the data were still being obtained (e.g., manual data collection was used where automatic data collection was designed). Instrumentation on diversion boxes, tanks, and pits which are isolated was generally not retrieved from old drawings.

Operability for some components was not easily obtainable. Operability of these components may be marked as "assumed operable" or "unknown" depending on the information available.

For double shell tanks and some DCRTs, condition assessment surveys and Project 314 reports were available and equipment condition scores (on a 1-10 scale) are reported from those

sources. No sources of equipment condition scores were found for single shell tanks. No attempts to score the condition of equipment were made, so "NA" is reported wherever documented equipment scores were unavailable. Important information which did not conform to the columns of Table 4 is included in the "Comments" column. Differences among the tanks within a given farm have been noted by exception in the comment field.

The organization of Table 4 may not be readily apparent due to limited planning time. The organization of this table was designed to be general in nature to accommodate either DST or SST facilities. Tank specific information is generally at the beginning of the tables; valve pit, diversion box, DCRT, and building information is generally toward the end of the tables.

Table 5. Radiation Source / Physical Protection

No surface readings of greater than 100 mR/hr were found on survey maps located at the respective facilities. All pits and tanks which could potentially have held radioactive materials were assumed to be greater than 100 mR/hr, in the absence of any underground dose rate information. Cover blocks and penetrations were generally in good condition. The numbers and sizes of the penetrations and the cover block thicknesses are noted on the tables.

Table 6. OSD/OSR Safety Controls

Several instances of inoperable equipment tied to OSR/OSD requirements were identified. The list of procedures associated with a specific OSR limit (provided in WHC-SD-WM-RPT-220) or OSD limit was tied to all tank farms; however, some of the procedures listed do not apply to all of the tank farms. Where comments have been received, corrections have been made. Numerous administratively controlled requirements exist which are not controlled or monitored by the SSCs identified on Tables 4 and 6. While these OSD/OSR requirements are of interest to cognizant engineers, design authorities, and others, they are not presently included in the scope of Table 6.

2.2 MISCELLANEOUS FACILITY DATA

Appendix F contains data on the miscellaneous facilities owned by TWRS. Miscellaneous facilities discussed in Appendix F are listed in Table 2-4.

The data collected on miscellaneous facilities are similar to the data collected for each tank farm, described in Section 2.1. For each of the miscellaneous facilities identified in Table 2-4, the appendix contains a sign-off sheet and five tables of information. Table 3 on Unique Phenomena was not required for the miscellaneous facilities, per TWRS FSAR hazards/accident analysts. All the IMUSTs not associated with individual tank farms are grouped together and all the cribs, ponds, and ditches not associated with individual tank farms are grouped together for simplicity.

The information provided in Appendix F is summarized below.

Miscellaneous Facility Master Checklist. The first table in Appendix F is the original miscellaneous facility master checklist. This was the checklist of facilities which had not been tied to the tank farms during the planning stage. Note that many miscellaneous inactive

Table 2-4. Miscellaneous Facilities (Not Tied to a Tank Farm)

| Facility Number | Description |
|------------------------|-------------------------|
| 204-AR | Unloading Facility |
| 209-E | 90 Day Storage Pad |
| 213-W | Compactor Building |
| 241-AR-151 | Diversion Box |
| 241-ER-151 | Diversion Box |
| 241-ER-152 | Diversion Box |
| 241-ER-153 | Diversion Box |
| 241-ER-311 | Catch Tank |
| 241-EW-151 | Cross Site Vent Station |
| 244-AR | AR Vault |
| 2727-W | Sodium Storage Building |
| 2727-WA | Storage Building |
| 216-W-LC | Crib |
| 216-Z-20 | Crib |
| 216-Z-21 | Pond |
| 243-S-TK-1 | IMUST |
| 241-ER-311A | IMUST |
| 231-W-151-001 | IMUST |
| 231-W-151-002 | IMUST |
| 241-Z-8 | IMUST |

storage facilities (MISFs) were located during tank farm walkdowns and are covered with the individual tank farm data. An attempt was made to capture all MISFs, but no checklist was available to ensure that all MISFs were captured.

The team lead was responsible for ensuring that all facilities on the checklist were considered when filling out Tables 1 through 6. An "x" in the box indicates that that facility was included on that table. Some facilities do not belong to TWRS. These facilities are noted in the miscellaneous facility master checklist "Comment" column and were included in Table 2-3. Facilities which could not be accounted for (remain as open issues) are also noted in the miscellaneous facility master checklist "Comment" column and discussed in Section 2.6.

Sign-Off Sheet The signatures on this sheet signify that the information provided for the miscellaneous facility is believed to be true, accurate, and complete. Signatures of the team lead and the reviewing Westinghouse cognizant engineer and design authority are included, where applicable. Not all miscellaneous facilities had assigned cognizant engineers ("NA" is noted on the respective miscellaneous facility sign-off sheets).

Table 1. Material Inventory

Tank content data for the IMUSTs were limited and dated (WHC-EP-0861, WHC-SD-EN-ES-040, and the Environmental Sites Database were the sources of information recommended by WHC). Mixed and hazardous waste material inventories were found at the 209-E 90 Day Storage Pad. Historical information on material discharged to cribs, ponds, and ditches was taken from the Environmental Sites Database. However, additional data for the cribs, ponds, and ditches (including some sample results) may be available in the Liquid Effluent Monitoring Information System (LEMIS). The LEMIS database was not investigated during this project. Other materials, such as underground diesel fuel storage tanks, chemical cleaners, and other non-radioactive chemicals were found at various miscellaneous facilities during walkdowns.

Table 2. Hazards Identification

Hazards varied greatly from facility to facility. Hazards included corrosives, electrical, flammable materials, and kinetic energy sources. No thermal radiation or chemical reaction hazards were identified at miscellaneous facilities. The categories of hazards were provided in a checklist from the FSAR hazard analysts.

Table 3. Unique Phenomena

Table 3 was not required for miscellaneous facilities, per TWRS FSAR Hazards and Accident Analysis representatives.

Table 4. Facility Configuration

The configuration of the miscellaneous facility, including any tanks, pits, boxes, buildings, instrumentation, and/or ventilation systems was identified on Table 4. Instrumentation included waste level measurement, high level probes, leak detection instrumentation, temperature probes, and CAMs. Operability for some components was not easily obtainable. Operability of these components may be marked as "assumed operable" or "unknown" depending on the

information available. No sources of equipment condition scores were found for the miscellaneous facilities.

None of the IMUSTs, cribs, ponds, or ditches (discussed in this section) have any operable instrumentation due to the fact that they are all inactive. (Several IMUSTs which were tied to individual tank farms in this report do have operable monitoring instrumentation). The 244-AR vault is currently in standby mode and has ventilation systems, instrumentation, and other equipment which has not been used for years and is currently assumed to be inoperable. Detailed information on the configuration of all miscellaneous facilities can be found on Table 4 for each miscellaneous facility in Appendix F.

Table 5. Radiation Source / Physical Protection

No surface readings of greater than 100 mR/hr were found on survey maps located at the respective facilities. Any pit or tank which could potentially hold radioactive materials was assumed to be greater than 100 mR/hr. Diversion box cover blocks and penetrations were generally in good condition. The numbers and sizes of the penetrations are noted on the tables from walkdowns; cover block thickness taken from drawings are also noted. For the AR vault, 244-AR, and the unloading facility, 204-AR, shielding wall thickness were also obtained from referenced drawings.

Table 6. OSD/OSR Safety Controls

Numerous OSDs (related to the ventilation systems) exist for the 244-AR vault which are not currently being met since the facility is in standby mode. No OSR/OSD requirements were found for the SSCs associated with the IMUSTs, cribs, ponds, or ditches, 2727-W, 2727-WA, 209-E, 213-W, or the diversion boxes covered in this section. Numerous administratively controlled requirements exist which are not controlled or monitored by the SSCs identified on Tables 4 and 6. While these OSD/OSR requirements are of interest to cognizant engineers, design authorities, and others, they are not currently included in the scope of Table 6.

2.3 TRANSFER LINE DATA

Active transfer lines (except those contained entirely within the bounds of a single tank farm) are described on Table 7. The following descriptive data are provided for each of the active interfarm transfer lines: line ID, diameter, line type (concrete encased, pipe-in-pipe, etc.), material of construction, capacity, design pressure, connection facilities, transfer frequency, hydrotesting frequency, leak detection methods, presence of heat tracing, presence of backflow/siphoning prevention, ventilation systems, presence of cathodic protection, and associated diversion boxes.

Extensive descriptive data are not provided for transfer lines within the boundaries of a single tank farm, drain lines to catch tanks, cribs, ponds, and ditches, or steam lines, as these lines are not key to any of the TWRS FSAR accident scenarios. These lines are identified in Table 7 for FSAR Chapter 2 accountability/inventory purposes only.

The only OSR/OSD requirements associated with transfer lines are WHC-SD-WM-SAR-016, 11.7 and OSD-T-151-00007, 7.2.10 which deal with verifying operability of leak detectors on transfer lines prior to transfers.

2.4 CORRECTIONS TO THE MASTER FACILITY CHECKLISTS

One of the significant results of the verification activity was that the original checklists of facilities owned by TWRS were incomplete and occasionally incorrect. Through document reviews, interviews, and tank farm field walkdowns, additional facilities were found which are believed to belong to TWRS. Even if these facilities were currently inactive, they were added to the end of the tank farm specific master checklists (provided in the Appendices) and were summarized in Table 2-2.

Document review and interviews also indicated that TWRS is not responsible for some of the facilities on the original checklists. Specific items have been noted on the respective farm matrix tables. These facilities were summarized in Table 2-3.

2.5 ELECTRONIC VERSION OF RESULTS

All data have been provided in an electronic format in addition to the matrix table hard copies. Tables 1 through 5 are provided in Word Perfect 5.1/5.2 format. Table 6 is provided in an Access 2.0 database. A Crystal Report Writer 4.0 file is included to produce printouts of the Access database. Table 7 is provided in Excel 5.0. All diskettes contents are clearly labeled.

2.6 IDENTIFICATION/RESOLUTION OF OPEN ISSUES

Several open issues remain after the document and field verification activities described above. These items are discussed below and summarized in Table 2-5:

- The small set of systems or components which will form the safety basis for TWRS will require a more thorough validation of operability and complete documentation of the procedures associated with their use, calibration, maintenance, etc. This is beyond the scope of this effort and will be managed separately by WHC.
- Table 6 lists procedures which may not apply to the specific tank farm. The procedures listed were referenced in WHC-SD-WM-RPT-220 and the OSD Database (Kahlia 1996). These documents were the basis of reference for procedures which are associated with a given type of facility (e.g., DSTs, SSTs, DCRTs), not a specific tank farm.
- Table 6 also does not provide the complete accountability of all the OSDs and OSRs, which design authorities and cognizant engineers indicated during review. In the current Table 6 data, OSR/OSDs have been linked to a given SSC identified for each facility. If the OSR/OSD could not be linked to an SSC and was determined to be administratively controlled, it was considered not currently within the scope of Table 6 and was not identified.
- The HEPA filter radiation exposure rate limit is specified as 1 R/hr in WHC-CM-7-5, Rev. 1, but SD-WM-SAR-016, Rev. 1 states that administrative procedures exist to maintain HEPA filters below 200 mR/hr. It is unclear which limit applies to which HEPA filters. Clarification by WHC is required to resolve this issue.

- No analytical sample data were located for cribs, ponds, and ditches. Toward the end of the project, the LEMIS (Liquid Effluent Monitoring Information System) database was recommended as a potential source of sample data for the cribs, ponds, and ditches, but was not reviewed due to schedule constraints. This database should be reviewed for potentially useful material inventory data on cribs, ponds, and ditches.
- A number of facilities initially identified by FSAR activities were not found during the walkdowns and/or could not be found in documents or drawings.

Table 2-5. Open Items

| Open Issue / Facility | Status | Resolution |
|--|--|---|
| HEPA Filter exposure rate limit | Two references located (WHC-CM-7-5, Rev.1 and SD-WM-SAR-016, Rev. 1); unsure of their applicability | WHC policy decision / clarification required. |
| Crib, pond, and ditch material inventory | Environmental Sites Database information provided, but LEMIS may have more useful information | LEMIS should be reviewed for potentially useful sample data on cribs, ponds, and ditches. |
| Table 6 objectives | Table 6 provides applicable OSR/OSD monitored/controlled by SSCs on Table 4 only. Administrative controls are not included in Table 4 scope. | Revision of Table 6 to reflect all OSR/OSDs and implementing procedures not currently in project scope. Additional WHC input and database restructuring required to support this activity if deemed necessary by WHC. |
| Clean out boxes COB-AP-07D, COB-AP-07E, COB-AP-07F | Not found in AP Farm or in drawings. Believed to have been part of Grout Program, but never built. | Verification by WHC required. |
| Airlift circulator 601 caissons in AY Farm | Not found on drawings or in the field. Believed to have been planned, but never installed. | Verification by WHC required. |
| 216-B-63 Ditch | Documentation found on this ditch, but it could not be found in the field. | Verify existence in field. |
| 215A non-rad storage tank | No information found in documentation or drawings; not found in the field. | Verification by WHC required. |
| 240-C-154 diversion box | Not found during walkdowns. Routing board shows a 241-C-154 diversion box which is isolated. This diversion box is believed to be buried next to Hot Sem Works, 201-C, across the street and west of C Farm (WHC-SD-EN-ES-019) | Issue closed. Diversion box is buried. |
| 241S303 non rad storage tank | Drawings exist for this tank, but it is believed to have never been built. | Verification by WHC required. |
| 240-T-154 diversion box | No drawings found; not found during field walkdowns. | Verification by WHC required. |
| 241HN701-66 non-rad storage tank | Diesel storage tank for new tank farm. Believed never built. | Verification by WHC required. |
| 242A211 non-rad storage tank | No information; not found in field. May have been planned for 242-A, but not built. | Verification by WHC required. |
| 241-AZ-562 Valve pit | No information found in documentation or drawings; not found in the field. | Verification by WHC required. |
| 241-A-302A Catch tank | Documentation found, but not seen during walkdown (located near PUREX) | Field verification required. |
| 241-A-151 Diversion box | Documentation found, but not seen during walkdown (behind Purex) | Obtain access to rear, fenced area behind Purex and field verify diversion box |

3.0 MATRIX TABLE DEVELOPMENT

During the development process for the facility specific matrix tables, several activities occurred which defined the scope of the project. These activities included:

- Development of an initial master checklist of TWRS facilities which bounds the project scope
- Division of the master checklist into twenty smaller checklists (one for each tank farm, one for transfer lines, and one for miscellaneous facilities)
- Creation of six tables (checklists) of information to be compiled for all TWRS facilities (except transfer lines) through document review and field verification activities
- Creation of a seventh table specifically for transfer lines
- Preparation of instructions to assist in completion of the tables
- Training of personnel involved in the verification process
- Completion of a pilot study on AP Tank Farm.
- Incorporation of lessons learned from the AP Tank Farm Pilot

These activities which occurred during the planning phase are discussed below.

3.1 MASTER FACILITY CHECKLIST

A master checklist of facilities owned by TWRS was created during the planning phase. This checklist was intended to bound the facilities to be covered under the verification project. Draft versions of the FSAR Chapter 2, "Facilities Description and Operation", and the FSAR Chapter 3, "Hazards Analysis Topography" were used to create the initial master checklist of facilities. Transfer lines found in WHC-SD-W314-ES-021, Rev. 0 were added to the transfer lines identified in the draft of FSAR Chapter 2.

The master checklist was then subdivided into smaller master checklists for verification support as follows:

- one for each of the 18 tank farms
- one for transfer lines
- one for the remaining miscellaneous facilities, such as 204-AR, 209-E, etc.

During the planning phase, any facility with an ID number which included a tank farm designator was added to the tank farm master checklist for accountability purposes. For example, facilities with a "B" in the ID number was assigned to the B Farm master checklist. This resulted in

some of the IMUSTs, cribs, ponds, and ditches being assigned to tank farms because of their ID number, even though they are not physically located within the tank farm. For example, the expansion ponds (216-B-3), were included with B Farm. IMUSTs, cribs, ponds, and ditches which could not be tied to a tank farm through their ID number were included on the miscellaneous facilities checklist.

During the course of the verification project, additional facilities were added to the original checklists, generally after field walkdowns. In some instances, facilities on the original checklists were identified as no longer owned by TWRS. These findings are noted in the "Comment" column of the individual master checklists (as found in the Appendices) and have been summarized in Section 2.4.

3.2 TABLE DEVELOPMENT

To define the project scope in terms of the data required, authors contributing to the FSAR were interviewed to determine which of their information needs could be supported by the verification project. The Facilities Description and Operation, Hazards and Accident Analysis, and Radiation Protection Program chapters of the FSAR were ultimately determined to be the primary drivers for the verification project.

Six tables were initially created. It was requested that the tables be robust enough to be used for all tank farms. Generally all of the six tables were filled out for each tank farm or miscellaneous facility. A seventh table was added to collect data related to TWRS transfer lines which was filled out once for all pertinent transfer lines.

The scope of each of the seven tables is discussed below.

3.2.1 Table 1 - Materials Inventory

A definition of the materials at risk for release was needed for accident analyses. Twelve categories of materials at risk were identified by the accident analysis representatives:

- Tank contents
- Tank headspace
- Rail or truck tanker contents
- Contamination on vehicles
- Contamination on equipment or tools
- Ventilation filter contents
- Contamination in ventilation systems
- Contents of pipeline and/or source tank during transfers (This category was skipped on all tables. Source tank contents are covered above, under tank contents, and pipelines are covered separately under Table 7.
- Contents of sump or encasement
- Contamination in pits or boxes
- SARA 313 materials
- Other materials

For each category of material at risk, Accident Analysis required the capacity of the container, a description of the material at risk (including the physical form, volume or activity, and whether the

material was transient), and the quantity of containers (for example, the number of drums or bottles, if applicable). Table 1, Materials Inventory, was designed to fulfill these data requirements.

3.2.2 Table 2 - Hazards Identification

Hazard Identification required verification of the types of hazards present. For each "facility" identified on the master list and for each additional facility identified during field walkdowns, currently-existing hazards were to be identified. An existing checklist of potential hazard designators was provided by the FSAR hazard analysts and utilized for hazard verification. This checklist of hazards and the master checklist of facilities were used to create Table 2, Hazards Identification.

3.2.3 Table 3 - Unique Phenomena

Hazard/accident analysis and identification of controls required identification of any unique phenomena associated with waste storage tanks. All double-shell, single-shell, and double-contained receiver tanks were to be evaluated against the following potentially unique phenomena:

- Flammable gas
- Ferrocyanide
- Organics
 - Separable phase
 - TOC > 10 g/L in liquids
 - TOC > 3 wt% in solids on a dry basis)
- High heat (the definition of high heat as a unique phenomena varied from tank farm to tank farm based on the definitions provided in the OSDs. High heat criteria ranged from >40,000 BTU/hr to >70,000 BTU/hr.)
- Pyrophoric materials
- Siphoning
- Criticality (> 1 g/L in solids)
- Corrosivity (corrosive material exceeding OSD limits)

These informational requirements led to the development of Table 3, Unique Phenomena. Any documented discounted events (i.e., studies which resolved specific tank related issues) were also considered when filling out this table and were noted where applicable.

3.2.4 Table 4 - Facility Configuration

Identification of what "facilities" currently exist and appear operable was the main type of information required to support the FSAR facility description (Chapter 2) and identification of safety controls. A "facility" was loosely defined to include structures such as buildings, tanks, pits, boxes, cribs, ponds, and ditches. For each facility which existed and appeared operable, existing substructures (such as a pit above a tank), ventilation, instrumentation, and other subsystems were to be identified and their operability assessed. Table 4, Facility Configuration, was designed to fulfill these informational requirements.

3.2.5 Table 5 - Radiation Source/Physical Protection

For each of the facilities identified on Table 4 which could be thought of as a "location", the Radiation Protection Program section of the FSAR required an assessment of whether the location represented a radiation source greater than 100 mR/hr. Tanks, pits, boxes, etc., were all considered "locations"; instrumentation was not considered a location. For all facilities thought to be greater than 100 mR/hr, the authors of the Radiation Protection Program also needed a listing and description of the protective features employed. Specific descriptive information requested included the number and size of any penetrations, thickness of protective features such as cover blocks, and the condition of the cover blocks, cover plates, and penetrations. These informational requirements led to the development of Table 5, Radiation Source / Physical Protection.

3.2.6 Table 6 - OSR/OSD Safety Controls

Once completed, the FSAR will identify a set of systems, structures, and components (SSCs) which will be relied upon to provide mitigation or prevention of various potential accidents. To support this need of the FSAR, existing OSR and OSD requirements and implementing procedures which are known to be monitored or controlled by the systems, structures, and components identified on Table 4 were to be identified. Table 6, OSD/OSR Safety Controls, which contains all the SSCs from Table 4, was created to collect the currently existing requirements which are monitored or controlled by these SSCs and any procedures associated with these OSR/OSD requirements.

3.2.7 Table 7 - Transfer Pipelines

During the planning phase of the project, it became clear that transfer lines would be best handled on a separate checklist. The authors of the Facility Description and Accident Analysis sections of the FSAR were consulted and a list of questions for this checklist was developed in a brainstorming session. Since only active transfer lines between farms or facilities are considered in FSAR accident scenarios, a joint decision was made to focus the detailed transfer line study on active transfer lines. The scope was further defined by omitting the short runs of transfer piping which are fully contained within a tank farm. Lines that were outside this scope were listed for FSAR Chapter 2 accountability purposes.

3.3 TABLE INSTRUCTIONS

Instructions were prepared for each of the above tables to assist in the uniform completion of each table. These instructions were designed to ensure relative consistency in data collection and data recording and have been provided in Appendix A.

3.4 TEAM DEVELOPMENT AND TRAINING

Three teams were established to perform the document and field verification work. Each team consisted of a team lead, document review support personnel, and facility specific support personnel. The facility specific support personnel consisted of a cognizant engineer, a design authority, and/or an operations representative familiar with the particular tank farm or miscellaneous facility under review.

Each team included a member responsible for hazard identification and a member responsible for facility configuration. Employees of Science Applications International Corporation (SAIC), Stone & Webster, Westinghouse Hanford Company, and Kaiser Engineering Hanford participated on the three teams.

Two main training sessions were held, one prior to the AP Pilot Study on March 22, 1996 and one after the AP Pilot Study on March 28, 1996 (prior to kick-off of the main verification effort). These training sessions were intended to orient the participants on the objectives of, and methodology employed in, the TWRS FSAR Verification Project. A lessons-learned meeting was also held immediately following the AP Pilot Study on March 25, 1996 to incorporate issues that were encountered during the AP Pilot Study.

3.5 AP PILOT STUDY

Once draft versions of Tables 1 through 6 were prepared, a pilot study was completed on AP Tank Farm. Document reviews were expected to be completed prior to initiation of field walkdowns, but due to schedule constraints, the field walkdown for AP Tank Farm was completed prior to extensive document review. The pilot study revealed the importance of performing as much document review as possible prior to the field walkdown in order to make best use of the time in the field. The pilot study demonstrated to the verification team the type of information which might be visible in a brief facility walkdown. The cognizant engineer and operations personnel familiar with the facility were found to be crucial to the verification process, since they had knowledge of their systems which would be difficult, if not impossible, to locate in documents. They were also able to point the verification team members to the most useful and up-to-date documents and drawings on their facilities. The pilot study also allowed the potential pitfalls associated with gaining entry to the tank farms to be resolved.

Following the AP Pilot Study, tables populated with the data obtained on AP Tank Farm were sent out for review to the ultimate users of the information (i.e., the FSAR authors). Their comments and the comments of the cognizant engineer involved with the Pilot Study were used to finalize the tables.

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4.0 VERIFICATION METHODOLOGY

Due to the quantity of documentation available for review, the document review process was completed by numerous personnel from SAIC, Stone and Webster, ICF Kaiser Hanford, and Westinghouse Hanford Company. The original project plan called for document reviews to be completed prior to initiation of the field walkdown. In reality, time constraints sometimes forced field walkdowns to occur without thorough document review. In these cases, information from documents was backfilled after the field walkdowns were completed.

An initial list of the types of documents to be used in the document review was prepared during the planning phase of the project. Drawings, databases, supporting documents (SDs), external publications, procedures, roundsheets, Condition Assessment Reports, Project 314 Reports, and OSR/OSDs were included on the original list. The list was continually expanded throughout the course of the project, as new information became available. A complete list of document references used in the process is provided in Section 6.0. The individual tables also include all references used; references are either listed next to a given data field or at the end of the table.

Field verification was performed through facility walkdowns. Team members, including a cognizant engineer, design authority, and operations personnel where applicable, viewed accessible portions of the tank farm facilities. No attempt was made to remove cover blocks or cover plates or to access restricted, contaminated areas such as the 244-AR Vault canyon. This was not intended to be a walkdown for configuration management as-buiting of all of TWRS, but rather to identify the current configuration of TWRS facilities and currently visible hazards. The information as presented in the matrix tables represents a "snap-shot in time" view of TWRS facilities.

Access to some portions of TWRS for field verification was limited by construction activities, fresh air zones, or special training requirements. An attempt was made to locate qualified personnel to inspect all possible locations; areas not reviewed on walkdowns are noted on the individual master checklists.

For each of the seven tables, the types of documents which were reviewed and the ways in which field verification was used to support completion of the tables are summarized below.

4.1 TABLE 1 - MATERIALS INVENTORY

Tank contents were obtained from WHC-EP-0182-93 for SSTs and DCRTs and from the Tusler report 740A30-96-008 dated 2/27/96 for DSTs. IMUST contents were taken from WHC-EP-0861 and WHC-SD-EN-ES-040.

Tank vapor space volumes were obtained from the "TWINS" database. Headspace radionuclide concentrations were obtained from WHC-SD-WM-SARR-037. Ammonia amounts in the headspace were obtained from either the TWINS database, report PNL-10189 "Toxicologic Evaluation of Analytes from Tank 241-C-103", or from information obtained from WHC Industrial Hygiene Programs (personal interviews with Kyleen Smith and Elton Hewitt). For the WHC Industrial Hygiene Program information, all vapor samples came from areas likely to be indicative of concentrations in the double- and single-shell tanks. Typical sample areas were tank risers, breather filters, exhauster filters, and pump pits. The data cover a period from January 1993 to February 1996.

Only maximum ppm values were used. This resulted in most data coming from 1995 and 1996. Data have been corrected for temperature. Since the pressure did not vary a great deal, it was assumed to be a constant 29.2 inches of mercury (about 14.3 psi). Actual pressures varied from 28.65 to 29.78 inches of mercury. Temperatures varied from 0 to 84°C. Elton Hewitt of WHC Industrial Hygiene indicated that the accuracy of the ammonia measurements may deviate $\pm 25\%$.

Analytical data on the curie content of failed HEPA filters was obtained for a small number of HEPA filters from WHC-SD-WM-EMP-031, Rev. 2. The capacity (maximum activity levels) for HEPA filters was identified as 200 mR/hr for DSTs in WHC-WM-SAR-016. However, WHC-CM-7-5 states that HEPA filters will be replaced when continuous exposure rates exceed 1 R/hr at six inches. The 1 R/hr number was reported for non-DST (e.g., DCRT, SST) HEPA filters.

Drawings and various documents were utilized to find capacities of pits, sumps, and tanks. SARA 313 materials were taken from the Hazardous Material Inventory Database, Inventory Verification by Reporting Representative Report dated 1/10/96.

The Environmental Sites Database was used to find data on the types of materials historically discharged to cribs, ponds, and ditches. Another database, the Liquid Effluent Monitoring Information System (LEMIS), was identified as another potential source of information on crib, pond, and ditch material inventory, but due to time constraints was not investigated further.

Field verification of materials inventory consisted of identifying visible materials within buildings or within the tank farms. Tanks, bottles, and drums of chemicals, gas bottles, and containers of contaminated material were observed in the field. Interviews with cognizant engineers, design authorities, and operations personnel were also used to verify information on material inventory when no other sources of information were available. Refer to the references provided on the individual tables for the exact references utilized.

4.2 TABLE 2 - HAZARDS IDENTIFICATION

The OSDs for SSTs and DSTs were utilized as a reference which indicated the presence of caustics, nitrates, and gases within the tanks. OSD-T-151-00030, Rev. B-17 was used to identify which tanks were watchlist or recommended watchlist tanks. Drawings which indicated various pieces of equipment which could be potential hazards were also utilized.

The field walkdown was utilized to verify visible hazards, such as flammable materials, friction sources, electrical equipment, kinetic-rotation and kinetic-linear hazards, mass-gravity-height hazards, and pressure volume hazards. Interviews with cognizant engineers, design authorities, and operations personnel were also used to verify the presence of hazards, particularly where visual confirmation was not possible.

4.3 TABLE 3 - UNIQUE PHENOMENA

Unique phenomena were characterized for the DSTs, SSTs, and DCRTs only. Table 3 information was acquired entirely through document review or interviews with cognizant personnel by the WHC Process Engineering Group. In some instances, the source reports used to develop the recommendations for watchlist tank designations were used as sources of information.

No field verification of unique phenomena was attempted, due to the nature of the materials (i.e., the tank contents) involved.

4.4 TABLE 4 - FACILITY CONFIGURATION

Multiple sources of documentation were utilized to populate Table 4. Drawings, riser studies (SD-RE-TI-053 and SD-RE-TI-093), Interim Safety Basis (WHC-SD-WM-ISB-001), SARs for miscellaneous facilities such as 204-AR and 244-AR, roundsheets, and procedures were all used to identify what systems, structures, and components were present in a given farm or miscellaneous facility. Roundsheets were used in some instances to verify the operability of instrumentation. Equipment condition scores were all taken from documents, either Condition Assessment Surveys, or Project 314 Reports (WHC-SD-W314-ES-018, WHC-SD-W314-ES-020, and WHC-SD-W314-ES-021). Equipment condition scores ranged from 1 to 10, with 10 being the best condition. No documented sources of equipment condition scores for single shell tanks was found during the document review process.

Field verification was used to verify the existence of all visible systems, structures, and components. The operability of some equipment could be observed or assumed through field walkdowns, as well. Generally, the condition of equipment was not reported based on field walkdowns, unless obvious damage of a given item was observed. Shift office routing boards were used to verify the isolation status of some tanks, pits, and diversion boxes. Interviews with cognizant engineers, design authorities, and operations personnel were used as required to verify the existence or operability of systems, structures, or components not visible on field walkdowns. As noted above, no attempts were made to remove cover blocks to view internal contents of pits or boxes.

4.5 TABLE 5 - RADIATION SOURCE/PHYSICAL PROTECTION

Limited sources of documentation were found to indicate whether locations were greater than 100 mR/hr. For surface locations, radiation survey maps were reviewed, with no locations greater than 100 mR/hr identified. The East Tank Farms High/Very High Radiation Area Log, dated 5/2/96 was obtained, which identified several locations which are monitored weekly, but all were indicated as below 100 mR/hr on the 5/2/96 survey. Requests for similar information from West Tank Farms received no response. For below surface contamination, all pits, radioactive material storage tanks, and diversion boxes were assumed to be greater than 100 mR/hr.

Protective feature descriptions (e.g., cover block thicknesses) were obtained from drawings. Soil thicknesses above SSTs and DSTs were obtained from the corresponding OSDs.

Field walkdowns were used to verify the condition of protective features and to document the estimated size and number of cover block penetrations, which will be used during the analysis of a spray accident evident.

4.6 TABLE 6 - OSD/OSR SAFETY CONTROLS

Table 6 was created from an existing database on OSRs (reference WHC-SD-WM-RPT-220, Rev. 0) and a database created in parallel with this project on OSDs (OSD Requirements Database,

Kahlia, 1996). The OSDs utilized were current as of 4/17/96. The purpose of Table 6 is to relate existing OSR/OSDs and associated implementing procedures to specific SSCs identified on Table 4 for each specific facility. Any requirements which were not tied to systems, structures, or components (SSCs) in the above databases were not tied to SSCs in this table. Those requirements which are not monitored or controlled by an SSCs have not been included in Table 6.

This relation of safety requirement to SSC will allow the hazard and accident analysts to determine if appropriate controls are currently in place for the specific safety controls determined through their analysis to be required. The purpose of Table 6 for the verification project is not to provide a comprehensive listing of all OSR/OSDs and implementing procedures at this time.

The verification column included in Table 6 (FV = field verified, DR = document review) represents the information available in WHC-SD-WM-RPT-220 only. No additional field or document verification was performed to support Table 6 as part of this project.

4.7 TABLE 7 - TRANSFER PIPELINES

Since the transfer lines are below ground, all data were taken from source documentation. Numerous supporting documents, external publications, and the Operations Transfer Pipeline Routing Board were sources of information as indicated in the references listed at the end of Table 7.

The field verification activities were limited to inspection of the diversion boxes to which the pipelines connect (i.e., to/from locations) and the cross site transfer line vent station. The main source of information obtained through walkdowns was the condition of the protective features (i.e., the cover blocks) for the transfer line diversion boxes.

4.8 DATA ASSIMILATION PROCESS

As noted above, the document review process was accomplished through the combined efforts of numerous individuals in different organizations. It was the responsibility of the team leaders to assimilate all the acquired data into the pre-established table structures. The team leaders participated in all field walkdowns and were responsible for assimilating the field walkdown and interview information into the tables. When multiple sources of information provided different information which could not be resolved, the comment sections were used to identify the discrepancies.

The team leaders were also responsible for reviewing their assigned master checklists of facilities and assuring accountability of all assigned facilities.

All tables were generated in Word Perfect 5.1/5.2 except Tables 6 and 7. Table 6 was generated in Access 2.0 (reports generated with Crystal Report Writer 4.0) and Table 7 was generated in Excel 5.0.

4.9 REVIEW/SIGN OFF PROCESS

All tables were sent out for review by the FSAR authors, the cognizant engineers, and the design authorities, as applicable. Meetings were held to discuss comments. All comments received

were incorporated following these discussions. The tables in Appendices B through G have been signed-off by the respective SAIC/Stone and Webster team leader who supervised the data assimilation. Upon completion of the formal document review process by WHC and satisfactory incorporation of comments, the respective facility cognizant engineers and design authorities are anticipated to provide final document sign-off.

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5.0 SUMMARY AND CONCLUSIONS

The verification activity developed data only for those TWRS facilities within the scope of the present TWRS FSAR, and as such will require additional efforts to develop the equivalent set of data for all respective TWRS related facilities.

The informational data gathered during the course of this effort provides a basis for identifying the variability in the hazards and configurations within TWRS. This data will be used to support the identification and application of a safety management program consistent with the variations within TWRS so that safety management resources can be applied in an effective manner only where required.

The verification project was designed and implemented utilizing existing TWRS documentation, visual inspections of TWRS systems, and current knowledge of TWRS engineering and operational personnel. The result of this effort is an integrated collection of TWRS specific information in one coherent data file which can be used to support three basic TWRS activities:

- 1) Performance of the analyses and identification of the controls for the TWRS FSAR;
- 2) Confirmation of facility specific configurations; and
- 3) Development and/or implementation of a TWRS configuration management program.

To this end, the data has been made available to WHC for input to a relational database to facilitate its utility in these two activities. Once the information has been assimilated, the identification of a smaller subset of safety critical systems, structures and components will be established based on the postulated credible accident scenarios for TWRS. This refined subset of critical systems, structures and components will then require a further detailed field and document verification review to determine for each respective systems items including but not limited to, equipment IDs, review and verification of roundsheets and calibration records, operability assessments and OSR/OSD verifications. This detailed review process for the refined subset of systems will verify the safety basis and associated controls with TWRS facilities.

The information developed by this activity will be turned over to the TWRS design authority for use in a configuration management program. As part of this program it is anticipated that the data will need to be maintained current. Maintenance of the database can be related to routine operational (e.g., round sheets) and engineering activities.

The referenced documentation used as the basis for the development of the matrix tables were in most cases provided by WHC cognizant personnel and was determined to be at the time of review the most appropriate and accurate information available.

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6.0 REFERENCES

All documentation used in completion of the matrix tables is listed below. Other reference sources, such as personal interviews, drawings, databases, etc., are not listed here, but are noted on the individual tables located in Appendices B-G.

200 Area Tank Farms Cathodic Protection System Re-Survey, March, 1995.

200 East/West Tank Farms Cathodic Protection System Survey Report, July, 1994.

244-BX DCRT Facility Manual, Stone & Webster, March 1994

Aging Waste Facility Interim Safety Equipment List, WHC-SD-WM-SEL-020, Westinghouse Hanford Company, Richland, Washington

Aging Waste Interim OSRs, WHC-SD-WM-OSR-004, Westinghouse Hanford Company, Richland Washington.

Authorization Basis Self-Assessment: Requirements Implementation Matrix, WHC-SD-WM-RPT-220, Rev. 0, Westinghouse Hanford Company, Richland, Washington

Development of Radiological Concentrations and Unit Liter Doses for TWRS FSAR Radiological Consequence Calculations, WHC-SD-WM-SARR-037, Rev. 0, Westinghouse Hanford Company, Richland, Washington

Double-Shell Tank Ancillary Equipment Second Containment Evaluation, WHC-SD-WM-EV-040, Rev. 1, Westinghouse Hanford Company, Richland, Washington

Double Shell Tank Composition Status, Leslie Tusler, 74A30-96-008, Westinghouse Hanford Company, Richland, Washington

Double Shell Tank Interim OSRs, WHC-SD-WM-OSR-016, Rev. 0, Westinghouse Hanford Company, Richland, Washington

Double Shell Tanks Interim Safety Equipment List, WHC-SD-WM-SEL-026, Westinghouse Hanford Company, Richland, Washington

Double Shell Underground Waste Storage Tanks Riser Survey, SD-RE-TI-093, Rev. 4, Westinghouse Hanford Company, Richland, Washington

Engineering Study - 200 East Tank Farm Instrumentation Upgrade, WHC-SD-W314A-ES-001, Westinghouse Hanford Company, Richland, Washington

Engineering Study - Diversion Boxes, Environmental Upgrades for Tank Farms, WHC-SD-WM-ES-159, Rev. 1A, Westinghouse Hanford Company, Richland, Washington

Final Report Exposure Monitors Data Evaluation for the Hanford High Level Waste Tanks - Tank Farms B, T and TY, Apex Environmental Inc., January 18, 1996

- Hanford Site Tank Farm Facilities ISB*, WHC-SD-WM-ISB-001, Rev. 0, Westinghouse Hanford Company, Richland, Washington
- Hanford Site Waste Storage Tank Information Notebook*, WHC-EP-0625, Westinghouse Hanford Company, Richland, Washington
- A History of the 200 Area Tank Farms*, WHC-MR-0132, Westinghouse Hanford Company, Richland, Washington
- Integrity Assessment Plan for the Double-Contained Receiver Tanks and Designated Ancillary Equipment*, WHC-SD-WM-WP-068, Rev. 0, Westinghouse Hanford Company, Richland, Washington
- Operational Safety Requirements and Operating Specification Documentation Compliance Instrumentation Matrices - 200 East Area Tank Farm*, WHC-SD-WM-EL-003, Rev. 0, Westinghouse Hanford Company, Richland, Washington
- Operating Specifications for Aging Waste*, OSD-T-151-00017, Rev. D-7, Westinghouse Hanford Company, Richland, Washington.
- Operating Specifications for Double-Shell Tanks*, OSD-T-151-00007, Rev. H-17, Westinghouse Hanford Company, Richland, Washington
- Operating Specifications for Single-Shell Waste Storage Tanks*, OSD-T-151-00013, Rev. D-10, Westinghouse Hanford Company, Richland, Washington
- Operating Specifications for Tank Farm Leak Detection and Single-Shell Tank Intrusion*, OSD-T-151-00031, Rev. B-2, Westinghouse Hanford Company, Richland, Washington
- Operating Specifications for Watch List Tanks*, OSD-T-151-00030, Rev. B-17, Westinghouse Hanford Company, Richland, Washington
- Project W-058 Engineering Study*, WHC-SD-W058-ES-001, Rev. 0, Westinghouse Hanford Company, Richland, Washington
- Project W-314 DST and DCRT Instrument and Control Systems, Initial Assessment*, WHC-SD-W314-ES-018, Rev. 0, Westinghouse Hanford Company, Richland, Washington
- Project W-314 DST and DCRT Tank Farm Electrical Distribution Systems, Initial Assessment*, WHC-SD-W314-ES-020, Rev. 0, Westinghouse Hanford Company, Richland, Washington
- Project W-314 DST and DCRT Tank Farm Mechanical Systems Initial Assessment*, WHC-SD-W314-ES-021, Westinghouse Hanford Company, Richland, Washington
- Riser Configuration Document for Single-Shell Waste Tanks*, SD-RE-TI-053, Rev. 9, Westinghouse Hanford Company, Richland, Washington
- Single Shell Tank Leak Stabilization Record*, WHC-SD-RE-TI-178, Rev. 5, Westinghouse Hanford Company, Richland, Washington

Single Shell Tanks Interim Safety Equipment List, WHC-SD-WM-SEL-027, Westinghouse Hanford Company, Richland, Washington

Status Report for Inactive Miscellaneous Underground Storage Tanks at Hanford Site 200 Areas, WHC-EP-0861, Rev. 0, Westinghouse Hanford Company, Richland, Washington

TWRS Transfer Facility Compliance Plan, WHC-SD-WM-EV-094, Rev. 0, Westinghouse Hanford Company, Richland, Washington

Tank Farm Operator Round Sheets AP, AW, Tank Farm and LERF, TF-OR-A-03, Westinghouse Hanford Company, Richland, Washington

Tank Farm Potential Ignition Sources, WHC-SD-WM-ES-362, Rev. 1, Westinghouse Hanford Company, Richland, Washington

Tank Farm Restoration and Upgrades Program Plan, WHC-EP-0392, Westinghouse Hanford Company, Richland, Washington

Tank Waste Remediation System Inactive Miscellaneous Underground Storage Tanks Program Plan, WHC-SD-WM-PD-046, Rev. 0, Westinghouse Hanford Company, Richland, Washington

Transfer Lines, Environmental Upgrade for the Tank Farms, WHC-SD-WM-ES-160, Westinghouse Hanford Company, Richland, Washington

Waste Tank Risers Available for Sampling, WHC-SD-TI-710, Rev. 2, Westinghouse Hanford Company, Richland, Washington

Waste Tank Summary Report for Month Ending December 31, 1995, WHC-EP-0182-93, Westinghouse Hanford Company, Richland, Washington

Work Plan for Tank Farms, Environmental Upgrades of Ancillary Equipment Secondary Containment, WHC-SD-WM-WP-040, Westinghouse Hanford Company, Richland, Washington

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APPENDIX A
MATRIX TABLE INSTRUCTION SHEETS

Table 1
Materials Inventory Checklist Instructions

This table will be filled out for each tank farm and appropriate miscellaneous facilities.

MAR Category. This column provides the possible types of material which could be located within the tank farms, divided by Material at Risk (MAR) Categories. On page 1 under Tank Contents, list all tanks within the tank farm or miscellaneous building. SARA 313 materials are to be added on page 6 and miscellaneous materials may be added on page 7. If a MAR category does not apply for the tank farm or miscellaneous facility, write NA and proceed to the next MAR category.

NOTE: All information related to tank contents must be provided by J. Sloughter's organization. For single shell tanks, use (1) the December 31, 1995 Hanlon Report, WHC-EP-0182-93. For double shell tanks, use (2) the Tusler report 740A30-96-008.

Note* - For material classification types, use reference #1 noted above.

Tank headspace data is to be obtained from tank vapor database (TWINS database).

Capacity. The capacity of the tank or vessel should be added here, where applicable. If not applicable, fill in NA. Design capacities to be provided from approved design media. Provide the source of information (e.g., document number).

Material Classification. This column should be completed with information pertaining to the type of material(s) in the unit (e.g., acetylene, acetone, AGING, etc.) Include the source of information (reference document and/or field walk-down). For the tank contents, the following abbreviations should be used:

AGING - Aging waste. High level, first cycle solvent extraction waste from the PUREX plant.

CC - Concentrated Complexant. Concentrated product from the evaporation of dilute complexed waste.

CP - Concentrated Phosphate Waste. Waste originating from the decontamination of the N Reactor in the 100 N Area. Concentration of this waste produces concentrated phosphate waste.

DC - Dilute Complexed Waste. Characterized by a high content of organic carbon including organic complexants. Main sources of DC waste in the double shell tank system are saltwell liquid inventory from single shell tanks.

DN - Dilute Non-Complexed Waste. Low activity waste originating from T and S Plants, the 300 and 400 Areas, PUREX facility (decladding supernatant and miscellaneous wastes), 100 N Area (sulfate waste), B Plant, saltwells, and PFP (supernate).

DSS - Double Shell Slurry. Waste that exceeds the sodium aluminate saturation boundary in the evaporator without exceeding receiver tank composition limits. For reporting purposes, DSS is considered a solid.

DSSF - Double Shell Slurry Feed. Waste concentrated just before reaching the sodium aluminate saturation boundary in the evaporator without exceeding receiver tank composition limits. This form is not as concentrated as DSS.

PD - PUREX decladding. PUREX neutralized cladding removal waste (NCRW) is the solids portion of the PUREX plant neutralized cladding removal waste stream; received in tank farms as a slurry.

PT - PFP Transuranic (TRU) Solids. TRU solids fraction from Plutonium Finishing Plant operations.

Type. Provide the type of waste (e.g., sludge, supernate, etc.) if applicable. Provide the source of information.

Physical Form. Indicate if the material is solid, liquid, or vapor.

Volume or Activity. Provide the volume or activity for each material. Include units (gallons, cubic meters, etc) and the source of all information.

Transient. Indicate with a yes/no reply whether the material could be easily moved to another location. For example, a bottle of acetone could be easily relocated or removed and would be considered a transient material. Waste in the double and single shell tanks are not considered transient.

Quantity. Provide the number of containers, if applicable. Include the source of information, if applicable.

Comments. Provide any additional information in this location. Clarify responses as required.

REMINDER: PROVIDE REFERENCES FOR ALL DOCUMENTATION USED.

STATE WHERE WALKDOWN WERE USED TO IDENTIFY MATERIALS (INCLUDE DATE OF WALKDOWN AND NAMES OF INDIVIDUALS).

Table 2
Hazard Identification Checklist Instructions

Facility. All "facilities" (the term "facility" is used very broadly here) have been listed by identification number in the first column. While an attempt has been made to create a comprehensive list of the facilities within the given tank farm which will be included in the final safety analysis report, additional facilities may be identified and added to the end of the list.

Type. The type of facility (e.g. single shell tank (SST), double shell tank (DST), valve pit) has been provided in this column.

Columns A-M. The next 13 columns should be completed with information on the hazards which have been identified for each facility. Responses should be coded with numbers using the **attached table** of responses. The source of information should be provided for each entry. Write NA if the hazards do not apply to the facility.

Comments. Provide any additional information in this location. Additional hazards not covered by the previous categories may be added here. Clarify responses as required.

REMINDER: PROVIDE REFERENCES FOR ALL DOCUMENTATION.

STATE WHERE WALKDOWNS WERE USED TO DOCUMENT HAZARDS (INCLUDE DATE & NAMES OF INDIVIDUALS RESPONSIBLE FOR WALKDOWN).

| ENERGY CLASSIFICATION DISPOSITIONS | | | | |
|---|---|---|---|--|
| <p>A Corrosive</p> <ol style="list-style-type: none"> Acids Caustic Natural chemicals Decon solution High temperature waste Other <p>B Explosive/Pyrophoric</p> <ol style="list-style-type: none"> Chaps Primer cord Dynamite Scrub chemicals Dusta Hydrogen Gases, other Nitrates Peroxide-superoxides Powder U metal Other <p>C Nuclear/Criticality</p> <ol style="list-style-type: none"> Vaults Temporary storage areas Shipping and receiving areas Filters Canister ground Storage racks Cables and basins Decon solution Hand carry Crematoria Hot cells, assembly, inspection Laboratories Basins Other | <p>D Flammable Materials</p> <ol style="list-style-type: none"> Packing materials Rags Gasoline Lube oil Coolant oil Paint solvent Diesel fuel Wax and contents Trucks and contents Grease Hydrogen Nitric acid Organics Gases-other Liquids-other Sodium Other <p>E Thermal Radiation</p> <ol style="list-style-type: none"> Furnaces and boilers Steam lines Lab equipment Solar Other <p>F Chemical Reactions</p> <ol style="list-style-type: none"> Uncontrolled chemical reactions Other <p>G Friction</p> <ol style="list-style-type: none"> Belts Bearings Fans Gears Motors Power tools Other All | <p>H Electrical</p> <ol style="list-style-type: none"> Battery units Diesel units Transformers Wiring Switchgear Underground wiring Cable runs Panelboards Motors Heaters Power tools Small equipment Electrical equipment Hot plates High voltage Locomotive, electrical Transmission lines Other | <p>I Kinetic-Rotational</p> <ol style="list-style-type: none"> Centrifuges Motors Pumps Fans Laundry equipment Shop equipment Other <p>J Kinetic-Linear</p> <ol style="list-style-type: none"> Cars, trucks, buses Forklifts, dollies, carts Railroad Obstructions Crate loads Pressure vessel blowdown Other | <p>K Mass, Gravity, Height</p> <ol style="list-style-type: none"> Human effort Stairs Lifts and cranes Bucket and ladder Trucks Slinga Hoists Elevators Scissors Scarfoid and ladders Pits Elevated doors Vessels Vaults Escalators Stairwells Other <p>L Pressure/Vacume</p> <ol style="list-style-type: none"> Boilers Surge tanks Autoclave Test Loops Gas bottles Pressure vessels Stressed members Gas receivers Steam pipes and lines Shocks Other <p>M Thermal (except radiant)</p> <ol style="list-style-type: none"> Convective Exposed components Heaters Freezers Electric welding, auto Furnaces/smelting Stream lines Welding torch Other |

Table 3
Unique Phenomena Checklist Instructions

Facility. For the purpose of identification of unique phenomena, only DST/SST and DCRTs will be considered.

Type. The type of facility (e.g. single shell tank (SST), double shell tank (DST), double contained receiver tank (DCRT)) has been provided in this column.

The next 7 columns should be completed with information on the potential unique phenomena associated with each facility.

Flammable Gas. Indicate whether flammable gas is present for each facility with a yes/no response. Include the sources of information.

Ferrocyanide. Indicate whether ferrocyanide is present for each facility with a yes/no response. Include the sources of information.

Organics. Indicate whether organics are present for each facility, either as a separable phase, TOC in liquids (> 10 g/L), or TOC in solids(>3 wt% dry basis), with yes/no responses. Include the sources of information.

High Heat. Indicate whether the facility has a high heat source (as defined by the OSDs) with a yes/no response. Include the sources of information.

Pyrophorics. Indicate whether the facility contains potentially pyrophoric material, with a yes/no response. Include the sources of information.

Siphoning. Indicate whether the facility contains a potential siphoning hazard with a yes/no response. Include the sources of information.

Criticality. Indicate if > 1 g/L fissionable material exists in the facility. Include the source of information.

Corrosivity. Indicate if the facility contains corrosive materials in excess of the OSD requirements for DST/SST (OSD-T151-00007, OSD-T151-00013). Include the source of information.

Other. List documented discounted events previously evaluated.

Comments. Provide any additional information in this location. Identify any other phenomena for each facility. Clarify responses as required.

REMINDER: PROVIDE REFERENCES FOR ALL DOCUMENTATION.

STATE WHERE WALKDOWNS WERE PERFORMED TO IDENTIFY UNIQUE PHENOMENA.

Table 4
Facility Configuration Checklist Instructions

System The list of systems contains the type of systems to be reviewed for each tank farm. The system categories include: tanks, pits, boxes, buildings, steam systems, HVAC systems, instrumentation, and transfer lines. For each facility (e.g., tank, pit, box, building etc.) provide the contents (leak detector, CAM, high level alarm, floor drain, etc.). Under buildings, identify the buildings that are associated with the tank farm (a master list is provided for each tank farm, which is probably not up-to-date). For miscellaneous facilities identify the specific facility and list associated components. Add additional facilities at the end of the list provided.

Equipment Identifier This is the system or equipment tag i.d. number or location reference (i.e. pit #, riser #, etc.). Provide this i.d. number if it is available.

Equipment Existing Identify if the system or equipment identified in the first column actually exists based on drawing/riser list reviews or field walkdowns. Indicate the source of information (document/drawing number or field walkdown).

Equipment Operable Identify if the equipment/system is currently in operable condition. This information is expected to be obtained through field walkdowns and/or interviews with operators and cognizant engineers.

Equipment Condition This applies to the condition of system equipment. A numeric rating on a 1-10 scale with, 10 being the best, will be provided to individual systems (i.e. ventilation, instrumentation, etc.) as appropriate. For DST systems reference Condition Assessment Surveys for specific facilities (i.e. 241-AW, 241-AP, etc.) If equipment condition is different from the referenced condition documented in the reference report, please note in the "Notes" column.

Notes Use the notes freely, especially for any unusual conditions. **Identify exceptions here**, e.g., "the leak detector on tank 101 does not work (the leak detectors on other tanks are operable)", "the leak detection pit 03C serves tanks 101-104 only", etc

REMEMBER: PROVIDE REFERENCES FOR ALL DOCUMENTATION USED.

STATE WHERE WALKDOWNS WERE USED FOR VERIFICATION.

Table 5
Radiation Source/Physical Protection Checklist Instructions

System The list of systems includes locations which are potential radiation sources. If additional sources are identified, add them at the bottom of the list or on an attached sheet.

System ID This is the system or equipment tag i.d. number. Provide this number if it is available.

Radiation Source Identify if the system or location contains a radiation sources or hotspots greater than or equal to 100 Mr/hr (yes/no answer).

Protective Feature Indicate if the system is or contains radiation protection features. This will include items such as lead shielding, coverblocks, soil over tanks, pits, lines, etc.

Description of Protective Feature Provide a description of the feature (thickness of coverblock, shielding material, etc.) from the drawings or field walkdowns (indicate the source of information). **During field walkdowns, note the condition of all visible protective features. Count the number of penetrations on each cover block and approximate area of the penetrations** (e.g., 50 penetrations, half 4-8" in diameter, the other half 24-48" in diameter).

Comments Use the comments freely, especially for any unusual conditions.

REMINDER: PROVIDE REFERENCES FOR ALL DOCUMENTATION.

STATE WHERE WALKDOWNS WERE USED TO OBTAIN INFORMATION.

Table 6
OSR/OSD Safety Controls Checklist

Systems/Structure/Components. The list of systems contains the systems, structures, and components found on Table 4.

OSR Limits. OSR limits are to be taken from WHC-SD-WM-RPT-220, Rev. 0. Only OSR which were tied to systems, structures, and components in WHC-SD-WM-RPT-220 and are implemented should be reported.

OSD Limits. OSD sections which are tied to systems, structures, and components are to be identified here. OSD sections fulfilled by administrative procedures are not to be listed.

Implementing Procedures. List all operating procedures for the associated safety control.

Verification. Indicate if any verification was performed (per WHC-SD-WM-RPT-220). List "DR" for document review (e.g., roundsheet review) and "FV" for anything which was field verified.

Comments Use the notes freely, especially for any unusual conditions. Note any exceptions to requirements, where applicable.

Table 7
Transfer Pipeline Checklist Instructions

Descriptive transfer pipeline data is to be filled out on this table for only active transfer pipelines, which are not within the boundaries of a tank farm. Inactive transfer lines running between tank farms, drain lines, and all transfer lines within individual tank farm boundaries are to be listed on the table by line ID number after the active interfarm lines for FSAR facility configuration purposes only.

Transfer Line ID. Provide the ID number of the active transfer line in this column. Lines which are within the boundary of a tank farm do not need to be included in this table. Segregate lines in the 200 East Area from lines in the 200 West Area.

Size. Specify the diameter of the pipeline in inches.

Type. Specify the type of line (i.e., double encased, concrete encased, direct buried, etc.).

Materials. Specify the transfer pipeline materials of construction.

Capacity. Calculate the pipeline capacity, assuming the pipeline is completely filled with liquid.

Design Pressure. Specify pipeline design pressure.

Connection Facilities. Identify the connection facilities (e.g., diversion boxes) for the pipeline (i.e., to/from locations).

Transfer Frequency. Specify (quantify) the frequency of transfers through this pipeline.

Hydrotesting Frequency. Indicate if the pipe is hydrotested. If yes, specify the frequency of testing.

Leak Detection. Indicate if the pipe has leak detection. If yes, specify the type of leak detection present.

Heat Trace. Specify if the line is heat traced.

Backflow/Siphoning Prevention. Specify if backflow/siphoning prevention is present.

Vent System. Specify if a pipe ventilation system is present. If yes, specify the type of vent system.

Diversion Boxes. Specify if diversion boxes are present. If yes, specify the diversion box identification number.

Cathodic Protection. Specify if the line is cathodically protected.

Comments. Provide any comments needed to clarify responses or provide additional information.

REMINDER: PROVIDE REFERENCES FOR ALL DOCUMENTATION.

APPENDIX B
200 EAST AREA DOUBLE-SHELL TANK FARMS
AN, AP, AW, AY, AZ

AN FARM TABLES

**TWRS FSAR MATRIX TABLE
VERIFICATION REVIEW APPROVALS
May 31, 1996**

The following information has been assembled, organized, and documented in the attached TWRS Final Safety Analysis Report (FSAR) Matrix Tables in support of Tank Farms FSAR development. Science Applications International Corporation (SAIC), along with the assistance of ICF Kaiser Hanford and the Westinghouse Hanford Company, assembled this data from controlled drawings and databases, supporting documents, as well as other site documentation. Where possible, the data has been field verified by performing field walkdowns of the particular facility of interest. The data also have been reviewed for its completeness and accuracy by the TWRS Facility Operations Design Authority and the Cognizant Engineer assigned to the respective facility. The information, to the best of the knowledge and the time allotted by the undersigned, is true, accurate, and complete as permitted by the referenced documents and drawings shown on the respective tables. No efforts were attempted or made by the authors and/or reviewers to substantiate the reference information shown on the tables beyond the stated qualifiers as noted on the individual facility matrix tables.

AN Tank Farm
Tank Farm or Facility

Charlotte Zaccone
SAIC Lead

5/31/96
Date

Robert Neuh
WHC Cognizant Engineer Review

9/4/96
Date

Ronald W. Reed
WHC Design Authority Review

4 Sep 96
Date

* Stone and Webster support

**AN FARM
MASTER CHECKLIST**

| Facility | Type | Material Inventory, (Table 1) | Hazards ID, (Table 2) | Unique Phenomena, (Table 3) | Facility Configuration, (Table 4) | Red Level, (Table 5) | Controls, (Table 6) | Comment |
|------------|---------------------|----------------------------------|--------------------------|--------------------------------|--------------------------------------|-------------------------|------------------------|---------|
| 241-AN-101 | DST | X | X | X | X | X | X | NA |
| 241-AN-102 | DST | X | X | X | X | X | X | NA |
| 241-AN-103 | DST | X | X | X | X | X | X | NA |
| 241-AN-104 | DST | X | X | X | X | X | X | NA |
| 241-AN-105 | DST | X | X | X | X | X | X | NA |
| 241-AN-106 | DST | X | X | X | X | X | X | NA |
| 241-AN-107 | DST | X | X | X | X | X | X | NA |
| COB-AN-1 | Cleanout box | X | X | NA | X | X | X | NA |
| COB-AN-2 | Cleanout box | X | X | NA | X | X | X | NA |
| COB-AN-3 | Cleanout box | X | X | NA | X | X | X | NA |
| COB-AN-4 | Cleanout box | X | X | NA | X | X | X | NA |
| COB-AN-5 | Cleanout box | X | X | NA | X | X | X | NA |
| COB-AN-6 | Cleanout box | X | X | NA | X | X | X | NA |
| COB-AN-7 | Cleanout box | X | X | NA | X | X | X | NA |
| COB-AN-8 | Cleanout box | X | X | NA | X | X | X | NA |
| COB-AN-9 | Cleanout box | X | X | NA | X | X | X | NA |
| 241-AN-273 | Compressor building | NA | X | NA | X | X | X | NA |

5/31/98 - Master checklist matrix establishes TWRS FSAR associated facilities and specific checklists for categories 1-8. Check appropriate category for individual facility checklists (i.e., 241-AN-101, a material inventory, hazard ID, facility configuration and controls checklist is required based on known facility hazards.)
NA = Not applicable or not required.

**AN FARM
MASTER CHECKLIST**

| Facility | Type | Material Inventory, (Table 1) | Hazard ID, (Table 2) | Unique Phenomena, (Table 3) | Facility Configuration, (Table 4) | Red Level, (Table 5) | Controls, (Table 6) | Comment |
|------------|--|----------------------------------|-------------------------|--------------------------------|--------------------------------------|-------------------------|------------------------|---------|
| 241-AN | Flush pit | X | X | NA | X | X | X | NA |
| 241-AN-271 | Instrument building | NA | X | NA | X | X | X | NA |
| | Service pit | X | X | NA | X | X | X | NA |
| 241-AN-A | Valve pit | X | X | NA | X | X | X | NA |
| 241-AN-B | Valve pit | X | X | NA | X | X | X | NA |
| | Other facilities found during walkdown or drawing search | | | | | | | |
| 241-AN-274 | Caustic addition control building | X | X | NA | X | X | X | NA |
| | Caustic addition skid | X | X | NA | X | X | X | NA |
| | Solinite Accumulation Area | X | X | NA | X | X | X | NA |
| | Change trailer | X | X | NA | X | X | X | NA |

5/31/98 - Master checklist matrix establishes TWRS FSAR associated facilities and specific checklists for categories 1-6. Check appropriate category for individual facility checklists (i.e., 241-A-101, a material inventory, hazard ID, facility configuration and controls checklist is required based on known facility hazards.)
NA = Not applicable or not required.

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | Quantity | Comments |
|---------------------------------|----------------------------|--|---|-------------------------|--|--|---|--------------------------------------|
| | | Material Classification | Type | Physical Form | Volume or Activity | Transient Y/N | | |
| Legend Box → | Capacity Provide reference | Type of material in the tank, pt. etc. (see instructions for abbreviations) Provide reference. | Supernatants, sludge, solids, etc. Provide reference. | Vapors, liquid, solid | How much material is present in gassing, cooling, etc. Include cells. Provide reference. | Can the material be released or moved into or out. | Number of tanks contained, etc. If applicable, Provide reference if applicable. | Notes |
| 1. Tank Contents | | | | | | | | |
| AN-101 | 1.16 Mgal[D3] | DN [D1] | Supernatant [D2] | Liquid [D2] | 1080 Kgal [D2] | No | NA | AN-101 will be pumped to 105-AP [D1] |
| AN-102 | 1.16 Mgal[D3] | CC [D1] | Supernatant Solid [D2] | Liquid Unknown [D2] | 963 Kgal 89 Kgal [D2] | No | NA | NA |
| AN-103 | 1.16 Mgal[D3] | DSS [D1] | Surry [D2] | Liquid Solid Vapor [D2] | 965 Kgal [D2] | No | NA | NA |
| AN-104 | 1.16 Mgal[D3] | DSSF [D1] | Surry [D2] | Liquid Solid Vapor[D2] | 1080 Kgal [D2] | No | NA | NA |
| AN-105 | 1.16 Mgal[D3] | DSSF [D1] | Surry [D2] | Liquid Solid Vapor [D2] | 1128 Kgal [D2] | No | NA | NA |
| AN-106 | 1.16 Mgal[D3] | DSSF [D1] CP [R.S. Nickelton, 6/25/96] | Supernatant Solid [D2] | Liquid Solid [D2] | 400 Kgal 17 Kgal [D2] | No | NA | NA |
| AN-107 | 1.16 Mgal[D3] | CC [D1] | Supernatant Solid [D2] | Liquid Solid [D2] | 923 Kgal 134 Kgal [D2] | No | NA | NA |

**TABLE 1
MATERIALS INVENTORY**

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | Quantity | Comments |
|---------------------------------|------------------------------|---|---|----------------------|---|--|---|---|
| | | Material Classification | Type | Physical Form | Volume or Activity | Transient Y/N | | |
| Legend Box -> | Capacity: Provide references | Type of material in the tank, pit, etc. (see instructions for abbreviations). Provide references. | Supernatant, sludge, solids, etc. Provide references. | Vapor (pH) and solid | How much material is present in gassing, cooling, etc. Provide units. Provide references. | Can the material be released or moved out of tank. | Number of tanks contained, etc. If applicable, Provide reference if applicable. | Notes |
| 2. Tank Headspace | | | | | | | | |
| AN-101 | NA | NA | NA | Vapor | 1235 M ³ . No HFS present". [D4] See radonucle concentrations, Note 1. | Yes* | NA | "Continuously vented to the atmosphere with the active ventilation system -Cognizant engineer reports ammonia is present, and that primary exhaust SFMS cabinet has an ammonia monitor |
| AN-102 | NA | NA | NA | Vapor | 1228 M ³ . No HFS present". [D4] See radonucle concentrations, Note 1. | Yes* | NA | "Continuously vented to the atmosphere with the active ventilation system -Cognizant engineer reports ammonia is present, and that primary exhaust SFMS cabinet has an ammonia monitor |
| AN-103 | NA | NA | NA | Vapor | 1708 M ³ . No HFS present". [D4] See radonucle concentrations, Note 1. | Yes* | NA | "Continuously vented to the atmosphere with the active ventilation system -Cognizant engineer reports ammonia is present, and that primary exhaust SFMS cabinet has an ammonia monitor |

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | Quantity | Comments |
|---------------------------------|-----------------------------|---|--|--------------------|--|--|---|---|
| | | Material Classification | Type | Physical Form | Volume or Activity | Treatment Y/N | | |
| <i>Legend Box -></i> | Capacity: Provide reference | Type of material in the tank, etc. (see instructions for abbreviations). Provide reference. | Solvents, alcohols, aldehydes, etc. Provide reference. | Vapor liquid solid | How much material is present in galleons, cubic feet, etc. Provide reference. | Can the material be released or moved into or out of the tank? | Number of tanks, containers, etc. If applicable, provide reference if applicable. | Notes |
| AN-104 | NA | NA | NA | Vapor | 1311 M ³ . No NH3 present". [D4] See radionuclide concentrations, Note 1. | Yes | NA | "Continuously vented to the atmosphere with the active ventilation system -Cognizant engineer reports ammonia is present, and that primary exhaust SHMS cabinet has an ammonia monitor |
| AN-105 | NA | NA | NA | Vapor | 1053 M ³ . No NH3 present". [D4] See radionuclide concentrations, Note 1. | Yes | NA | "Continuously vented to the atmosphere with the active ventilation system -Cognizant engineer reports ammonia is present, and that primary exhaust SHMS cabinet has an ammonia monitor |
| AN-106 | NA | NA | NA | Vapor | 3745 M ³ . No NH3 present". [D4] See radionuclide concentrations, Note 1. | Yes | NA | "Continuously vented to the atmosphere with the active ventilation system -Cognizant engineer reports ammonia is present, and that primary exhaust SHMS cabinet has an ammonia monitor |
| AN-107 | NA | NA | NA | Vapor | 1321 M ³ . No NH3 present". [D4] See radionuclide concentrations, Note 1. | Yes | NA | "Continuously vented to the atmosphere with the active ventilation system -Cognizant engineer reports ammonia is present, and that primary exhaust SHMS cabinet has an ammonia monitor |

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | | Quantity | Comments |
|--|--|--|---|---|--|---|---|--|----------|
| | | Material Classification | Type | Physical Form | Volumes or Activity | Threat Y/N | Notes | | |
| <i>Legend Box</i> → Capacity Provide reference | Capacity Provide reference | Type of material in the tank, pit, etc. (and instructions for addressing) Provide reference | Suspensions, solids, solutions etc. Provide reference | Vapors, liquid, solids Provide reference | How much material is present in gassing, cooling etc. Provide reference | Can this material be released or moved into a pit or tank | Number of bags, containers, etc. If applicable. Provide reference if appropriate. | Notes | |
| 3. Rail or Truck Trailer Contents | NA | NA | NA | NA | NA | NA | NA | There are no rails or trucks in AN Farm [not] | |
| 4. Contamination on Vehicles | NA | NA | NA | NA | NA | NA | NA | There are no vehicles in AN Farm [not] | |
| 5. Contamination on Equipment or Tools | NA | NA | NA | NA | NA | NA | NA | NA | |
| 6. Ventilation Filter Contents | 200 m ³ /hr maximum for all HEPA filters [D6] | NA | NA | Particulate | <200 m ³ /hr [D6] WHC-SD-WM-BEP-031, Rev 2, summarizes the assay results of HEPA filters for the DCRT stack 296-A-29 | Yes - disposal in accordance with WHC-EP-003-4 (R63) | NA | HEPA filters monitored for DP droploading in accordance with manufacturer's spec | |

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | Quantity | Comments |
|--|--|--|--|----------------------|--|--|--|---|
| | | Material Classification | Type | Physical Form | Volume or Activity | Transfer Y/N | | |
| Liquid Res-> | Capacity Provide reference | Type of material in the tank, pt. no. (see instructions for abbreviations). Provide reference. | Suspensions, slurries, solids, etc. Provide reference. | Vapor, liquid, solid | How much material is present in gassing, cooling, etc. Include units. Provide reference. | Can the material be released or moved yes or no. | Number of bags, containers, etc. If applicable, Provide reference if applicable. | Notes |
| Annulus | 200 m ³ /hr maximum for all HEPA filters [08] | NA | NA | Particulate | <200 m ³ /hr [08] | Yes - disposal in accordance with CERCLA-4 (RSC) | NA | HEPA filters required for DP decontaminating in accordance with manufacturer's spec |
| Breather | NA | NA | NA | NA | NA | NA | NA | There are no breathers on AN series. [wt1] |
| 7. Contamination in Ventilation System | | | | | | | | |
| Derrisiers | NA | Process condensate | NA | Liquid | Residual | NA | NA | NA |
| Seal loop | NA | Process condensate | NA | Liquid | Residual | NA | NA | NA |
| 8. Contents of Pipeline and/or Source Tank During Transfer | NA | NA | NA | NA | NA | NA | NA | Refer to Transfer Line Table 7 |

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | | Quantity | Comments |
|--|----------------------------------|---|---|------------------------|--|---|--|---|----------|
| | | Material Classification | Type | Physical Form | Volume or Activity | Transient Y/N | | | |
| <i>Legend Box -></i> | Capacity Provide reference | Type of material in the tank pit, etc. (see instructions for abbreviations) Provide reference | Supernatant sludge, solids, etc. Provide reference | Vapor, liquid solid | How much material is present in gassing, cooling, etc. Include units. Provide reference | Can the material be released or moved yes or no | Number of bags containers etc. if applicable. Provide reference if applicable | Notes | |
| 9. Contents of Sump or Encasement | NA | NA | NA | NA | NA | NA | NA | Refer to Transfer Line Table 7. | |
| 10. Contamination in Pit or Box | | | | | | | | | |
| Control sump pit AN 01A-07A | 3.8 K gal ea. [AN27] | Residual contamination | NA | Residue | Unknown | No | 7 pits | NA | |
| Annulus pump pit AN 01B-07B | 1.7 K gal ea. [AN28] | Residual contamination | NA | Residue | Unknown | No | 7 pits | NA | |
| Leak detection pump pit AN 01C-07C | 1.7 K gal ea. [AN29] | Residual contamination | NA | Residue | Unknown | No | 7 pits | NA | |
| Condensate pit AN 01D | 2.4 K gal ea. [AN23,23-37] | Residual contamination | NA | Residue | Unknown | No | 2 pits | NA | |
| Supernatant receiver pit AN 01E | 1.4 K gal [AN29] | Residual contamination | NA | Residue | Unknown | No | 1 pit | NA | |
| AN tank pit | 1.9 K gal [AN4] | Residual contamination | NA | Residue | Unknown | No | 1 pit | Exists on drawing. Not found in the field. | |
| Valve PR ANA | 5.4 K gal [AN31] | Residual contamination | NA | Residue | Unknown | No | twelve pit | NA | |

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | Quantity | Comments |
|---|---|---|--|-----------------------|---|---|--|--------------------------------|
| | | Material Classification | Type | Physical Form | Volume or Activity | Treatment Y/N | | |
| <i>Legend Box→</i> | Capacity Provide (see instructions for abbreviations) reference | Type of material in the tank pit, etc. (see instructions for abbreviations) Provide reference | Suspensions, sludges, mixtures, etc. Provide reference | Vapors, liquid, solid | How much material is present in gassing, cooling, etc. Include units. Provide reference | Can the material be released or moved into or out of process? | Number of bags, containers, etc. If applicable, Provide reference if applicable. | Notes |
| Valve P1 AN-B | 5.4 K gal [ANS1] | Residual contamination | NA | Residue | Unknown | No | 1 valve pit | NA |
| Flush pit | 1 K gal [ANS3] | Residual contamination | NA | Residue | Unknown | No | 1 flush pit | NA |
| Service pit | 2.4 K gal [ANS1,32] | Raw Water | NA | Residue | No | No | 1 service pit | NA |
| Clean out box AN 1-9 | .047 K gal ea. [ANS3] | Residual contamination | NA | Residue | Unknown | No | 9 COBs | NA |
| Vent pits AN #1,2,3,4 | .6 K gal ea. [ANS2,36] | Residual contamination | NA | Residue | Unknown | No | 4 vent pits | NA |
| Demister pit | 1.9 K gal [ANS4] | Residual contamination | NA | Residue | Unknown | No | demister pit | NA |
| 11 SARA 313 Materials | | | | | | | | |
| Bodies support POMIS personnel red number [nd1] | 480 F [D7] | 10% methanol 90% organ | NA | Gas | NA | Yes | 2 bottles | Located outside change trailer |

**TABLE 1
MATERIALS INVENTORY**

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | Quantity | Comments |
|--|---|--|--|-------------------------------|---|---|---|
| | | Material Classification | Type | Physical Form | Volume or Activity | | |
| Legend Box -> | Capacity Provide reference | Type of material in the tank, pit, etc. (see instructions for abbreviations) Provide reference | Supernatants, sludge, sediments, etc. Provide reference | Vapor, liquid and solid | How much material is present in tanks, cooling etc. Include units. Provide reference | Number of bags containers, etc. If applicable. Provide reference if applicable | Notes |
| 12. Other | | | | | | | |
| Casualty addition building and shed | 1 unit | See comment | NA | NA | NA | NA | No casing present at this time. [nd1] |
| Satellite accumulation area | 6 55gal mixed waste drums (not drum) [nd1] | RCPA Mixed Waste | Sol, paint waste, ink, conductive, mercury, organic, HCPA, HEMA, misc, RMW wastes | Solid | Low level (less than class C) | 6.55 gal drums near capacity for SAA | Inventories removed when filled, transported to 200-E 80 day storage facility |
| Buildings | 2 small buildings roped off for red buffer area [nd1] | Low level waste | SMPs, other low level waste | Solid | Low level | Yes | 2 small buildings near change trailer [nd1] |

Note 1: (1) Inventory contribution in Buft. of major radionuclides to the total unit filler dose due to inhalation/ingestion for liquids in tanks (Tables 4/5, WHC-SD-WM-SARR-037 Rev.0) C060- 6.97 E+06, S90-4.59 E+08, Y90 4.59 E+09; Cx137-5.86 E+10, Eu154-1.19 E+07, Np237-2.30 E+05, Pu238-1.78 E+08, Pu239-7.65 E+08, Pu241-1.94 E+07, Am241-3.40 E+07, Cm244-1.22 E+05. These are bounding concentrations. Inventory contribution in Buft. of major radionuclides to the total unit filler dose due to inhalation/ingestion for solids in tanks (Tables 4/5, WHC-SD-WM-SARR-037 Rev.0) C060- 1.5 E+07, S90-5.2 E+10, Y90 5.2 E+10, Cs137-5.9 E+10, Eu154-3.00 E+08, Np237-3.1 E+05, Pu238-7.2 E+07, Pu239-1.6 E+09, Pu241-3.9 E+08, Am241-2.7 E+08, Cm244-1.6 E+07. These are bounding concentrations.

(D1) "Waste Tank Summary Report for Month Ending December 31, 1986", WHC-EP-0182093 (B.M. Herion)

(D2) "Double-Shell Tank Composition Status - Quarterly Report", Internal Memo 74A30-98-008 (L.A. Tucker)

(D3) SD-WM-SAR-106, Rev 1

(D4) "TWINS" data base, Jim Hutchaby of PNNL

(D5) WHC-SD-WM-SARR-037, Rev 0 (created by Bill Cowley)

(D6) SD-WM-SAR-016, Rev.1

(D7) "Hazardous Material Inventory Database," 1/1988, provided by Michael R Veld

(I) Copyright Engineer comments, 5/2/88 Bob Nicholson

TABLE 1
MATERIALS INVENTORY

| |
|---|
| [AN-1] H-2-71652 REV.2, [AN-2] H-2-71872 REV.1, [AN-3] H-271833893 REV.2, [AN-4] H-2-50835 REV.2, [AN-5] EON V4368-42 102565, [AN-6] H-2-65366 REV.0, [AN-7] EON V451-2 1898, [AN-8] H-4-0202019 REV.0, [AN-9] H-2-718601 REV.3, [AN-10] H-2-718671 REV.6, [AN-11] H-2-71910 REV.3, [AN-12] H-2-71866 REV.2, [AN-13] H-4-03501 REV.2, [AN-14] H-2-71970 REV.8, [AN-15] H-2-71859 REV.8, [AN-16] H-2-71861 REV.8, [AN-17] H-2-71862 REV.8, [AN-18] H-2-71863 REV.1, [AN-19] H-2-71864 REV.8, [AN-20] H-2-71867 REV.6, [AN-21] H-2-72031, [AN-22] H-2-72032, [AN-23] H-2-72033, [AN-24] H-2-72034, [AN-25] H-2-71868, [AN-26] H-2-71869, [AN-27] H-2-71870, [AN-28] H-271811, [AN-29] H-2-71812, [AN-30] H-2-71813, [AN-31] H-2-73001, [AN-32] H-2-73002, [AN-33] H-2-73003, [AN-34] H-2-73004, [AN-35] H-2-73005, [AN-36] H-2-73006, [AN-37] H-2-73007, [AN-38] H-2-73008, [AN-39] H-2-73009, [AN-40] H-2-73010, [AN-41] H-2-73011, [AN-42] H-2-73012, [AN-43] H-2-71117, [AN-44] H-2-71844, [AN-45] H-2-72031, [AN-46] H-2-71878, [AN-47] 71898 |
|---|

TABLE 2
HAZARDS IDENTIFICATION CHECKLIST

| Facility | Type | A. Corrosive | B. Explosive/ Pyrophoric | C. Nuclear Criticality | D. Flammable Materials | E. Thermal Radiation | F. Chem. Reactive Forms. | G. Friction | H. Electrical | I. Kinetic Rotation | J. Kinetic Linear | K. Crack, Creep, Height | L. Pressure/ Volume | M. Thermal Inert Radiant | Comments |
|--|--------------|-----------------|--------------------------------|------------------------------|------------------------------|----------------------------|-----------------------------------|---------------------------------|------------------------------|---------------------------|-------------------------|----------------------------------|---------------------------|-----------------------------------|--|
| <i>Select applicable hazard from attached table and place corresponding hazard numbers in the boxes below.</i> | | | | | | | | | | | | | | | |
| <i>Legend: None -></i> | | | | | | | | | | | | | | | |
| AN TANK FARM | | | | | | | | | | | | | | | |
| 241-AN-101 | DST | 2 [b] | 6.7.8 [b] | 15 [b] | 11(b)(1) | NA | NA | 2(b)(3), 3(d)(b) | 4,6,9,10, 14 [b] | 2, 3 [b] | NA | 11 [c] | NA | NA | NA |
| 241-AN-102 | DST | 2 [b] | 6.7.8 [b] | 15 [b] | 11(b)(1) | NA | NA | 2(b)(3), 3(d)(b), 7(i)(b) | 4,6,9,10, 14 [b] | 3 [b] | (c)(b) | 11,15(b) c) | NA | NA | (1) Hydrogen not above LFL (2) Ammonia (3) Pump bearings |
| 241-AN-103 | DST | 2 [b] | 6.7.8 [b] | 15 [b] | 11(b)(1), 14(e)(2) | NA | NA | 2(b)(3), 3(d)(b), 7(i)(b) | 4,6,9,10, 14 (b),10(b) | 2,3 [b] | (c)(b) | 11,15(b) c) | NA | NA | AN-103 is a wrench tank (Hydrogen/ flammable gas). (a) Mixer pump motor (caustic additive) |
| 241-AN-104 | DST | 2 [b] | 6.7.8 [b] | 15 [b] | 11(b)(1), 14(e)(2) | NA | NA | 2(b)(3), 3(d)(b), 7(i)(b) | 4,6,9,10, 14 (b),10(b) | 2,3 [b] | (c)(b) | 11,15(b) c) | NA | NA | AN-104 is a wrench list tank (Hydrogen/ flammable gas) . (a) (b) Sealed camera units in the dome space (c) Camera motor |
| 241-AN-105 | DST | 2 [b] | 6.7.8 [b] | 15 [b] | 11(b)(1), 14(e)(2) | NA | NA | 2(b)(3), 3(d)(b), 7(i)(b) | 4,6,9,10, 14 (b),10(b) | 2,3 [b] | (c)(b) | 11,15(b) c) | NA | NA | AN-105 is a wrench list tank (Hydrogen/ flammable gas) . (a) (b) Mixer pump motor (c) Mixer pump motor |
| 241-AN-106 | DST | 2 [b],4 [b] | 6.7.8 [b] | 15 [b] | 11(b)(1) | NA | NA | 2(b)(3), 3(d)(b) | 4,6,9,10, 14 [b] | 3 [b] | (c)(b) | 11,15(b) c) | NA | NA | NA |
| 241-AN-107 | DST | 2 [b] | 6.7.8 [b] | 15 [b] | 11(b)(1), 14(e)(2) | NA | NA | 2(b)(3), 3(d)(b), 7(i)(b) | 4,6,9,10, 14 (b),10(b) | 2,3 [b] | (c)(b) | 11,15(b) c) | NA | NA | NA |
| COB-AM-1 | Cleanout box | 2 [b] | 6.7.8 [b] | NA | NA | NA | NA | NA | 4 [b] | NA | NA | NA | NA | NA | NA |
| COB-AM-2 | Cleanout box | 2 [b] | 6.7.8 [b] | NA | NA | NA | NA | NA | 4 [b] | NA | NA | NA | NA | NA | NA |
| COB-AM-3 | Cleanout box | 2 [b] | 6.7.8 [b] | NA | NA | NA | NA | NA | 4 [b] | NA | NA | NA | NA | NA | NA |
| COB-AM-4 | Cleanout box | 2 [b] | 6.7.8 [b] | NA | NA | NA | NA | NA | 4 [b] | NA | NA | NA | NA | NA | NA |

TABLE 2
HAZARDS IDENTIFICATION CHECKLIST

| Facility | Type | A- Corrosive | B- Explosive/ Pyrophoric | C- Nuclear Criticality | D- Flammable Materials | E- Thermal Radiation | F- Chem. Reactions | G- Friction | H- Electrical | I- Kinetic Rotation | J- Kinetic- Linear | K- Kinetic- Cross, Crash, Height | L- Pressure- Volume | M- Thermal (except radiant) | Comments |
|--|-----------------------------|-----------------|--------------------------------|------------------------------|---------------------------------|----------------------------|--------------------------|----------------|----------------------------|---------------------------|--------------------------|--|---------------------------|--------------------------------------|------------------------------------|
| <i>Select applicable hazards from attached table and place corresponding hazard numbers in the listed table.</i> | | | | | | | | | | | | | | | |
| Legend: None → | | | | | | | | | | | | | | | |
| COB-AN-5 | Cleanout box | 2 [B] | 6,7,8 [B] | NA | NA | NA | NA | NA | 4 [B] | NA | NA | NA | NA | NA | NA |
| COB-AN-6 | Cleanout box | 2 [B] | 6,7,8 [B] | NA | NA | NA | NA | NA | 4 [B] | NA | NA | NA | NA | NA | NA |
| COB-AN-7 | Cleanout box | 2 [B] | 6,7,8 [B] | NA | NA | NA | NA | NA | 4 [B] | NA | NA | NA | NA | NA | NA |
| COB-AN-8 | Cleanout box | 2 [B] | 6,7,8 [B] | NA | NA | NA | NA | NA | 4 [B] | NA | NA | NA | NA | NA | NA |
| COB-AN-9 | Cleanout box | 2 [B] | 6,7,8 [B] | NA | NA | NA | NA | NA | 4 [B] | NA | NA | NA | NA | NA | NA |
| 241-AN-273 | Compressor building | NA | NA | NA | NA | NA | NA | 1,2,3, 5 [B] | 4,7,8,9,1 0,11, 14 [B] | 2,3,4 [B] | 5 [B] | 7,13 [B] | 2,6 [B] | 1,3 [B] | NA |
| 241-AN-01D | Condensate receiver pit | NA | NA | NA | NA | NA | NA | NA | 4 [B] | NA | 5 [B] | 3 [B] | NA | NA | NA |
| 241-AN1 | Flush pit | NA | NA | NA | NA | NA | NA | NA | 4 [B] | NA | NA | NA | NA | NA | NA |
| 241-AN-271 | Instrument building | NA | NA | NA | NA | NA | NA | 2,3,5 [B] | 3,4,5, 6,7,8, 11,14, 16[B] | 2,4 [B] | NA | NA | NA | 3 [B] | [B] 480 V, considered high voltage |
| | Service pit | NA | NA | NA | NA | NA | NA | NA | 4 [B] | NA | NA | 10 [B] | NA | 3 [B] | NA |
| 241-AN-A | Valve pit | NA | NA | NA | NA | NA | NA | NA | 4 [B] | NA | 5 [B] | 3,10 [B] | NA | NA | NA |
| 241-AN-B | Valve pit | NA | NA | NA | NA | NA | NA | NA | 4 [B] | NA | 5 [B] | 3,10 [B] | NA | NA | NA |
| | Satellite accumulation area | 1, 2, 4 | NA | NA | 2, 10, 17[blank contact vented] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | Amalga pits (7) | NA | NA | NA | NA | NA | NA | 2,5 [B] | 4 [B] | 2,3 [B] | 5 [B] | 3 [B] | NA | NA | NA |
| | Leak detector pits (7) | NA | NA | NA | NA | NA | NA | 2,5 [B] | 4 [B] | 2,3 [B] | 5 [B] | 3 [B] | NA | NA | NA |

TABLE 2
HAZARDS IDENTIFICATION CHECKLIST

| Facility | Type | A. Corrosive | B. Explosive/ Pyrophoric | C. Nuclear Criticality | D. Flammable Materials | E. Thermal Radiation | F. Chem. Reactive | G. Friction | H. Electrical | I. Kinetic Rotation | J. Kinetic Linear | K. Max. Crash Height | L. Pressure Volume | M. Thermal Source (except radiant) | Comments |
|---|--|-----------------|--------------------------------|------------------------------|------------------------------|----------------------------|-------------------------|------------------|-------------------------|---------------------------|-------------------------|-------------------------------|--------------------------|--|----------------|
| <i>Select applicable hazards from attached table and place corresponding hazard numbers in this hazard table.</i> | | | | | | | | | | | | | | | |
| | Central pump pits (7) | NA | NA | NA | NA | NA | NA | 2,5 (b) | 4 (b) | 2,3 (b) | 5 (b) | 3 (b) | NA | NA | NA |
| 241-AM-01E | Supernate inverter pit (1) | NA | NA | NA | NA | NA | NA | NA | 4 (b) | NA | 5 (b) | 3 (b) | NA | NA | NA |
| 241-AM-274 | Ventilation pits (4) | NA | NA | NA | NA | NA | NA | NA | 4 (b) | NA | 5 (b) | 3 (b) | NA | NA | NA |
| | Caustic addition control building | 2 (b) | NA | NA | NA | NA | NA | 2,4 (b) | 4,9,10, 11 (b) | 2,3 (b) | NA | NA | NA | 3(b)(b) | (9) Heat trace |
| | Ventilation pad | NA | 6,7 (b) | NA | 11,14 (b) | NA | NA | 1,2,3,4,5 (b) | 4,6,10, 11,16 (b) | 2,4 (b) | NA | NA | NA | 3 (b) | NA |
| | Change trailer | NA | NA | NA | NA | NA | NA | NA | 4,6,11 (b) | NA | NA | NA | 5 (b) | 3 (b) | NA |

(A) OSD-T-151-00030 B-17
 (B) COG Engineer, Bob Nicholson, Bill Meacham, 4/4/98
 (C) Crane loads in farm, tank
 (d) Component part of Ventilation system

TABLE 3
UNIQUE PHENOMENA CHECKLIST

| Facility | Type | Flammable Gas | Ferroxydide | Organics | | | High Heat (>70,000 B TU/hr) | Pyrophorics | Siphoning | Criticality (> 1 g/L in solid) | Corrosivity (OH, HCl, HClO3) (See WHC-SD-T-151-0007) | Other | Comments |
|------------------------|------|---|---|--|--|--|--|--|--|---|--|-------|--|
| | | | | Separable Phase | TOC in liquids (> 10 g/L) | TOC in solids 3 wt% (dry basis) | | | | | | | |
| Legend: None -> | | | | | | | | | | | | | |
| AN FARM | | | | | | | | | | | | | |
| 241-AH-101 | DST | N Hodgson 1998 WHC-SD-WHER-526 Rev. 1 | N Borheim & Simpson 1981 WHC-SD-WHER-133 Rev. 0 | N Each 1986 WHC-SD-WM-DP-148 Rev. 1 | Does it solidify? (Yes/No) Provide references. | Does it solidify? (Yes/No) Provide references. | Does it solidify? (Yes/No) Provide references. | Does it solidify? (Yes/No) Provide references. | Does it solidify? (Yes/No) Provide references. | N Pu Inv Database (WHC140 /PLUTRYN) | N Tueler 1998 74A30-96-008 | NA | No known separable phase organics |
| 241-AH-102 | DST | N Hodgson 1998 WHC-SD-WHER-526 Rev. 1 | N Borheim & Simpson 1981 WHC-SD-WHER-133 Rev. 0 | N Each 1986 WHC-SD-WM-DP-165 Rev. 0 | Does it solidify? (Yes/No) Provide references. | Does it solidify? (Yes/No) Provide references. | Does it solidify? (Yes/No) Provide references. | Does it solidify? (Yes/No) Provide references. | Does it solidify? (Yes/No) Provide references. | N Pu Inv Database (WHC140 /PLUTRYN) | Y Tueler 1998 74A30-96-008 | NA | No known separable phase organics |
| 241-AH-103 | DST | Y Hodgson 1998 WHC-SD-WHER-526 Rev. 1 | N Borheim & Simpson 1981 WHC-SD-WHER-133 Rev. 0 | N Tosta 1987 PNL letter WHG-74A30-96-008 Richmond | Does it solidify? (Yes/No) Provide references. | Does it solidify? (Yes/No) Provide references. | Does it solidify? (Yes/No) Provide references. | Does it solidify? (Yes/No) Provide references. | Does it solidify? (Yes/No) Provide references. | N Pu Inv Database (WHC140 /PLUTRYN) | N Tueler 1998 74A30-96-008 | NA | No known separable phase organics Currently on Hydrogen Watch List |
| 241-AH-104 | DST | Y Hodgson 1998 WHC-SD-WHER-526 Rev. 1 | N Borheim & Simpson 1981 WHC-SD-WHER-133 Rev. 0 | N Reynolds 1984 WHC-EP-0717 | Does it solidify? (Yes/No) Provide references. | Does it solidify? (Yes/No) Provide references. | Does it solidify? (Yes/No) Provide references. | Does it solidify? (Yes/No) Provide references. | Does it solidify? (Yes/No) Provide references. | N Pu Inv Database (WHC140 /PLUTRYN) | N Tueler 1998 74A30-96-008 | NA | No known separable phase organics Currently on Hydrogen Watch List |

TABLE 3
UNIQUE PHENOMENA CHECKLIST

| Facility | Type | Flammable Gas | Ferrocyanide | Organics | | | High Heat (>70,000 BTU/hr) | Pyrophorics | Spinning | Criticality (> 1 g/L in solids) | Comorbidity (OH, MO2,NO3) limits in OSD-T-151-0007 | Other | Comments |
|-----------------|------|--|---|--------------------------------------|--------------------------------------|--------------------------------------|-------------------------------------|---|--|---------------------------------|--|-------|---|
| | | | | Separable Phase | TOC in liquids (> 10 g/L) | TOC in solids 3 wt% (dry basis) | | | | | | | |
| Legend Issues-> | | | | | | | | | | | | | |
| 241-AH-106 | DST | Y Hodgson 1986 WHC-SD-WM-ER-526 Rev. 1 | N Borshelm & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0 | Does it sink? Provide references. | Does it sink? Provide references. | Does it sink? Provide references. | N Tuiler 1996 74A30-96-008 | N personal communications Dan with Reynolds | Unknown or currently unobscure rtd (1) | N Pu Inv Database (PLUTNY) | N Tuiler 1996 74A30-96-008 | NA | No known separable phase organics Currently on Hydrogen Watch List |
| 241-AH-108 | DST | N Hodgson 1986 WHC-SD-WM-ER-526 Rev. 1 | N Borshelm & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0 | Does it sink? Provide references. | Does it sink? Provide references. | Does it sink? Provide references. | N Tuiler 1996 74A30-96-008 | N personal communications Dan with Reynolds | Unknown or currently unobscure rtd (1) | N Pu Inv Database (PLUTNY) | N Tuiler 1996 74A30-96-008 | NA | No known separable phase organics |
| 241-AH-107 | DST | Y Hodgson 1986 WHC-SD-WM-ER-526 Rev. 1 | N Borshelm & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0 | Does it sink? Provide references. | Does it sink? Provide references. | Does it sink? Provide references. | N Tuiler 1996 74A30-96-008 | N personal communications Dan with Reynolds | Unknown or currently unobscure rtd (1) | N Pu Inv Database (PLUTNY) | Y Tuiler 1996 74A30-96-008 | NA | Tank filled the flammable gas vented to gas flare WHC-SD-0703 Rev. 0 O ₂ Tested with watch list controls pending further direction from DOE (OSD-T-151-00030, B-20) |

TABLE 3
UNIQUE PHENOMENA CHECKLIST

- [1] Group Hazards Analysis performing independent siphoning evaluation study.

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/present | Operable | Equipment Condition | Comments |
|---|-----------------------------------|--|--|--|---|
| Legend | Supply any associated ID numbers. | Is equipment suitable? <i>yes/no. Provide reference.</i> | Is equipment operable? <i>yes/no. Provide reference.</i> | Equipment condition. <i>Provide reference.</i> | Notes, descriptive information, etc. |
| Tanks AN 101-107 | | | | | |
| Tank Waste Instrumentation | | | | | |
| Specific gravity instr. system | NA | No | No | NA | NA |
| Temperature probe (T.C. Tree) | NA | Yes [wd1] [AN14-20] | Yes [wd1] | NA | NA |
| Liquid level (Primary) | NA | Yes [wd1] [AN14-20] | Yes [wd1] | NA | Tanks with PCs: 101, 102, 106, 107. Tanks AN 103, 104, and 106 have EMRAPS for liquid level. These are watch list tanks. Tank AN 107 has also been added to the watch list. AN 107 has 2 EMRAPS, used as densimeters to measure density; it has no EMRAP yet for level measurement. [wd1] |
| Liquid level (Backup) | NA | Yes [wd1] [AN14-20] | Yes [wd1] | NA | Manual tapes. [wd1] |
| High level probe | NA | Yes [AN14-20] | See comment | NA | Operable on the following tanks: 101, 102, 106. Disconnected because of watch list status: 103, 104, 106 [and soon 107]. [wd1] |
| Tank primary vapor space pressure monitor | NA | Yes [AN41] | Yes [AN41] | NA | NA |
| Gas monitoring / SHMS | AN-103, 104, 105 | Yes [wd1] [AN1] | Yes [wd1] | NA | NA |
| Mass spectrometer | AN-106 only | Yes [wd1] [AN7] | Yes [wd1] [AN7] | NA | For gas characterization |
| TMACS | NA | Yes [wd1] | Yes [wd1] | NA | For pressure and temperature |
| Multi-function instrument tree (MIT) | AN-103, 104, 105 | Yes [wd1] | Yes [wd1] | NA | NA |
| TV Cameras | AN-103, 104, 105 | Yes [wd1] | Yes [wd1] | NA | Cameras have a special SS cover block for the multi-port clear. [wd1] Cameras have local control stations. [wd1] AN-107 has a TV monitor, but it is not intrinsically safe, so AN-107 is being treated as a watch list tank. [2] |
| Vapor sampler | AN-103, 104, 105 | Yes [wd1] | See comment | NA | For flammable gas tanks, temporarily stored in AN Farm. [wd1] |
| Sludge level Indicator | NA | Yes [AN14-20] | NA | NA | Many sludge level indicators are missing. Sludge level can be taken by bringing sludge level measuring equipment into the farm. [wd1] |

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/present | Operable | Equipment Condition | Comments |
|---------------------------------------|------------------------------------|---|---|---|---|
| Legend | Specify any associated ID numbers. | is equipment existing? Provide reference. | is equipment operable? Provide reference. | Equipment condition. Provide reference. | Notes, applicable alternatives, etc. |
| Tank Annulus Instrumentation | | | | | |
| Leak detection manual type | NA | NA | NA | NA | See leak detection conductivity probe. |
| CAM Red Monitor | NA | Yes [AN42] | Yes [AN42] | NA | NA |
| Pump pit leak detection | NA | Yes [wd1] | Yes [wd1] | NA | NA |
| Leak detection conductivity probe | NA | Yes [wd1] [AN14-20] | Yes [wd1] | NA | NA |
| Temperature | NA | NA | NA | NA | See thermocouples. |
| Tank annulus pressure gauge | NA | Yes [wd1] | Yes [wd1] | NA | Gauges are not regularly calibrated. [wd1] |
| Tank Structure Instrumentation | | | | | |
| Thermocouple data acquisition | 9 each | Yes [AN-13] | Yes [AN-13] | NA | Insulating concrete below primary tank [AN13] |
| Thermocouple data acquisition | 18 each | Yes [AN-13] | Yes [AN-13] | NA | Concrete dome of secondary tank [AN13] |
| Thermocouple data acquisition | 30 each | Yes [AN-13] | Yes [AN-13] | NA | Concrete wall of secondary tank [AN13] |
| Instrument Enclosures | NA | Yes [wd1] | Yes [wd1] | NA | NA |
| Air lift circulators | AN-107 | Yes [wd1] | Yes [wd1] | NA | NA |
| Steam coil | NA | NA | NA | NA | Steam has been locked to AN Farm [wd1] |
| Calson | NA | NA | NA | NA | NA |

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/present | Operable | Equipment Condition | Comments |
|---|--|--|--|--|---|
| <i>Legend</i> | <i>Supply any associated ID numbers.</i> | <i>In equipment existing profile. Provide reference.</i> | <i>In equipment operable profile. Provide reference.</i> | <i>Equipment condition. Provide reference.</i> | <i>Notes, diagnostic information, etc.</i> |
| HVAC Systems | | | | | |
| Ventilation System(s) | K1, K2 | Yes [wd1] | Yes [wd1] | See comment | AN tank farm electrical system is rated as "adequate", 5. The primary and annulus duct assemblies are rated as "adequate", 7. The above-ground annulus duct condition is rated as "adequate", 8. [D1] |
| -Passive | NA | Yes [wd1] | Yes [wd1] | NA | Annul have filtered intake [wd1]. Primary intakes will be installed on all tanks [1] |
| -Active | Yes [wd1] [AN1] | Yes [1] [wd1] [AN1] | Yes [1] [wd1] | NA | K1: 2 tanks [wd1] [AN1] K2: 2 tanks [wd1] [AN1] |
| -Shared / common vent system? (Describe in comments section) | NA | Yes [wd1] [AN1] | Yes [wd1] [AN1] | NA | Exhaust pipe es. tank routed to common plenum at exhaust station [AN1] |
| -Exhaust vent/ductway | No [AN1] | No [wd1] | No [wd1] | NA | The access ports to the HEPA filters are properly sealed. [wd1] |
| -Annulus air intake assemblies | K2 | Yes [wd1] | Yes [wd1] | NA | AN-2 1 HEPA, 1 prefilter [AN1] |
| -Primary air intake assemblies | NA | No [wd1] [AN1] | NA | NA | To be installed [1] |
| -Pre-filters (yes/no) | NA | Yes [wd1] | Yes [wd1] | NA | NA |
| -HEPA filters (how many filters, stages, parallel vs series etc.) | NA | Yes [wd1] | Yes [wd1] | See comment | The annulus HEPA filter banks are rated as "fair", 5. The primary HEPA filters are rated as "good", 8. [D1] Primary HVAC: There are two stages of 4 HEPA's each. [wd1] Annulus HVAC: There are two stages of 2 HEPA's each. [wd1] |
| -Fans | NA | Yes [wd1] | Yes [wd1] | See comment | AN tank farm annulus fans electrical system is rated "adequate", 8. The primary exhaust fan assemblies are rated as "fair", 8. The K2-B-1 exhaust fan is rated as "fully capable", 10. The K2-B-2 exhaust fan is rated as "poor", 4, because of its inability to operate to original design. [D1] |
| -De-entrainers | NA | Yes [wd1] | Yes [wd1] | NA | 1 es tank [wd1] [AN1] |
| -Demister pit | NA | Yes [AN4] | NA | NA | Located edge of AN-105 adjacent to central exhaust system. Also called the demister pit. [AN4] |
| -Heaters | NA | Yes [AN1] | See comment | NA | 1 es. tank [AN1] Electric heaters are often broken, and are not usually needed. [1] |

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/present | Operable | Equipment Condition | Comments |
|----------------------------------|-----------------------------------|---|---|---|--|
| Legend | Supply any associated ID numbers. | In equipment existing profile. Provide reference. | In equipment operable profile. Provide reference. | Equipment condition. Provide reference. | Notes, electrical schematics, etc. |
| HVAC Instrumentation | | | | | |
| Main stack monitor | NA | Yes [wd1] [AN1] | Yes [wd1] | NA | SHMS to be installed on the main exhaust stack. [wd1] |
| Primary Tank pressure | NA | Yes [wd1] [AN1] | Yes [wd1] [AN1] | NA | Measured in tank head. |
| Differential pressure indicators | NA | Yes [wd1] [AN1] | Yes [wd1] [AN1] | NA | Across all HEPAs |
| Temperature indicators | NA | Yes [AN1] | Yes [AN1] | NA | Across heaters |
| Stack flow meter | K1.2 | Yes [AN1] | Yes [AN1] | NA | Stack flow meter results are usually not used. Vent and Balance testing is used. [1] |
| Primary Seal Pot | NA | Yes [ANS] | Yes [ANS] [1] | NA | For stack plenum condensate drain lines. |
| -Leve element | NA | No [AN1,4] | NA | NA | NA |
| -Drain | NA | Yes [AN1,4] | Yes | NA | Assumed operable. |
| -Heat trace | NA | Yes [ANS] | Yes | NA | Assumed operable. |
| Annulus Seal Pot Pt | NA | Yes [AN1,4] | Yes [AN1,4] [1] | NA | NA |
| -Leve element | NA | No [AN4] | NA | NA | NA |
| -Drain | NA | Yes [ANA] | Yes | NA | Assumed operable. |
| Ventilation Pt | | | | | |
| Ventilation Pt #1 | AN-102, 103 | Yes [1] [ANS] | Yes [ANS] [1] | NA | NA |
| - Annulus duct pressure | NA | Yes [ANS] | Yes [ANS] [1] | NA | NA |
| - CAM | NA | Yes [ANS] | Yes [ANS] [1] | NA | Annulus leak detection CAM. |
| -Flow control valve | NA | Yes [ANS] | Yes [ANS] [1] | NA | NA |

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/present | Operable | Equipment Condition | Comments |
|--------------------------|--|--|---|---|---|
| <i>Legend</i> | <i>Supply any associated ID numbers.</i> | <i>In equipment status. Provide reference.</i> | <i>In equipment operable status. Provide reference.</i> | <i>Equipment operable. Provide reference.</i> | <i>Notes, descriptive information, etc.</i> |
| Ventilation PK #2 | AN-101.104 | Yes [ANS] | Yes [ANS] [I1] | NA | |
| -Annulus duct pressure | NA | Yes [ANS] | Yes [ANS] [I1] | NA | NA |
| -CAM | NA | Yes [ANS] | Yes [ANS] [I1] | NA | Annulus leak detection CAM. |
| -Flow control valve | NA | Yes [ANS] | Yes [ANS] [I1] | NA | NA |
| Ventilation PK #3 | AN-105.106 | Yes [ANS] | Yes [ANS] [I1] | NA | NA |
| -Annulus duct pressure | NA | Yes [ANS] | Yes [ANS] [I1] | NA | NA |
| -CAM | NA | Yes [ANS] | Yes [ANS] [I1] | NA | Annulus leak detection CAM. |
| -Flow control valve | NA | Yes [ANS] | Yes [ANS] [I1] | NA | NA |
| Ventilation PK #4 | AN-107 | Yes [ANS] | Yes [ANS] [I1] | NA | NA |
| -Annulus duct pressure | NA | Yes [ANS] | Yes [ANS] [I1] | NA | Annulus leak detection CAM. |
| -CAM | NA | Yes [ANS] | Yes [ANS] [I1] | NA | NA |
| -Flow control valve | NA | Yes [ANS] | Yes [ANS] [I1] | NA | NA |
| Ventilation treatment PK | | | | | |
| - Drains | Pks 1,2,3 No for pk 4 | Yes [AN 21,22] | Yes | NA | Assumed operable. |
| Pits | | | | | |
| Annulus Pump PK | NA | Yes [I1] | Yes [I1] | NA | NA |
| -Floor drain | NA | Yes [ANS] | Yes [I1] | NA | NA |
| -Sump | NA | No [ANS] | NA | NA | NA |
| -Leak detection | NA | Yes [wd1], [ANS] | Yes [wd1] | NA | NA |
| -Riser spray / fng | NA | Yes [ANS] | Yes | NA | Assumed operable. |

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/present | Operable | Equipment Condition | Comments |
|-------------------------------------|-----------------------------------|---|---|---|--|
| Legend | Supply any associated ID numbers. | If equipment existing. Provide reference. | If equipment operable. Provide reference. | Equipment condition. Provide reference. | Show descriptive information, etc. |
| -Control Pump PK | NA | Yes [I1] [wd1] | Yes [I1] | NA | NA |
| -Leak detection | NA | Yes [wd1] [AN23] | Yes [wd1] | NA | NA |
| -Floor drain | NA | Yes [AN24] | Yes | NA | Assumed operable. |
| -Check Valve | NA | Yes [AN24] | Yes | NA | Assumed operable. |
| -Portable pH spray (1" RW) | NA | Yes [AN24] | Yes | NA | Assumed operable. |
| -Distributor PK | NA | NA | NA | NA | NA |
| -Skid PK | NA | NA | NA | NA | NA |
| -Heel PK | NA | No | NA | NA | NA |
| -Leak detection pump pH | NA | Yes [I1] | Yes [I1] | NA | NA |
| -Level sensing system (SpG-WF sump) | NA | Yes [wd1] [AN13] | Yes, except for AN-103 [wd1] | NA | The SpG-WF on AN-103 is plugged; a zip cord is used instead. [wd1] SpG readings are no longer taken. [I2] |
| -Radiation monitor (sump) | NA | Yes [AN13] [I1] | Yes | NA | Assumed operable. |
| -Leak detection system (pit) | NA | Yes [wd1] [AN13] | Yes [wd1] | NA | NA |
| -Temperature | NA | Yes [AN10] | Yes [wd1] | NA | Temp. well in leak pit [AN10] |
| -Well | NA | Yes [AN13] | Yes | NA | Assumed operable. |
| -Drain | NA | Yes [AN10] | Yes | NA | Assumed operable. |

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/present <i>In equipment existing, provide reference.</i> | Operable <i>In equipment operable, provide reference.</i> | Equipment Condition <i>Equipment condition, provide reference.</i> | Comments |
|----------------------------|--|--|--|---|---|
| <i>Legend</i> | <i>Supply any associated ID numbers.</i> | <i>In equipment existing, provide reference.</i> | <i>In equipment operable, provide reference.</i> | <i>Equipment condition, provide reference.</i> | <i>Notes, describe references, etc.</i> |
| -Riser spray | NA | Yes [AN10] | Yes | NA | Assumed operable. |
| Dry wells | NA | NA | NA | NA | There are no dry wells in AN Farm. [wd1] |
| Condensate Receiver pH | 01D | Yes [wd1] | Yes [wd1] | NA | Located on Tank AN-101 [wd1] |
| -Leak detection | NA | Yes [I1] [wd1] | Yes [I1] [wd1] | NA | NA |
| Sludge pump pH | NA | No | NA | NA | NA |
| Salt well pump pH | NA | No | NA | NA | NA |
| Drain pH | NA | No [wd1] [I1] | NA | NA | The valve pits drain directly to 101 AN. [I1] |
| Valve Pits (2) | AN-A, AN-B | Yes [I1] [wd1] | Yes [wd1] | NA | NA |
| -Leak detection | NA | Yes [wd1] [AN23,37,39] | Yes [wd1] | NA | NA |
| -Valve position Indication | NA | yes [I1] | yes [I1] | NA | Manual valve position indication. |
| -Pipeline flow monitoring | NA | NA | NA | NA | NA |
| -Drain | NA | Yes [AN3B] | Yes | NA | Assumed operable. |
| -Steam | NA | No [wd1] | NA | NA | Steam has been isolated to the AN Farm. [wd1] |
| -Pressure switches | NA | NA | NA | NA | NA |
| -Drain line flow alarm | NA | NA | NA | NA | NA |

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/present | Operable | Equipment Condition | Comments |
|---------------------|---|--|--|--|--|
| <i>Legend</i> | <i>Supply any associated ID numbers</i> | <i>In equipment existing profile. Provide reference.</i> | <i>In equipment operable profile. Provide reference.</i> | <i>Equipment condition. Provide reference.</i> | <i>Notes, description, information, etc.</i> |
| Churn Out Buses | COB 1-9 [wd1] | Yes [wd1] | Yes [wd1] | NA | SAR Ch. 2 shows 6 COBs |
| -Leak Detection | NA | Yes [wd1] [AN23,39] | Yes [wd1] | NA | NA |
| Feed Pump Pk | NA | No | NA | NA | NA |
| Mixer Pump Pk | NA | NA | NA | NA | NA |
| Service Pk | NA | Yes [I1] [wd1] | Yes [wd1] | NA | NA |
| -Flow monitoring | NA | Yes [wd1] [AN37] | Yes [wd1] | NA | NA |
| -Rad monitor | NA | Yes [wd1] [AN37] | Yes [wd1] | NA | NA |
| -Backflow preventer | NA | Yes [wd1] | Yes [wd1] | NA | NA |
| -Leak detection | NA | Yes [wd1] [AN37] | Yes [wd1] | NA | NA |
| -Pressure Gauges | NA | Yes [wd1] [AN37] | Yes [wd1] | NA | NA |
| -Sump | NA | No [wd1] [AN30] | No [wd1] [AN30] | NA | NA |
| -Drain | NA | Yes [wd1] | Yes | NA | Assumed operable. |
| -Sump level element | NA | No [AN30] | No | NA | Assumed operable. |
| -Heater | NA | NA | NA | NA | NA |
| Flush pit | 241-AM | Yes [I1] | Yes [I1] | NA | NA |
| -Flow monitoring | NA | NA | NA | NA | NA |

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/present If equipment suitable, provide reference. | Operable If equipment operable, provide reference. | Equipment Condition Equipment suitable. Provide reference. | Comments |
|------------------------|--|---|---|---|--|
| <i>Legend</i> | <i>Supply any associated ID numbers.</i> | <i>If equipment suitable, provide reference.</i> | <i>If equipment operable, provide reference.</i> | <i>Equipment suitable. Provide reference.</i> | <i>Notes, describe instruments, etc.</i> |
| -Leak detection | NA | Yes [wd1] [AN23,30] | Yes [wd1] | NA | NA |
| -RW pressure switch | NA | Yes [AN30] | Yes | NA | Assumed operable. |
| -Drain | NA | Yes [AN30,40] | Yes | NA | Assumed operable. |
| -Sump | NA | NA | NA | NA | NA |
| -Level element | NA | NA | NA | NA | NA |
| -Heater | NA | Yes [2] | Yes | NA | Assumed operable. |
| -Radiation monitor | NA | NA | NA | NA | NA |
| -Steam | NA | No | NA | NA | Steam has been isolated to the AM Farm. [wd1] |
| Supernats Receiver Pit | O/E | Yes [wd1] | Yes [wd1] | NA | Located on Tank AN-101 [wd1] |
| - Leak detection | NA | Yes [wd1] | Yes [wd1] | NA | NA |
| Transfer Piping | | | | | |
| Transfer Lines | AN-B | Yes [wd1] | Yes [wd1] | NA | There are 4 leak detectors at valve pit AN-B for the encasement line. [wd1] |
| Buildings | | | | | |
| Compressor Building | 241-AN-273 | Yes [wd1] | Yes [wd1] | See comment | The physical condition of Joy compressor SA-CMP-101 is rated "good". B. (D1) |
| -Holding Tanks | NA | NA | NA | NA | NA |
| - Receiver tank | NA | Yes [wd1] | Yes [wd1] | NA | NA |
| -Air dryer | NA | Yes [wd1] | Yes [wd1] | NA | NA |

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/present | Operable | Equipment Condition | Comments |
|---|----------------------------------|---|---|--------------------------------------|---|
| Legend | Supply any associated ID numbers | Is equipment existing present. Provide reference. | Is equipment operable present. Provide reference. | Equipment status. Provide reference. | Notes, describe information, etc. |
| -Flammable storage cabinet | NA | No [wd1] | NA | NA | NA |
| -Instrument building | 241-AN-271 | Yes [wd1] | Yes [wd1] | NA | NA |
| -TMACS connection | NA | Yes [wd1] | Yes [wd1] | NA | Measures pressure and temperature [11] |
| -CAM | NA | Yes [wd1] | Yes [wd1] | NA | NA |
| -Remote alarm location(s) (describe in comment section) | NA | Yes [wd1] | Yes [wd1] | NA | Remote signals to TMACS. [wd1] |
| -TV monitor | AN-103, 104, 105 | Yes [wd1] | Yes [wd1] | NA | NA |
| -Heat trace | NA | Yes [wd1] | Yes [wd1] | NA | NA |
| -Viscometer | NA | Yes [wd1] | See comment | NA | Temporarily located inside the fence near the air compressor building. (Used for all facilities. [wd1]) |
| -Area radiation monitors (4 in tank farm) | NA | Yes [wd1] | Yes [wd1] [11] | NA | The ARMs will soon be disconnected. [2] |
| Steam | | | | | |
| -Steam traps | NA | No | NA | NA | Steam has been isolated to the AN Farm. [wd1] |
| Miscellaneous Facilities | | | | | |
| Electrical Substation | NA | Yes [wd1] | Yes [wd1] | NA | NA |
| Motor Control Station | NA | Yes [wd1] | Yes [wd1] | NA | NA |
| Bottle Storage Area | NA | No [wd1] | NA | NA | NA |

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/present | Operable | Equipment Condition | Comments |
|---|--|--|--|--|---|
| Legend | Supply any associated ID numbers. | Is equipment existing? Provide reference. | Is equipment operable? Provide reference. | Equipment condition. Provide reference. | Notes, description, photographs, etc. |
| Heat Trace Transformer/Panck | NA | Yes [wd1] | Yes [wd1] | NA | NA |
| Change Trailer | NA | Yes [wd1] | Yes [wd1] | NA | NA |
| Mixer Pump AN-107 (Caustic Addition) Building | For Tank AN-107 | Yes [1] [wd1] | Yes [wd1] | NA | Caustic building contains a TV monitor for AN-107 [wd1] |
| Caustic Addition Control Bldg. | AN-274 | Yes [1] [wd1] | Yes [wd1] | NA | NA |
| Benlate Accumulation Area (6 drums) | NA | Yes [1] [wd1] | Yes [1] [wd1] | NA | NA |
| Control Box | NA | Yes [wd1] | See comment | NA | Contents not known |
| Two small buildings roped off for mud buffer area | NA | Yes [wd1] | See comment | NA | Contents not known |

[1] Interview with Cognizant Engineer, Bill Meuwissen and Bob Nicholson, 4/4/98

[2] Cognizant Engineer comments, 5/26/98 Bob Nicholson

[3] Condition Assessment Survey

[4a] Walkdown of AN Tank Farm, 4/12/98; Christie Zaccaro, P.K. Brodman, Bob Nicholson, Ron Reed, Susanne Lindberg

[AN-1] H-2-710520 REV/2, [AN-2] H-2-710570 REV/1, [AN-3] H-2-71032820 REV/2, [AN-4] H-2-80035 REV/2, [AN-5] ECH W-399-42 1022695, [AN-6] H-2-85390 REV/0, [AN-7] ECH W-461-2 1002695, [AN-8] H-2-85390 REV/0, [AN-9] H-2-85390 REV/1, [AN-10] H-2-710520 REV/2, [AN-11] H-2-710510 REV/3, [AN-12] H-2-710510 REV/2, [AN-13] H-2-710510 REV/1, [AN-14] H-2-71070, REV/8, [AN-15] H-2-71050 REV/8, [AN-16] H-2-71050 REV/8, [AN-17] H-2-71052 REV/8, [AN-18] H-2-71053 REV/1, [AN-19] H-2-71054 REV/1, [AN-20] H-2-71057 REV/8, [AN-21] H-2-72002, [AN-22] H-2-72002, [AN-23] H-2-72002, [AN-24] H-2-71045, [AN-25] H-2-71050, [AN-26] H-2-71050, [AN-27] H-2-71052, [AN-28] H-2-71052, [AN-29] H-2-71052, [AN-30] H-2-72001, [AN-31] H-2-72002, [AN-32] H-2-78003, [AN-33] H-2-78003, [AN-34] H-2-71050, [AN-35] H-2-71050, [AN-36] H-2-71050, [AN-37] H-2-71054, [AN-38] H-2-72001, [AN-39] H-2-71070, [AN-40] H-2-71050, [AN-41] H-2-20011/3,4 REV/2, [AN-42] H-2-20011/2,3 REV/0

TABLE 5
RADIATION SOURCE/PHYSICAL PROTECTION

| System | System ID | Radiation Source ≥ 100mR/yr | Protective Feature | Description of Protective Feature | Comments |
|----------------------------|--|--|--|--|--|
| Legend Source -> | List any unassigned ID numbers. | Source or Isotope > 100mR/yr? Yes or no. | Physical features shielding unassigned, tank, etc.) | Thickness of unassigned, number of penetrations, etc. Provide references. | Notes |
| Tanks | 101-107 | Yes | Soil/gravel Cover | ≤ 7 ft above tank dome crown (D1) | Soil cover monitored for shading/fooding |
| Central pump pits | 01A-07A | Yes | Cover block | 1"8" thick conc; Penetrations: 1-42", 1-12", 1-4" [AN28] [wd1] | 7 central pump pits |
| Annulus pump pits | 01B-07B | Yes | Cover block | 1"8" thick conc; Penetrations: 1-12", 1-4" [AN28] [wd1] | 7 annulus pump pits |
| Leak detection pump pits | 01C-07C | Yes | Cover block | 1"8" thick conc; Penetrations: 1-4", 1-8" [AN28] [wd1] | 7 leak detection pits |
| Drain pit | 01D, 02D | Yes | Cover block | 1"8" thick conc; 2 penetrations [AN28] | 2 drain pits |
| Supernate receiver pit | 01E | Yes | Cover block | 1"8" thick conc; 1 penetration [AN28] | 1 supernate receiver pit |
| Other pits | | | | | |
| Valve pit | AN-A | Yes | Cover block | 1"8" thick conc; [AN31] | 1 valve pit |
| Valve pit | AN-B | Yes | Cover block | 1"8" thick conc; [AN31] | 1 valve pit |
| Flush pit | 241-AN | Potentially yes | Metal plate | 1/4 ga sheet metal cover [AN30] | 1 flush pit |
| Service pit | NA | No [wd1] | Grating floor | Open grating [AN32] | Service pit inside shed with grated floor |
| Chlorine out box | AN 1-9 | No | Metal plate | 12 ga sheet metal [AN33] | 9 COBs |
| Vent pits | AN #1,2,3,4 | Yes | Cover block | 8" thick conc; [AN22] | 4 vent pits. The vent pits are extended about once a month for Vent and Balance work. The frequency is being decreased to quarterly. [1] |
| Denitrifier pit | T4-AN | Yes | Metal plate | 1.5" steel plate cover [AN4] | 1 denitrifier pit |
| Primary seal pot pit | For K1 system | Yes | Cover block | 6.5" thick concrete [AN3] | 1 seal pot |

TABLE 5
RADIATION SOURCE/PHYSICAL PROTECTION

| System | System ID | Radiation Source ≥ 100mSv/hr | Protective Feature | Description of Protective Feature | Comments |
|------------------------------------|--|---|--|--|---|
| <i>Legend Issues -></i> | <i>List any associated ID numbers.</i> | <i>Source of hazard ≥ 100mSv/hr? Yes or No.</i> | <i>Physical features (shielding, enclosures, interlocks, etc.) Provide references (book, etc.)</i> | <i>Thickness of structural, number of penetrations, etc. Provide references.</i> | <i>Notes</i> |
| Steam System | | | | | |
| -Steam traps | NA | NA | NA | NA | There is no steam to the AN Farm. [wd1] |
| HVAC | | | | | |
| -Tank Ventilation Systems | K1/K2 [wd1] | Yes | K1 and K2 HEPA filters and de-entrainers. | Metal duct housing; the access ports are properly sealed. [wd1] | Primary : two stages of 4 HEPA's each. Anculus: two stages of 2 HEPA's each. One de-entrainer each stage. [wd1] WHC-SD-WM-EMER-0011, Rev. 4 HEPA elements are used in the primary HEPA filters for the DCRT stack 296-A-2B . |
| -Other Ventilation Systems | NA | NA | NA | NA | NA |
| Transfer Lines | NA | NA | NA | NA | See Table 7. |
| Dry walls | NA | NA | NA | NA | There are no dry walls in AN Farm. [wd1] |
| Buildings | | | | | |
| -Compressor Building | AN-273 | No [wd1] | NA | NA | The compressor building contains the air compressor and receive tanks. [wd1] |
| -Inertment Building | AN-271 | No [wd1] | Radiation monitor | CAM | NA |
| -Service Building | AN-273 | No [wd1] | Radiation monitor | CAM | NA |
| -Change trailer | MO-820 | No [wd1] | Radiation monitor | PCM1-B, HPT equipment [wd1] | Change trailer controlled by HFTs. [wd1] |
| -Caustic addition control building | AN-274 | No [wd1] | NA | NA | There is no rad source for the caustic addition building [wd1] |

TABLE 5
RADIATION SOURCE/PHYSICAL PROTECTION

Tank Farm or Miscellaneous Facility AN Tank Farm

| System | System ID | Radiation Source ≥ 100mCi/yr | Protective Feature | Description of Protective Feature | Comments |
|---|---------------------------------------|--|---|---|--|
| <i>Legend Issues -></i> | <i>List any associated ID numbers</i> | <i>Source or highest 2 (06/01/97) Yrs of mCi</i> | <i>Physical features (building, concrete, lead, etc.)</i> | <i>Thickness of shielding, number of penetrations, etc. Provide references.</i> | <i>None</i> |
| -Two small buildings roped off for red buffer area. | Buildings do not have IDs. | No [red] | See comment | NA | Buildings are controlled by HPTs. [red] |
| -Satellite accumulation area | No ID. | No [red] | See comment | NA | Inventories removed when filled, transported to 206-E 80 day storage facility. |
| -Camera station | AN-103 | No [red] | Cover plate | SS cover plate; Penetrations: 2-8", 1-18", 1-24" [red] | NA |

(1) OSD-T-151-00007, Rev. H-17
 (red) Walkdown of AN Tank Farm, 4/12/98; Charlotte Zaccaro, P.K. Brockman, Bob Nicholson, Ron Reed, Susanna Lindberg
 (II) Comments from Consultant Engineer, Bob Nicholson, 5/28/98
 [AN-1] H-2-71935/2 REV 2, [AN-2] H-2-71937/2 REV 1, [AN-3] H-2-7193336/3 REV 2, [AN-4] H-2-90635 REV 2, [AN-5] ECN W-368-42 10/26/95, [AN-6] H-2-95396 REV 0, [AN-7] ECN W 451-2 1/9/96, [AN-8] H-14-02020/3 REV 0, [AN-9] H-2-71989/1 REV 3, [AN-10] H-2-71987/1 REV 6, [AN-11] H-2-71910, REV 3, [AN-12] H-2-71905 REV 2, [AN-13] H-14-020601 REV 2, [AN-14] H-2-71979, REV 6, [AN-15] H-2-71980 REV 9, [AN-16] H-2-71981 REV 8, [AN-17] H-2-71982 REV 8, [AN-18] H-2-71983 REV 1, [AN-19] H-2-71984, REV 8, [AN-20] H-2-77037 REV 6, [AN-21] H-2-72031, [AN-22] H-2-72042, [AN-23] H-2-71946, [AN-24] H-2-71996, [AN-25] H-2-71910, [AN-26] H-271811, [AN-27] H-2-71912, [AN-28] H-2-71913, [AN-29] H-2-73791, [AN 30] H-2-72001, [AN-31] H-2-72002, [AN-32] H-2-76606, [AN-33] H-2-72003, [AN-34] H-2-71936, [AN-35] H-2-71932, [AN-36] H-2-71117, [AN-37] H-2-71944, [AN-38] H-2-72031, [AN-39] H-2-71978, [AN-40] 71989

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AN

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|--------------------------------|-------------------|-----------|---|--------------|----------|
| Tanks AN 101-107 | NA | NA | NA | NA | |
| Tank Waste Instrumentation | NA | NA | NA | NA | |
| Specific gravity instr. system | NA | NA | NA | NA | |
| Temperature probes (T.C Tree) | WHC-SD-WM-OSR-016 | SL 2.2 | TF-OR-A-03 TF-OR-EF-AN TF-OR-WST-01-D TF-OR-WST-01-W TO-001-084 TO-001-180 TO-020-585 TO-040-035 TO-040-200 TO-040-660 TO-060-230 TO-200-460 TO-200-464 TO-220-019 TO-220-027 TO-220-065 TO-220-066 TO-220-068 TO-230-066 TO-230-133 TO-230-141 TO-230-142 TO-230-143 TO-230-144 TO-230-274 TO-270-007 TO-270-011 TO-270-012 TO-270-014 | FV DR | |

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AN

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments | |
|------------------------------|------------|-----------|---|--------------|------------------------------|----------------------------|
| WHC-SD-WM-OSR-016 | SL 2.2 | NA | TO-270-040 TO-270-221 TO-270-235 TO-270-251 TO-270-252 TO-270-268 TO-270-824 TO-400-200 TO-430-480 TO-430-485 TO-440-002 | FV DR | | |
| WHC-SD-WM-OSR-016 | LCO 3.2.1 | NA | NA | FV | LCO - Not Implemented by ECN | |
| WHC-SD-WM-OSR-016 | SR 3.2.2.1 | NA | TF-OR-A-03 TF-OR-EF-AN TF-OR-WST-01-D TF-OR-WST-01-W TO-001-184 TO-040-660 TO-220-085 TO-220-086 TO-230-085 TO-230-089 TO-230-133 TO-230-141 TO-230-142 TO-230-143 TO-230-144 TO-270-007 TO-270-011 TO-270-012 TO-270-035 TO-270-040 TO-400-200 TO-430-480 TO-430-485 TO-440-002 | NA | FV DR | SR- Not Implemented by ECN |

05/31/96

NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AN

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|-----------|-------------------------|--|--------------|----------|
| | NA | OSD-T-151-00007 7.2.6.a | TO-001-182 TO-001-184 TO-040-780 TO-200-010 TO-220-095 TO-230-095 TO-230-133 TO-230-274 TO-270-040 TO-270-204 TO-270-221 TO-270-236 TO-270-262 TO-270-268 TO-270-828 TO-400-200 TO-430-480 TO-600-080 | NA | |
| | NA | OSD-T-151-00007 7.2.6.b | TO-001-182 TO-001-184 TO-040-780 TO-200-010 TO-220-095 TO-230-095 TO-230-133 TO-230-274 TO-270-040 TO-270-204 TO-270-221 TO-270-236 TO-270-262 TO-270-268 TO-270-828 TO-400-200 TO-430-480 TO-600-080 | NA | |

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

AN

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|-----------------------------|-------------------------|--|--------------|----------|
| | NA | OSD-T-151-00007 7.2.8.c | TO-001-182 TO-001-184 TO-040-760 TO-200-010 TO-220-085 TO-230-085 TO-230-133 TO-230-174 TO-270-040 TO-270-204 TO-270-221 TO-270-236 TO-270-262 TO-270-266 TO-270-526 TO-270-528 TO-400-200 TO-430-480 TO-600-080 | NA | |
| Liquid level (Primary) | WHC-SD-WM-OSR-016 SL 2.1 | NA | TF-OR-WST-01-D TF-OR-EF-AN TO-020-330 TO-020-820 TO-040-200 TO-060-230 TO-060-340 TO-220-018 TO-220-085 TO-230-085 TO-230-099 TO-230-133 TO-230-142 TO-230-143 TO-230-274 TO-440-002 | FV DR | |
| | WHC-SD-WM-OSR-016 LCO 3.1.2 | NA | ARP-T-231-00102 ARP-T-231-00103 | NA | |

05/31/96

NA = Not applicable or not required

B-40

TABLE 6
OSR/OSD SAFETY CONTROLS

AN

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|-----------|-----------|--|--------------|----------|
| WHC-SD-WM-OSR-016 | LOO 3.1.2 | NA | ARP-T-231-00106 ARP-T-271-00101 ARP-T-271-00102 ARP-T-271-00103 ARP-T-271-00104 ARP-T-271-00105 ARP-T-271-00106 ARP-T-271-00107 ARP-T-271-00108 TF-OR-A-03 TF-OR-EF-AN TF-OR-WST-01-D TO-001-064 TO-001-180 TO-001-184 TO-020-062 TO-020-380 TO-020-585 TO-020-820 TO-040-200 TO-060-105 TO-060-230 TO-060-340 TO-200-460 TO-220-027 TO-220-095 TO-220-098 TO-230-085 TO-230-088 TO-230-133 TO-230-142 TO-230-143 TO-230-144 TO-230-274 TO-270-007 TO-270-012 TO-270-014 TO-270-235 TO-270-251 | NA | |

B-41

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AN

| System/Structures/Component | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|-----------------------------|-----------|-------------------------|--|--------------|----------|
| WHC-SD-WM-OSR-016 LCO 3.1.2 | | NA | TO-270-952 TO-270-924 TO-400-200 TO-430-490 TO-430-485 TO-440-002 | NA | |
| WHC-SD-WM-SAR-016 | 11.5 | OSD-T-151-00007 7.2.2.a | TF-OR-EF-AN TF-OR-EF-AYAZ-D TO-001-182 TO-020-240 TO-020-420 TO-020-820 TO-040-580 TO-230-065 TO-230-274 TO-270-204 TO-270-221 TO-270-235 TO-270-266 TO-270-926 TO-270-928 | NA | |
| Liquid level (Backup) | | OSD-T-151-00007 7.2.2.a | TF-OR-EF-AN TF-OR-EF-AYAZ-D TO-001-182 TO-020-240 TO-020-420 TO-020-820 TO-040-580 TO-230-065 TO-230-274 TO-270-204 TO-270-221 TO-270-235 TO-270-266 TO-270-926 TO-270-928 | NA | |

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|---|-----------|-------------------------|--|--------------|----------|
| High level probe | 11.5 | OSD-T-151-00007 7.2.2.a | TO-270-828 | NA | |
| Tank primary vapor space pressure monitor | NA | NA | NA | NA | |
| WHC-SD-WM-OSR-016 SL 2.3 | NA | NA | TF-FT-239-001 TF-FT-279-001 TF-OR-WST-01-D TO-440-085 TO-460-101 TO-460-230 TO-460-340 TO-200-065 TO-200-133 TO-200-142 | FV DR | |
| WHC-SD-WM-OSR-016 LCO 3.3.1 | NA | NA | ARP-T-231-00102 ARP-T-231-00103 ARP-T-231-00104 ARP-T-231-00105 ARP-T-231-00106 ARP-T-271-00101 ARP-T-271-00102 ARP-T-271-00104 ARP-T-271-00105 ARP-T-271-00106 ARP-T-271-00107 ARP-T-271-00108 TF-FT-239-001 TF-FT-279-001 TO-401-484 TO-401-184 TO-440-035 TO-460-101 TO-460-230 TO-460-340 TO-200-019 TO-200-464 | FV DR | |

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

AN

Tank Farm or Miscellaneous Facility

| System/Structures/Component(s) | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|--------------------------------|-----------|-----------|---|--------------|----------|
| WHC-SD-WM-OSR-016 | LCO 3.3.1 | NA | TO-220-027 TO-220-095 TO-230-098 TO-230-133 TO-230-141 TO-230-142 TO-230-143 TO-230-144 TO-230-274 TO-270-007 TO-270-011 TO-270-012 TO-270-235 TO-270-324 TO-400-200 TO-430-480 | FV DR | |
| WHC-SD-WM-OSR-016 | LCO 3.3.2 | NA | ARP-T-231-00101 ARP-T-231-00106 ARP-T-271-00102 ARP-T-271-00103 ARP-T-271-00104 ARP-T-271-00105 ARP-T-271-00106 ARP-T-271-00107 ARP-T-271-00108 ARP-T-601-00285 TF-OR-A-03 TF-OR-EF-AN TF-OR-WST-01-D TO-040-035 TO-060-101 TO-060-230 TO-060-340 TO-230-065 TO-230-133 TO-230-142 | FV DR | |

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

| System/Structures/Component | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|--------------------------------------|------------|-----------------------|--|--------------|----------|
| WHC-SD-WM-OSR-016 | SR 3.3.2.1 | NA | ARP-T-231-00101 TF-OR-A-03 TF-OR-EF-AN TF-OR-WST-01-D TO-040-035 TO-060-101 TO-060-340 | FV DR | |
| WHC-SD-WM-SAR-016 | 11.6 | OSD-T-151-00007 7.2.5 | TO-060-105 TO-060-341 TO-400-245 | NA | |
| Gas monitoring / SHMS | NA | NA | NA | NA | |
| Mass spectrometer | NA | NA | NA | NA | |
| TMACS | NA | NA | NA | NA | |
| Multi-function instrument tree (MIT) | NA | NA | NA | NA | |
| TV Cameras | NA | NA | NA | NA | |
| Vapor sampler | NA | NA | NA | NA | |
| Sludge level Indicator | NA | NA | NA | NA | |
| Tank Annulus Instrumentation | NA | NA | NA | NA | |
| Leak detection manual taps | NA | NA | NA | NA | |

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

AN

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|-------------------------------------|-----------------------------|-----------------------|--------------------------|--------------|----------------------------|
| CAM Read Monitor | NA | NA | NA | NA | |
| Pump pit leak detection | NA | NA | NA | NA | |
| Leak detection conductivity probe | NA | NA | NA | NA | |
| Temperature | NA | NA | NA | NA | |
| Tank annulus diff. pressure monitor | NA | NA | NA | NA | |
| Tank Structure Instrumentation | NA | NA | NA | NA | |
| Thermocouple data acquisition | WHC-SD-WM-OSR-016 AC 5.28.1 | OSD-T-151-00007 7.2.7 | TO-270-040 TO-600-080 | NA | SR- Not Implemented by ECN |
| Thermocouple data acquisition | NA | NA | NA | NA | |
| Thermocouple data acquisition | NA | NA | NA | NA | |
| Instrument Enclosures | NA | NA | NA | NA | |
| Air/lift circulators | NA | NA | NA | NA | |
| Steam coil | NA | NA | NA | NA | |

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AN

| System/Structures/Component | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|-----------------------------|--------------------------|--------------------------|--|--------------|----------|
| -De-entrainers | NA | NA | NA | NA | |
| -Demister pit | NA | NA | NA | NA | |
| -Heaters | NA | NA | NA | NA | |
| HVAC Instrumentation | NA | NA | NA | NA | |
| Main stack monitor | NA | OSD-T-151-00007 7.3.1.D | TO-060-240 | NA | |
| | NA | OSD-T-151-00031 31.2.2.2 | TO-040-590 | NA | |
| Stack monitor | NA | OSD-T-151-00007 7.3.1.D | TO-060-240 | NA | |
| Primary tank pressure | WHC-SD-WM-OSR-016 SL 2.4 | NA | TE-0R-A-03 TE-0R-A-03 TF-FT-238-001 TF-FT-238-001 TF-FT-279-001 TF-FT-279-001 TF-OR-WST-01-D TF-OR-WST-01-D TO-040-085 TO-040-085 TO-060-101 TO-060-101 TO-060-230 TO-060-230 TO-060-340 TO-060-340 TO-230-065 TO-230-065 TO-230-133 TO-230-133 | FV DR | |

05/31/96

NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AN

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|----------------------------------|-----------|-------------------------|--|--------------|-----------------------------|
| WHC-SD-WM-OSR-016 | SL 2.4 | NA | TO-290-139 TO-290-142 TO-290-142 | FV DR | |
| WHC-SD-WM-OSR-016 | LCO 3.4.1 | OSD-T-151-00007 7.3.1.A | TO-060-101 TO-060-104 TO-060-105 TO-060-230 TO-060-240 TO-060-240 TO-060-340 TO-060-341 | NA | LOO- Not Implemented by EGN |
| | NA | OSD-T-151-00007 7.3.1.B | TO-060-105 TO-060-230 TO-060-240 TO-060-340 TO-060-341 | NA | |
| Differential pressure Indicators | NA | NA | | NA | |
| Temperature Indicators | NA | NA | | NA | |
| Stack flow meter | NA | NA | | NA | |
| Primary Seal Pot | NA | NA | | NA | |
| Level element | NA | NA | | NA | |
| Drain | NA | NA | | NA | |
| Heat trace | NA | NA | | NA | |

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AN

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|-----------|-----------|-------------------------|--------------|----------|
| Annulus Seal Pot Pit | NA | NA | NA | NA | |
| Level element | NA | NA | NA | NA | |
| Drain | NA | NA | NA | NA | |
| Ventilation Pit | NA | NA | NA | NA | |
| Ventilation Pit #1 | NA | NA | NA | NA | |
| Annulus duct pressure | NA | NA | NA | NA | |
| CAM | NA | NA | NA | NA | |
| Flow control valve | NA | NA | NA | NA | |
| Ventilation Pit #2 | NA | NA | NA | NA | |
| Annulus duct pressure | NA | NA | NA | NA | |
| CAM | NA | NA | NA | NA | |
| Flow control valve | NA | NA | NA | NA | |
| Ventilation Pit #3 | NA | NA | NA | NA | |

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AN

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|-----------|-----------|-------------------------|--------------|----------|
| Annulus duct pressure | NA | NA | NA | NA | |
| CAM | NA | NA | NA | NA | |
| Flow control valve | NA | NA | NA | NA | |
| Ventilation Pit #4 | NA | NA | NA | NA | |
| Annulus duct pressure | NA | NA | NA | NA | |
| CAM | NA | NA | NA | NA | |
| Flow control valve | NA | NA | NA | NA | |
| Ventilation Instrument Pit | NA | NA | NA | NA | |
| Drains | NA | NA | NA | NA | |
| Pits | NA | NA | NA | NA | |
| Annulus Pump Pit | NA | NA | NA | NA | |
| Annulus Pump Pit Contents | NA | NA | NA | NA | |
| Floor drain | NA | NA | NA | NA | |

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AN

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|-----------|-----------|-------------------------|--------------|----------|
| Sump | NA | NA | NA | NA | |
| Leak detection | NA | NA | NA | NA | |
| Riser spray ring | NA | NA | NA | NA | |
| Central Pump Pit | NA | NA | NA | NA | |
| Central Pump Pit Contents | NA | NA | NA | NA | |
| Leak detection | NA | NA | NA | NA | |
| Floor drain | NA | NA | NA | NA | |
| Check Valve | NA | NA | NA | NA | |
| Portable pit spray (1" RW) | NA | NA | NA | NA | |
| Distributor Pit | NA | NA | NA | NA | |
| Distributor Pit Contents | NA | NA | NA | NA | |
| Sluice Pit | NA | NA | NA | NA | |
| Sluice Pit Contents | NA | NA | NA | NA | |

05/31/96

NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AN

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|--|-----------|-------------------------|---|--------------|---|
| Heel PH | NA | NA | NA | NA | |
| Heel PH Contents | NA | NA | NA | NA | |
| Leak detection pump pH | NA | NA | NA | NA | |
| Leak Detection PH/Sump Instrumentation | NA | NA | NA | NA | |
| Level sensing system (SpG-WF sump) | NA | OSD-T-151-00007 7.2.2.b | TF-OR-EF-AN TO-020-240 TO-020-420 TO-020-820 TO-040-580 TO-230-065 TO-270-204 TO-270-221 TO-270-236 TO-270-252 TO-270-266 TO-270-828 TO-270-828 | NA | SpG-WF on 241-AN-103 is plugged, a zip cord is used instead |
| Radiation monitor (sump) | NA | NA | NA | NA | |
| Leak detection system (pH) | NA | NA | NA | NA | |
| Temperature | NA | NA | NA | NA | |

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

AN

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|----------------------------------|-----------|-----------|-------------------------|--------------|----------|
| Well | NA | NA | NA | NA | |
| Drain | NA | NA | NA | NA | |
| Riser spray | NA | NA | NA | NA | |
| Dry wells | NA | NA | NA | NA | |
| Condensate Receiver pit | NA | NA | NA | NA | |
| Condenser Pit Contents | NA | NA | NA | NA | |
| Leak detection | NA | NA | NA | NA | |
| Sludge pump pit | NA | NA | NA | NA | |
| Sludge pump pit contents | NA | NA | NA | NA | |
| Salt well pump pit | NA | NA | NA | NA | |
| Saltwell Pumping Instrumentation | NA | NA | NA | NA | |
| Hydrogen monitor | NA | NA | NA | NA | |
| Weight factor / specific gravity | NA | NA | NA | NA | |

05/31/96

NA = Not applicable or not required

B-54

TABLE 6
OSR/OSD SAFETY CONTROLS

AN

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|--|-----------|-----------|-------------------------|--------------|----------|
| Drain pit | NA | NA | NA | NA | |
| Drain Pit Contents | NA | NA | NA | NA | |
| Drain | NA | NA | NA | NA | |
| Leak detection | NA | NA | NA | NA | |
| Portable pH spray | NA | NA | NA | NA | |
| Valve Pit / Transfer Pit / Diversion Boxes (2) | NA | NA | NA | NA | |
| Pit or Diversion Box Contents | NA | NA | NA | NA | |
| Leak detection | NA | NA | NA | NA | |
| Valve position indication | NA | NA | NA | NA | |
| Pipeline flow monitoring | NA | NA | NA | NA | |
| Drain | NA | NA | NA | NA | |
| Steam | NA | NA | NA | NA | |
| Pressure switches | NA | NA | NA | NA | |

05/31/96

NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AN

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|-----------|-----------|-------------------------|--------------|----------|
| Drain line flow alarm | NA | NA | NA | NA | |
| Clean Out Boxes | NA | NA | NA | NA | |
| Clean Out Box Contents | NA | NA | NA | NA | |
| Leak Detection | NA | NA | NA | NA | |
| Feed Pump Pit | NA | NA | NA | NA | |
| Feed Pump Pit Contents | NA | NA | NA | NA | |
| Mixer Pump Pit | NA | NA | NA | NA | |
| Mixer Pump Pit Contents | NA | NA | NA | NA | |
| Service Pit | NA | NA | NA | NA | |
| Service pit instrumentation | NA | NA | NA | NA | |
| Flow monitoring | NA | NA | NA | NA | |
| Rad monitor | NA | NA | NA | NA | |
| Backflow preventer | NA | NA | NA | NA | |

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AN

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|-----------|-----------|-------------------------|--------------|----------|
| Leak detection | NA | NA | NA | NA | |
| Pressure Gauges | NA | NA | NA | NA | |
| Sump | NA | NA | NA | NA | |
| Drain | NA | NA | NA | NA | |
| Sump level element | NA | NA | NA | NA | |
| Heater | NA | NA | NA | NA | |
| Flush pit | NA | NA | NA | NA | |
| Flow monitoring | NA | NA | NA | NA | |
| Leak detection | NA | NA | NA | NA | |
| RW pressure switch | NA | NA | NA | NA | |
| Drain | NA | NA | NA | NA | |
| Sump | NA | NA | NA | NA | |
| Level element | NA | NA | NA | NA | |

05/31/96

NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AN

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|---|-----------|-----------|-------------------------|--------------|----------|
| Heater | NA | NA | NA | NA | |
| Faciation monitor | NA | NA | NA | NA | |
| Steam | NA | NA | NA | NA | |
| Supermate Receiver Pit | NA | NA | NA | NA | |
| Leak detection | NA | NA | NA | NA | |
| Transfer Piping (Look for evidence of leak detection) | NA | NA | NA | NA | |
| Transfer Lines | NA | NA | NA | NA | |
| Buildings | NA | NA | NA | NA | |
| Compressor Building | NA | NA | NA | NA | |
| Holding Tanks | NA | NA | NA | NA | |
| Receiver tank | NA | NA | NA | NA | |
| Air dryer | NA | NA | NA | NA | |
| Flammable storage cabinet | NA | NA | NA | NA | |

05/31/96

NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

AN

Tank Farm or Miscellaneous Facility

| System/Structures/Components/ Instrument Building | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|---|-----------|-----------|-------------------------|--------------|----------|
| | NA | NA | NA | NA | |
| TMACS connection | NA | NA | NA | NA | |
| CAM | NA | NA | NA | NA | |
| Remote alarm location(s) (describe in comment section) | NA | NA | NA | NA | |
| TV monitor | NA | NA | NA | NA | |
| Miscellaneous instrumentation | NA | NA | NA | NA | |
| Heat trace | NA | NA | NA | NA | |
| Viscometer | NA | NA | NA | NA | |
| Area radiation monitors (4 in tank farm) | NA | NA | NA | NA | |
| Steam | NA | NA | NA | NA | |
| Steam traps | NA | NA | NA | NA | |
| Miscellaneous Facilities | NA | NA | NA | NA | |

05/31/96

NA = Not applicable or not required

B-59

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AN

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|---|-----------|-----------|-------------------------|--------------|----------|
| Electrical Substation | NA | NA | NA | NA | |
| Motor Control Station | NA | NA | NA | NA | |
| Bottle Storage Area | NA | NA | NA | NA | |
| Heat Trace Transformer/Panel | NA | NA | NA | NA | |
| Change Trailer | NA | NA | NA | NA | |
| Mixer Pump AN-107 (Caustic Addition) Building | NA | NA | NA | NA | |
| Caustic Addition Skid | NA | NA | NA | NA | |
| Satellite Accumulation Area (6 drums) | NA | NA | NA | NA | |
| Conex Box | NA | NA | NA | NA | |
| Two small buildings roped off for red buffer area | NA | NA | NA | NA | |

05/31/96
NA = Not applicable or not required

AP FARM TABLES

**TWRS FSAR MATRIX TABLE
VERIFICATION REVIEW APPROVALS
May 31, 1996**

The following information has been assembled, organized, and documented in the attached TWRS Final Safety Analysis Report (FSAR) Matrix Tables in support of Tank Farms FSAR development. Science Applications International Corporation (SAIC), along with the assistance of ICF Kaiser Hanford and the Westinghouse Hanford Company, assembled this data from controlled drawings and databases, supporting documents, as well as other site documentation. Where possible, the data has been field verified by performing field walkdowns of the particular facility of interest. The data also have been reviewed for its completeness and accuracy by the TWRS Facility Operations Design Authority and the Cognizant Engineer assigned to the respective facility. The information, to the best of the knowledge and the time allotted by the undersigned, is true, accurate, and complete as permitted by the referenced documents and drawings shown on the respective tables. No efforts were attempted or made by the authors and/or reviewers to substantiate the reference information shown on the tables beyond the stated qualifiers as noted on the individual facility matrix tables.

AP Tank Farm

Tank Farm or Facility

PK Brockman

PK Brockman
SAIC Lead

5/31/96

Date

Kathleen Dick
WHC Cognizant Engineer Review

9/4/96
Date

Ronald W Need
WHC Design Authority Review

4 Sep 96
Date

AP FARM MASTER CHECKLIST

WHC-SD-WM-HIE-007
Rev. 0

| Facility | Type | Material Inventory, (Table 1) | Hazards ID, (Table 2) | Unique Phenomena, (Table 3) | Facility Configuration, (Table 4) | Risk Levels, (Table 5) | Controls, (Table 6) | Comment |
|-------------|----------------|----------------------------------|--------------------------|--------------------------------|--------------------------------------|---------------------------|------------------------|----------------------------|
| AP FARM | | | | | | | | |
| 241-AP-101 | DST | X | X | X | X | X | X | NA |
| 241-AP-102 | DST | X | X | X | X | X | X | NA |
| 241-AP-103 | DST | X | X | X | X | X | X | NA |
| 241-AP-104 | DST | X | X | X | X | X | X | NA |
| 241-AP-105 | DST | X | X | X | X | X | X | NA |
| 241-AP-106 | DST | X | X | X | X | X | X | NA |
| 241-AP-107 | DST | X | X | X | X | X | X | NA |
| 241-AP-108 | DST | X | X | X | X | X | X | NA |
| 241-AP | Valve pit | NA | NA | NA | NA | NA | NA | Same as 241-AP-A valve pit |
| COB-AP-07D | Clean out box | NA | NA | NA | NA | NA | NA | no COB's in AP |
| COB-AP-07E | Clean out box | NA | NA | NA | NA | NA | NA | no COB's in AP |
| COB-AP-07F | Clean out box | NA | NA | NA | NA | NA | NA | no COB's in AP |
| 241-AP | Flush pit | X | X | NA | X | X | X | NA |
| 241-AP-273 | Service pit | X | X | NA | X | X | X | NA |
| 241-AP-02A | Feed pump pit | X | X | NA | X | X | X | NA |
| 241-AP-02-D | Feed pump pit | X | X | NA | X | X | X | NA |
| 241-AP-04-D | Feed pump pit | NA | NA | NA | NA | NA | NA | Does not exist. |
| 241-AP-07D | Mixer pump pit | NA | X | NA | X | X | X | Inactive, part of group |

5/3/08. Master checklist matrix establishes TWEBS FSAP associated facilities and specific checklists for categories 1-8. Check appropriate category for individual facility checklists (i.e., 241-AP-101, a material inventory, hazard ID, facility configuration and controls checklist is required based on known facility hazards.)
B64
NA = Not applicable or not required

**AP FARM
MASTER CHECKLIST**

| Facility | Type | Material Inventory, (Table 1) | Hazard ID, (Table 2) | Unique Phenomena, (Table 3) | Facility Configuration, (Table 4) | Risk Levels, (Table 5) | Controls, (Table 6) | Comment |
|------------|-----------------------------|----------------------------------|-------------------------|--------------------------------|--------------------------------------|---------------------------|------------------------|--------------------------------|
| 241-AP-97E | Misc pump pit | NA | X | NA | X | X | X | Inactive, part of ground |
| 241-AP-97F | Misc pump pit | NA | X | NA | X | X | X | Inactive, part of ground |
| 241-AP-271 | Instrument building | NA | X | NA | X | X | X | NA |
| 241-AP-701 | Compressor building | X | X | NA | X | X | X | NA |
| 241-AP-273 | Service building | NA | NA | NA | NA | NA | NA | Same as 241-AP-273 service pit |
| 241-AP-A | Valve pit | X | X | NA | X | X | X | NA |
| | Satellite accumulation area | X | X | NA | X | X | X | NA |
| | Change trailer | X | X | NA | X | X | X | NA |

570108. Master checklist matrix establishes TMAPS FSAR associated facilities and specific checklists for categories 1-6. Check appropriate category for individual facility checklists (i.e., 241-AP-701, a material inventory, hazard ID, facility configuration and controls checklist is required based on known facility hazards.)
NA = Not applicable or not required
B-65

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | Quantity | Comments |
|---------------------------------|------------------------------|--|--|------------------------|--|--|--|----------|
| | | Material Classification | Type | Physical Form | Volume or Activity | Transient Y/N | | |
| Legend Box-> | Capacity: Provide reference. | Type of material in the tank, etc. (see instructions for abbreviations) Provide reference. | Supernatant, sludge, etc. Provide reference. | Misc. liquid and solid | How much material is present in gallons, cubic ft. Include units. Provide reference. | Can the material be relocated or moved, yes or no. | Number of bags, containers, etc. (if applicable). Provide reference if applicable. | Notes |
| 1. Tank Contents | | | | | | | | |
| 241-AP-101 | 1.16 Mgal (e) | DSSF (e) | supernatant (e) | Liquid (l) | 735 Kgal (c) | No | NA | NA |
| 241-AP-102 | 1.16 Mgal (e) | CS (e) | supernatant (e) | Liquid (l) | 1008 Kgal (c) | No | NA | NA |
| 241-AP-103 | 1.16 Mgal (e) | DN (e) | supernatant (e) | Liquid (l) | 25 Kgal (c) | No | NA | NA |
| 241-AP-104 | 1.16 Mgal (e) | DN (e) | supernatant (e) | Liquid (l) | 1123 Kgal (c) | No | NA | NA |
| 241-AP-105 | 1.16 Mgal (e) | DSSF (e) | sludge (l) | solid (l) | 195 Kgal (c) | No | NA | NA |
| 241-AP-106 | 1.16 Mgal (e) | DN (e) | supernatant (e) | Liquid (l) | 107 Kgal (c) | No | NA | NA |
| 241-AP-107 | 1.16 Mgal (e) | DN (e) | supernatant (e) | Liquid (l) | 25 Kgal (c) | No | NA | NA |
| 241-AP-108 | 1.16 Mgal (e) | DN (e) | supernatant (e) | Liquid (l) | 29 Kgal (c) | No | NA | NA |
| 2. Tank Headspace | | | | | | | | |

TABLE 1
MATERIALS INVENTORY

| Material or Risk (MAR) Category | Capacity | Material Inventory | | | | Volume or Activity | Transient Y/N | Quantity | Comments |
|---------------------------------|----------------------------------|--|--|------------------------------|--|---|---|----------|----------|
| | | Material Classification | Type | Physical Form | | | | | |
| Legend/Bbox→ | Capacity Provide reference | Type of material in the tank, etc. see instructions for abbreviations Provide reference | Suspensions, slurries, solids, etc. Provide reference | Mixed liquid and solid | How much material is present in gallons, cubic meters, etc. Provide reference | Can the material be recovered or moved per or no. | Number of bags, containers, etc. If applicable. Provide reference if applicable. | Notes | |
| 241-AP-101 | NA | NA | NA | vapor | 2538 cubic meters. No NFS present (Q), see radioactive concentrations note 1 | No | NA | NA | |
| 241-AP-102 | NA | NA | NA | vapor | 1187 cubic meters. No NFS present (Q), see radioactive concentrations note 1 | No | NA | NA | |
| 241-AP-103 | NA | NA | NA | vapor | 5228 cubic meters. No NFS present (Q), see radioactive concentrations note 1 | No | NA | NA | |
| 241-AP-104 | NA | NA | NA | vapor | 2168 cubic meters. No NFS present (Q), see radioactive concentrations note 1 | No | NA | NA | |
| 241-AP-105 | NA | NA | NA | vapor | 4740 cubic meters. No NFS present (Q), see radioactive concentrations note 1 | No | NA | NA | |
| 241-AP-106 | NA | NA | NA | vapor | 4618 cubic meters. No NFS present (Q), see radioactive concentrations note 1 | No | NA | NA | |

NA = Not applicable or not required
5/31/88

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | Quantity | Comments |
|----------------------------------|-------------------------------|--|---|-------------------------|---|--|--|---|
| | | Material Classification | Type | Physical Form | Volume or Activity | Transient Y/N | | |
| Legend Box → | Capacity Provide reference | Type of material in the tank, etc. (see instructions for abbreviations) Provide reference | Substrate, sludge, solids, etc. Provide reference | Aqueous liquid solid | How much material is present in primary tanks etc. Include units. Provide reference | Can the material be released or moved yes or no. | Number of bags, containers, etc. (if applicable). Provide reference if applicable. | Notes |
| 241-AP-107 | NA | NA | NA | vapor | 5228 cubic meters. No NH3 present (G). See reodoricide concentrations note 1 | No | NA | NA |
| 241-AP-108 | NA | NA | NA | vapor | 5217 cubic meters. No NH3 present (G). See reodoricide concentrations note 1 | No | NA | NA |
| 3. Ball or Truck Tanker Contents | | | | | | | | |
| None (c) | NA | NA | NA | NA | NA | NA | NA | No rail or truck tankers at AP location |
| 4. Contamination on Vehicle | | | | | | | | |
| Contaminated vehicles | Surface residual (c) | Residual surface contamination on farm vehicles (c) | Residual (c) | NA | Unknown | NA | NA | Contaminated vehicle housed in storage area (outside of AP farm fence)(c) |

NA = Not applicable or not required
5/31/98

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | Quantity | Comments |
|--|---|--|---|-----------------------|--|---|--|---|
| | | Material Classification | Type | Physical Form | Volume or Activity | Transient Y/N | | |
| Legend Box -> | Capacity: Provide reference | Type of material in the tank, oil, etc. (see instructions for abbreviations). Provide reference. | Suspensions, solids, solutions, etc. Provide reference. | Misc liquid and solid | How much material is present in various states, etc. Include units. Provide reference. | Can this material be relocated or moved, yes or no. | Number of bags, containers, etc. If applicable, Provide reference if applicable. | Notes |
| 5. Contamination on Equipment or Tools | | | | | | | | |
| None (c) | NA | NA | NA | NA | NA | NA | NA | Tox orb located in AP farm contained misc. small tools, no contamination detected on rad survey (c) |
| 6. Ventilation Filter Contents | | | | | | | | |
| Primary | 200 m ³ /hr maximum for all HEPA filters (e) | NA | NA | particulate | unknown | Yes - Disposal in accordance with: EP-0033-4 (R69) | NA | HEPA filters monitored for DP droploading in accordance with: manufacturers specs |
| Annulus | 200 m ³ /hr maximum for all HEPA filters (e) | NA | NA | particulate | unknown | Yes - Disposal in accordance with: EP-0033-4 (R69) | NA | HEPA filters monitored for DP droploading in accordance with: manufacturers specs |
| Breather | NA | NA | NA | NA | NA | NA | NA | NA |

NA = Not applicable or not required
5/31/98

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | Quantity | Comments |
|--|-------------------------------|--|--|-------------------|--|--|---|---|
| | | Material Classification | Type | Physical Form | Volume or Activity | Transient Y/N | | |
| Legend Box | Capacity Provide reference | Type of material in the tank, etc. (see instructions for abbreviations) Provide reference | Supernatant sludge, solids, etc. Provide reference | Misc. liquid acid | How much material is present in process tanks, etc. Provide units. Provide reference | Can the material be released or moved per or no. | Number of bags, containers, etc. (if applicable). Provide reference if applicable | Notes |
| 7. Contamination in Ventilation System | | | | | | | | |
| De-entrainers | NA | Process condensate (G) | NA | liquid | Residual (G) | NA | NA | NA |
| Seal loop | NA | Process condensate (G) | NA | liquid | Residual (G) | NA | NA | NA |
| | | | | | | | | |
| 8. Contents of Piping and/or Source Tank During Transfer | | | | | | | | |
| NA | NA | NA | NA | NA | NA | NA | NA | Refer to transfer line Table 7 |
| | | | | | | | | |
| 9. Contents of Sump | | | | | | | | |
| Service pit sump | NA | raw water | NA | liquid | NA | NA | NA | No standing water noted during site walk-down (G) |
| | | | | | | | | |

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | Quantity | Comments |
|---|-------------------------------|--|---|--------------------|---|--|--|--|
| | | Material Classification | Type | Physical Form | Volume or Activity | Transient Y/N | | |
| Legend Row -> | Capacity Provide reference | Type of material in the tank, pit, etc. (see instructions for abbreviations). Provide reference. | Supernatant, sludge, unknown, etc. Provide reference. | Misc. liquid solid | How much material is present in gallons, cubic etc. Include units. Provide reference. | Can the material be relocated or moved, yes or no. | Number of bags, containers, etc. (if applicable). Provide reference if applicable. | Notes |
| 10. Contamination in Pit or Box | | | | | | | | |
| Process pits | NA | residual contamination (c) | NA | residue | unknown | no | NA | No standing water noted (e) |
| 24" AP Valve pit | ~21.5 K gal (c) | residual contamination (c) | NA | residue | unknown | no | 1 control valve pit to AP | NA |
| Control Pump Pits (101-105) | ~5.1 K gal (e) | residual contamination (c) | NA | residue | unknown | no | 8 pits total (1 pit per tank) | NA |
| 11. SARA 313 Materials | | | | | | | | |
| Flammable storage cabinet - compressor bldg. (c) | NA | NA | NA | Liquids | Unknown | Yes | NA | Standard small quantity classified materials (paints, cleaning solvents) |
| Flammable storage cabinet - near charge trailer (c) | NA | NA | NA | Liquids | Unknown | Yes | NA | Standard small quantity classified materials (paints, cleaning solvents) |
| 12. Other | | | | | | | | |

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | Quantity | Comments |
|---------------------------------|---|--|---|---------------------------|---|---|--|---|
| | | Material Classification | Type | Physical Form | Volume or Activity | Transient Y/N | | |
| Liquid Gas--> | Capacity Provide reference. | Type of material in the tank, its use, any instructions for abatement, etc. Provide reference. | Supernatant, sludge, alkalis, etc. Provide reference. | Water, liquid and/or acid | How much material is present, by volume, cubic etc. Provide units. Provide reference. | Can the material be introduced or moved, per or no. | Number of bags contained, etc. If applicable, Provide reference if applicable. | Notes |
| Bottle storage area (c) | 28 bottles (max) | -Nitrogen | NA | Gas | 480 lb per bottle | Yes | 28 bottles | Bottle storage area located adjacent to AP instrument Bld. |
| | 3 bottles | -Hydrogen | NA | Gas | 480 lb per bottle | Yes | 1 bottle | Bottle storage area located adjacent to AP instrument Bld. |
| | 14 bottles | -H ₂ / He fill. | NA | Gas | 480 lb per bottle | Yes | 4 bottles | Bottle storage area located adjacent to AP instrument Bld. |
| | 14 bottles | 10% Methane / 90% Argon | NA | Gas | 480 lb per bottle | Yes | 9 bottles | Bottle storage area located adjacent to AP instrument Bld. |
| Outside change trailer (c) | 2 bottles | 10% methane / 90% Argon | NA | Gas | 480 lb per bottle | Yes | 2 bottles | Bottle support PCHIB personnel red monitor |
| Satellite accumulation area (c) | 6- 55 gallon mixed waste drums (medium) | RCRA Mixed Wastes | soil, paint waste, tank contents, mark cartridges, HEPA filters, misc./RMV wastes | Solid | Low Level (less than class C) | Yes | 6-55 gal drums max capacity for each satellite enclosure | Inventories removed when filled, transported to 208-E 00 day storage facility |

(1) Inventory contribution in Bolt, of major radionuclides to the total unit filler dose due to inhalation/ingestion for liquids in tanks (Tables 4/5, WHC-SD-WM-SARR-037 Rev.0)

C260- 8.97 E+08, S90-4.59 E+08, Y90 4.69 E+08, C4197-5.09 E+10, E415-4.18 E+07, N4237-2.39 E+05, P4238-1.78 E+05, P4239-7.65 E+05, P4241-1.84 E+07, A4241-3.40 E+07, C4244-1.22 E+05. These are bounding concentrations.

Inventory contribution in Bolt, of major radionuclides to the total unit filler dose due to inhalation/ingestion for solids in tanks (Tables 4/5, WHC-SD-WM-SARR-037 Rev.0)

C690- 1.5 E+07, S690-5.2 E+10, Y90 5.2 E+10, C4197-5.8 E+10, E415-3.00 E+08, N4237-4.1 E+05, P4238-1.6 E+08, P4241-3.8 E+08, A4241-2.7 E+08, C4244-1.8 E+07. These are bounding concentrations.

(a) -SD-WM-SAR-016, Revision 1

(b) -WHC-EP-0102-93, Dec. 31, 1995

(c) -Observed on Field walkdown, 3/22/98, PK Brodman, Sue Brews, Katie White, Corey Siegel

NA = Not applicable or not required

5/31/98

TABLE 4
MATERIALS INVENTORY

- (6) =Osg engineer interview, 3/23/88
- (6a) =Drawing H-2-80448, dated 1988
- (7) =Drawing H-2-80447, She 1/2, dated 8/88
- (8) =TWINS database from J. Huchaby PNNL
- (9) =WMC-SD-WM-SAPR-037, Rev. O Cowley Report
- (9) =observed in in-tank video

TABLE 2
HAZARDS IDENTIFICATION CHECKLIST

Tank Farm or Miscellaneous Facility AP Tank Farm

| Facility | Type | A Corrosive | B Explosive/ Pyrophoric | C Nuclear Criticality | D Flammable Materials | E Thermal Radiation | F Chem. Refn. | G Friction | H Electrical | I Kinetic- Rotation | J Kinetic- Linear | K Mass, Gravity, Height | L Pressure- Volume | M Thermal (except radiant) | Comments |
|--|------------------|----------------|-------------------------------|-----------------------------|-----------------------------|---------------------------|---------------------|---------------|-----------------|---------------------------|-------------------------|----------------------------------|--------------------------|-------------------------------------|---------------------------------|
| Legend/Notes: - Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below. | | | | | | | | | | | | | | | |
| AP TANK FARM | | NA | NA | NA | NA | NA | NA | 5 (c) | 6 (b) | 2, 3 (b) | NA | 11 (c) | NA | NA | NA |
| 241-AP-101 | DST | 2 (a) | 6, 7, 8 (a) | 15 (a) | 4, 11, 14 (a) | 5* (a) | NA (a) | 5 (c) | 9, 14 (c) | 3 | NA (c) | NA (c) | NA (c) | NA (c) | "Tank waste (b) |
| 241-AP-102 | DST | 2 (a) | 6, 7, 8 (a) | 15 (a) | 4, 11, 14 (a) | 5* (a) | NA (a) | 5 (c) | 9, 14 (c) | 3 | NA (c) | NA (c) | NA (c) | NA (c) | "Tank waste (b) |
| 241-AP-103 | DST | 2 (a) | 6, 7, 8 (a) | 15 (a) | 4, 11, 14 (a) | 5* (a) | NA (a) | 5 (c) | 9, 14 (c) | 3 (c) | NA (c) | NA (c) | NA (c) | NA (c) | "Tank waste (b) |
| 241-AP-104 | DST | 2 (a) | 6, 7, 8 (a) | 15 (a) | 4, 11, 14 (a) | 5* (a) | NA (a) | 5 (c) | 9, 14 (c) | 3 (c) | NA (c) | NA (c) | NA (c) | NA (c) | "Tank waste (b) |
| 241-AP-105 | DST | 2 (a) | 6, 7, 8 (a) | 15 (a) | 4, 11, 14 (a) | 5* (a) | NA (a) | 5 (c) | 9, 14 (c) | 3 (c) | NA (c) | NA (c) | NA (c) | NA (c) | "Tank waste (b) |
| 241-AP-106 | DST | 2 (a) | 6, 7, 8 (a) | 15 (a) | 4, 11, 14 (a) | 5* (a) | NA (a) | 5 (c) | 9, 14 (c) | 3 (c) | NA (c) | NA (c) | NA (c) | NA (c) | "Tank waste (b) |
| 241-AP-107 | DST | 2 (a) | 6, 7, 8 (a) | 15 (a) | 4, 11, 14 (a) | 5* (a) | NA (a) | 5 (c) | 9, 14 (c) | 3 (c) | NA (c) | NA (c) | NA (c) | NA (c) | "Tank waste (b) |
| 241-AP-108 | DST | 2 (a) | 6, 7, 8 (a) | 15 (a) | 4, 11, 14 (a) | 5* (a) | NA (a) | 5 (c) | 9, 14 (c) | 3 (c) | NA (c) | NA (c) | NA (c) | NA (c) | "Tank waste (b) |
| 241-AP | Valve pit | 2 (b) | NA (b) | 15 (b) | NA (b) | NA (b) | NA (b) | 5 (b) | 14 (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA |
| COB-AP-07D | Clean out box | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NO COBs in AP Farm (b) |
| COB-AP-07E | Clean out box | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NO COBs in AP Farm (b) |
| COB-AP-07F | Clean out box | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NO COBs in AP Farm (b) |
| 241-AP | Fluor pit | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | 14 (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | leak detection in sump |
| 241-AP-273 | Service Bldg. | NA (c) | NA (c) | NA (c) | NA (c) | NA (c) | NA (c) | NA (c) | 11, 14 (c) | NA (c) | NA (c) | NA (c) | NA (c) | 3 (c) | Space heater in service Bld. |
| 241-AP-02D | Feed pump pit | 2 (b) | NA (b) | 15 (b) | NA (b) | NA (b) | NA (b) | 5 (c) | 9, 14 (c) | 3 (c) | NA (c) | NA (c) | NA (c) | NA (c) | NA |

NA = Not applicable or not required
5/31/88

TABLE 2
HAZARDS IDENTIFICATION CHECKLIST

Tank Farm or Miscellaneous Facility AP Tank Farm

| Facility | Type | Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below | | | | | | | | | | | | | Comments | | |
|------------|---|---|-------------------------|------------------------|------------------------|----------------------|----------------|----------------------------------|---------------|---------------------|-------------------|--------------------------|--------------------|-----------------------------|----------|----------|--|
| | | A. Corrosive | B. Explosive/Pyrophoric | C. Nuclear Criticality | D. Flammable Materials | E. Thermal Radiation | F. Chem. Robs. | G. Friction | H. Electrical | I. Kinetic-Rotation | J. Kinetic-Linear | K. Mass, Gravity, Height | L. Pressure-Volume | M. Thermal (except radiant) | | | |
| 241-AP-07D | Misc pump pit | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | 07D pit empty |
| 241-AP-07E | Misc pump pit | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | 07E pit empty |
| 241-AP-07F | Misc pump pit | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | 07F pit empty |
| 241-AP-271 | Instrument building | NA (c) | NA (c) | NA (c) | NA (c) | NA (c) | NA (c) | 4, 3, 16, 5, 6, 7, 8, 11, 14 (c) | NA (c) | NA (c) | NA (c) | NA (c) | NA (c) | NA (c) | 5 (c) | NA | NA |
| 241-AP-701 | Compressor building | NA (c) | NA (c) | NA (c) | 4, 5, 10 (c) | NA (c) | NA | 1, 2, 3, 5 (c) | NA | NA (c) | NA (c) | 2, 4 (c) | NA (c) | NA (c) | NA (c) | 6, 8 (c) | Small ferromble storage cabinet located in compressor Bld. See SARA 313 report |
| K1 & K2 | Vent Systems (Primary and auxiliary seal pit job) | 2 (b) | 6, 7 (b) | NA (b) | 4, 10, 11, 14 (b) | NA (b) | NA (b) | 1, 2, 3, 5 (b) | NA (b) | NA (b) | NA (b) | 2, 4 (b) | NA (b) | NA (b) | NA (b) | 3 (b) | Hatchways are a mass gravity, height hazard |
| 01A-08A | Central Pump pits (101-109) | 2 (b) | NA (b) | 15 (b) | NA (b) | NA (b) | NA (b) | 5 (b) | NA (b) | NA (b) | NA (b) | 3 (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA |
| 01B-08B | Annulus Pump pits (101-109) | 2 (b) | NA (b) | 15 (b) | NA (b) | NA (b) | NA (b) | 5 (b) | NA (b) | NA (b) | NA (b) | 3 (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA |
| 03C,08C | Leak Detection Pit | NA (b) | NA (b) | 15 (b) | NA (b) | NA (b) | NA (b) | 5 (b) | NA (b) | NA (b) | NA (b) | 3 (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA |
| 03D | Drain Pit | 2 (b) | NA (b) | 15 (b) | NA (b) | NA (b) | NA (b) | 5 (b) | NA (b) | NA (b) | NA (b) | 14 (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA |

NA = Not applicable or not required
5/31/88

TABLE 2
HAZARDS IDENTIFICATION CHECKLIST

| Facility | Type | A- Corrosive | B- Explosive/ Pyrophoric | C- Nuclear Criticality | D- Flammable Materials | E- Thermal Radiation | F- Chem. Reactive | G- Friction | H- Electrical | I- Kinetic- Rotation | J- Kinetic- Linear | K- Mass, Gravity, Height | L- Pressure- Volume | M- Thermal (except radiant) | Comments |
|--|----------------------------------|-----------------|--------------------------------|------------------------------|--|----------------------------|-------------------------|----------------|------------------|----------------------------|----------------------------------|-----------------------------------|---|---|----------|
| Legend/Notes → Subst. applicable / hazard form identified / table used / other corresponding hazard numbers in this form / notes | | | | | | | | | | | | | | | |
| | Change trailer | NA (D, C) | NA (D) | NA (D) | 7, 13 (D), old rust soon cabinet, separated contents | NA (D) | NA (D) | NA (D) | 14 (D) | NA (D) | 1 (D) (transport vehicles) | NA (D) | 5 (D) 2 one bottle outside trailer support in g POMIB | 3 (D) space heaters in trailer | NA |
| AP Tank Farm | Sewage Accumula- tion Area | 1, 2, 4 | NA | NA | 2, 10, 17 (Tank contact ventiles) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

(A) = OGD-T-15-00007
(B) = Cognizant engineer judgement, Keith White, 3/25/98
(C) = Walkdown, 3/25/98, P.K. Broderick, S. Brews, K. White, C. Saget
* All from references B

Table 3
Unique Phenomena Checklist
AP Tank Farm

| Facility | Type | Flammable Gas | Ferrocyenide | Organics | | | High Heat (>70,000 BTU/hr) | Pyrophorics | Sponting | Criticality (>1 g/L in solids) | Corrosivity (GH, H2Z, H2S) limits in GSD-11-151-0007 | Other-1 | Comments |
|------------------|------|---|---|---|---|---|---|---|---|---|--|---|-----------------------------------|
| | | | | Separable Phase | TOC in liquids (>10 g/L) | TOC in solids 3 wt% (dry basis) | | | | | | | |
| Legend Issues -> | | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Notes |
| AP FARM | | | | | | | | | | | | | |
| 241-AP-101 | DST | N Hodgson 1988 WHC-SD-WM-ER-528 Rev. 1 | N Borshaim & Simpson 1981 WHC-SD-WM-ER-133 R.0 | N WHC-SD-WM-ER-161 R.1 | N Tueler 1986 74A30-96-96-008 | Data not available | N Tueler 1986 74A30-96-008 | N personal communication with Dan Reynolds | Unknown or currently undocumented- see note 1 | N Pu Inv Database (WHC-140/PLUT INV) | N Tueler 1988 74A30-96-008 | NA | No known separable phase organics |
| 241-AP-102 | DST | N Hodgson 1988 WHC-SD-WM-ER-528 Rev. 1 | N Borshaim & Simpson 1981 WHC-SD-WM-ER-133 | N WHC-SD-WM-ER-358 | N Tueler 1986 74A30-96-96-008 | Data not available | N Tueler 1986 74A30-96-008 | N personal communication with Dan Reynolds | Unknown or currently undocumented- see note 1 | N Pu Inv Database (WHC-140/PLUT INV) | N Tueler 1986 74A30-96-008 | NA | No known separable phase organics |
| 241-AP-103 | DST | N Hodgson 1988 WHC-SD-WM-ER-528 Rev. 1 | N Borshaim & Simpson 1981 WHC-SD-WM-ER-133 | N WHC-SD-WM-ER-459 | N Tueler 1986 74A30-96-96-008 | Data not available | N Tueler 1986 74A30-96-008 | N personal communication with Dan Reynolds | Unknown or currently undocumented- see note 1 | N Pu Inv Database (WHC-140/PLUT INV) | N Tueler 1988 74A30-96-008 | NA | No known separable phase organics |

Table 3
Unique Phenomena Checklist
AP Tank Farm

| Facility | Type | Flammable Gas | Ferrocyanide | Organics | | | High Heat (>710,000 BTU/hr) | Pyrophorics | Sponting | Criticality (>1 g/L in solids) | Corrosivity (CA, HCl, H2SO4, HNO3) limits in GSD-11-151-007 | Other-1 | Comments |
|-----------------|------|--|--|----------------------------------|---|---|---|--|--|--|---|--|---|
| | | | | Separable Phase | TCC in liquids (>10 g/L) | TCC in solids 3 wk (dry basis) | | | | | | | |
| Legend Boxes -> | | | | | | | | | | | | | |
| 241-AP-104 | DST | N Hodgson 1986 WHC- SD-WM-ER- 528 Rev. 1 | N Borsham & Simpson 1991 WHC-SD-WM- ER-133 | N Saley 1965 71720-85-008 | N Tueler 1985 74A30- 98-008 | Data not available | N Tueler 1985 74A30-98- 008 | N personal communica- tion with Dan Reynolds | Unknown or currently undocumented- see note 1 | N Pu Inv Database (MHC-140RPLUT INV) | N Tueler 1985 74A30-98- 008 | NA | No known separable phase organics |
| 241-AP-106 | DST | N Hodgson 1986 WHC- SD-WM-ER- 528 Rev. 1 | N Borsham & Simpson 1991 WHC-SD-WM- ER-133 | N WHC-SD- WM-ER-390 | N Tueler 1985 74A30- 98-008 | Unknown or currently undocum- ented | N Tueler 1985 74A30-98- 008 | N personal communica- tion with Dan Reynolds | Unknown or currently undocumented- see note 1 | N Pu Inv Database (MHC-140RPLUT INV) | N Tueler 1985 74A30-98- 008 | Video taken in AP-105 showed sludge in tank. Other documents give sludge level of zero. | No known separable phase organics |
| 241-AP-106 | DST | N Hodgson 1986 WHC- SD-WM-ER- 528 Rev. 1 | N Borsham & Simpson 1991 WHC-SD-WM- ER-133 | N WHC-SD- WM-DF-078 | N Tueler 1985 74A30- 98-008 | Data not available | N Tueler 1985 74A30-98- 008 | N personal communica- tion with Dan Reynolds | Unknown or currently undocumented- see note 1 | N Pu Inv Database (MHC-140RPLUT INV) | N Tueler 1985 74A30-98- 008 | NA | No known separable phase organics |
| 241-AP-107 | DST | N Hodgson 1986 WHC- SD-WM-ER- 528 Rev. 1 | N Borsham & Simpson 1991 WHC-SD-WM- ER-133 | N WHC-SD- WM-DF-088 RUA | N Tueler 1985 74A30- 98-008 | Data not available | N Tueler 1985 74A30-98- 008 | N personal communica- tion with Dan Reynolds | Unknown or currently undocumented- see note 1 | N Pu Inv Database (MHC-140RPLUT INV) | N Tueler 1985 74A30-98- 008 | NA | No known separable phase organics |

Table 3
Unique Phenomena Checklist
AP Tank Farm

| Facility | Type | Flammable Gas | Ferrocyticide | Organics | | | High Heat (>10,000 BTU/hr) | Pyrophorics | Sporing | Criticality (>1 g/L in solids) | Corrosivity (CA, HCl, HClO ₂ , HClO ₃) limits in OSD-1-151-007 | Other-1 | Comments |
|------------------|------|---|---|---|---|---|---|---|---|---|---|--|-----------------------------------|
| | | | | Separable Phase | TCC in liquids (>10 g/L) | TCC in solids 3 wk (dry basis) | | | | | | | |
| Legend Issues--> | | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Does it exist? (existing) Provide references. | Low documented events. Provide references. | None |
| 241-AP-108 | DST | N Hodgson 1988 WHC-SD-WMER-526 Rev. 1 | N Bonham & Simpson 1991 WHC-SD-WM-ER-133 | N WHC-SD-WM-QF-186 | N Tutler 7/4/93-98-98-008 | N Date not available | N Tutler 1988 7/4/93-98-008 | N personal communication with Dan Reynolds | N Pu Inv Database (WHC-140PLUT INV) | N Tutler 1988 7/4/93-98-008 | NA | NA | No known separable phase organics |

1. Hazards analysis group performing independent sporing evaluation study.

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/present | Operable | Equipment Condition | Comments |
|--|---|--|--|--|--|
| Legend | Supply any associated ID numbers | is equipment existing Yes/No. Provide reference. | is equipment operable Yes/No. Provide reference. | Equipment condition Provide reference. | Notes, describe deficiencies, etc. |
| Tanks - Double-Shell Tanks 241-AP-101 through 108 | | | | | |
| Tank Waste Instrumentation | | | | | |
| Specific gravity Instr. system | NA | no (b) | NA | NA | NA |
| Temperature probe (T/C line) | NA | yes (e) | yes* (e) | Support | *Each tank AP-101 thru 106 has 18 thermocouples located in waste. Instrumentation system relies to instrument building is chronically bad. Data is collected manually at instrument enclosure. (a,b) |
| Liquid level (Primary) | NA | yes (e) | yes (e) | 8 (c) | NA |
| Liquid level (Backup) | NA | yes (e) | yes* (e) | 8 (c) | *Some manual lapses in poor shops. Tank 106 has new manual tape, tank 107 is in very bad shape. (e) |
| High level probe | NA | yes (a) | yes (e)-see notes | 8 (c) | *High level probe operational with the exception of 102-AP which was disconnected because of potential flammable gas concerns. 102-AP broken, work order in to Bc. (a, b) |
| Tank primary diff. pressure monitor | NA | yes (e) | yes (e) | 8 (c) | Primary and backup systems operational, automatic and field measurements maintained. (e) |
| Gas monitoring / SHMS | NA | NA | NA | NA | No SHMS cabinets located in AP tank farm. (e) |
| Tank Annulus Instrumentation | | | | | |
| Leak detection manual tape (conductivity probe) | NA | yes (a, e, f) | yes (e) | 8 (c) | 3 systems per tank (e) |
| CAM Rad Monitor | NA | yes (a, f) | yes (e) | 8 (c) | 1 system per tank (e) |
| Pump pit leak detection | NA | yes (a, e, f) | yes (e) | 8 (c) | 1 system per pit (e) |
| Temperature | NA | yes (a, e, f) | no* (e) | Support | Instrumentation system relies to instrument building is chronically bad. Data is collected manually at instrument enclosure. (a,b) |
| Tank annulus diff. pressure monitor | NA | yes (e) | yes (e) | 8 (c) | NA |

NA = Not applicable or not required
5/31/85

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/ present | Operable | Equipment Condition | Comments |
|--|------------------------------------|--|--|--|--|
| Legend | Supply air associated ID numbers | In equipment, existing, perfect. Provide references. | In equipment, operable, perfect. Provide references. | Equipment condition. Provide references. | Notes, descriptive information, etc. |
| Tank Structure Instrumentation | | | | | |
| - Thermocouple data acquisition | NA | yes (a, e, f) | no ^g (a) | Suspect | 62 Thermocouples check concrete foundation and insulation temperatures. Insulation system relies to instrument building is chronically bad. Data is collected manually at instrument enclosures. (a,b) |
| Instrument Enclosures | NA | yes (a) | yes (a) | NA | Many instrument enclosures per tank, enclosures visually appeared in good condition. (a) |
| Air III circulators | NA | no (a) | NA | NA | No airift circulators in AP tank farm |
| Steam coil | NA | no (a) | NA | NA | No steam coils in AP tank farm |
| Galson | NA | no (a) | NA | NA | No casemate in AP tank farm |
| HVAC Systems | | | | | |
| Verification System(s) | K1(primary tank)/ K2(tank annulus) | yes (a) | yes (a) | 9 (c) | K1 Primary vent system, K2 = Annulus vent system. Systems appear in good condition. (a) |
| -Passive | NA | no (a) | NA | NA | No passive ventilation systems in AP tank farm |
| -Active | K1/K2 | yes (a) | yes (a) | 9 (c) | NA |
| Shared/ common vent system? (Describe in comments section) | NA | yes (a) | yes (a) | 9 (c) | All 8 tanks share the same active K1/K2 ventilation system (a,b) |
| Exhaust vent/hatchway | NA | yes (a) | yes (a) | 9 (c) | Hatchway appeared in good condition |

NA = Not applicable or not required
5/3/88

TABLE 4
FACILITY CONFIGURATION

| System | System Equipment Identifier | Is equipment safety related? Provide reference. | Operable | Equipment Condition | Comments |
|--|--|--|--|--|---|
| Legend | Supply any associated ID numbers. | Is equipment safety related? Provide reference. | Is equipment operable? Provide reference. | Equipment Condition: Provide reference. | Notes, descriptive information, etc. |
| Annulus air intake assemblies | NA | yes (a) | yes (a) | 9 (c) | one for every two tanks, four total (b) |
| Primary air intake assemblies | NA | no (a) | NA | NA | Air filtration is provided via pit cover blocks and conveyed through the duct system to the scrubber. |
| Pre-filters (wet/dry) | NA | yes (a) | yes (b) | 9 (c) | NA |
| HEPA filters (how many filters, stages, parallel vs series etc.) | K1/K2 | yes (a) | yes (a) | 9 (c) | K1-5-1/K1-5-2 (primary exhaust) contains the de-entrainer, electric heater, prefilter and first and second stage HEPA filters. K2-5-1/K2-5-2 (secondary exhaust) provides ventilation for the annulus space of the tanks. Air filtration is via 4 intake stations (2 tanks each) which are filtered through first and second stage HEPA filtration. |
| Fans | K1 and K2 | yes (a) | yes (a) | 9 (c) | NA |
| De-entrainers | K1 only | yes (a) | yes (a) | 9 (c) | De-entrainer for primary ventilation system only. |
| Heaters | K1 and K2 | yes (a) | yes* (a) | Suspect | *Heat controllers in need of repair (a,b) |
| HVAC Instrumentation | | | | | |
| Main stack monitor | K1 monitor | yes (a) | yes (a) | 9 (c) | Record sampler and CAM located on K1 main stack monitor (a,b) |
| Stack monitor | K2 monitor | yes (a) | yes (a) | 9 (c) | Record sampler and CAM located on K2 stack monitor (a,b) |
| Primary header pressure | K1 monitor | yes (c) | yes (a) | 9 (c) | NA |
| Annulus header pressure | K2 monitor | yes (c) | yes (a) | 9 (c) | NA |
| Primary Seal Pot PH | 241-AP K1 | yes (a) | NA | NA | NA |
| Sump pump | P- K1-1 | yes (b) | yes (b) | NA | NA |
| Sump leak detection | LDE-K1-1 | yes (b) | yes (b) | 9 (c) | NA |
| Level element | LE K1-1 | yes (b) | yes (b) | 9 (c) | NA |

NA = Not applicable or not required
5/3/88

TABLE 4
FACILITY CONFIGURATION

| System | System Equipment Identifier | Existing/ Present Is equipment suitable? Justify. Provide references. | Operable Is equipment operable? Justify. Provide references. | Equipment Condition Equipment condition? Provide references. | Comments |
|-----------------------------|-----------------------------|---|--|--|--|
| Legend | | Is equipment suitable? Justify. Provide references. | Is equipment operable? Justify. Provide references. | Equipment condition? Provide references. | Notes, descriptive information, etc. |
| -Drain | NA | yes (c) | yes (b) | NA | NA |
| -Heel Ince | NA | yes (d) | yes (b) | NA | NA |
| Annulus Seal Pod Pit | 241-AP K2 | yes (a) | yes (b) | NA | NA |
| -Level element | LE K2-1 | yes (d) | yes (b) | 8 (c) | NA |
| -Drain | NA | yes (d) | yes (b) | NA | NA |
| Verification Instrument Pit | AP VIP 1 and 2 | yes (a) | Yes (b) (c) | NA | The vent pipe provides access to the exhaust ducts for sampling etc. |
| Pits | | | | | |
| Annulus Pump Pit | 241-AP-01B thru 05B | yes (a) | NA | NA | One annulus pump pit per tank (a) |
| -Floor drain | NA | yes (e, f) | yes (b) | NA | Floor drain assumed operable, no occurrence noted |
| -Sump | NA | yes (e, f) | yes (b) | NA | Sump assumed operable |
| -Leak detection | NA | yes (e, f) | yes (b) | 8 (c) | NA |
| Central Pump Pit | 241-AP-01A thru 05A | yes (a) | NA | NA | One central pump pit per tank (a) |
| -Leak detection | NA | yes (e, f) | yes (b) | 8 (c) | NA |
| -Floor drain | NA | yes (e, f) | yes (b) | NA | Floor drain assumed operable, no occurrence noted |

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/ present | Operable | Equipment Condition | Comments |
|---|---|---|---|--|--|
| Legend | Supply air unscheduled ID indicators | Is equipment existing/ present. Provide reference. | Is equipment operable/ present. Provide reference. | Equipment condition. Provide reference. | Name, descriptive information, etc. |
| Distributor Pit | NA | no (a) | NA | NA | Distributor pit is another name for valve pit AP 241 |
| Sluice Pit | NA | no | NA | NA | |
| Heel Pit | NA | no | NA | NA | |
| Leak detection pump pit | OCC, OSC | yes (a) | NA | NA | OCC is the leak detection pump pit for tanks 101-104, OSC is the leak detection pump pit for tanks 105-108 (b) |
| -Level sensing system (SQC)HF - sump-dp tubes | NA | yes (a, e) | no (a) | not operating as designed | Problem with PVC dip tube piping for compressed air. Intend to fix. (b) |
| -Gammaread monitor | NA | yes (a, e) | no (a) | not operating as designed | Do not intend to repair. Cannot be disconnected because of ICRUSO issues. (b) |
| -Leak detection system | NA | yes (a, e) | yes (a) | B (c) | NA |
| -Level element | NA | yes (a, e) | yes (a) | B (c) | NA |
| -Temperature | NA | yes (a, e) | not (a) | suspect | 1 probe per system, data acquisition system is chronically bad. Data is collected manually. (a,b) |
| -Sump | NA | yes (a, e) | yes (b) | NA | NA |
| -Drain | NA | yes (a, e) | yes (b) | NA | NA |
| Dry walls | NA | no (a) | NA | NA | NA |
| Combiner pit | NA | no (a) | NA | NA | NA |

NA = Not applicable or not required
5/31/88

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/ present | Operable | Equipment Condition | Comments |
|----------------------------|-----------------------------------|---|---|---|--|
| Legend | Supply any associated ID numbers. | In equipment existing? Provide reference. | In equipment operable? Provide reference. | Equipment condition. Provide reference. | Notes, describe information, etc. |
| Sludge pump pit | NA | no (a) | NA | NA | NA |
| Salt well pump pit | NA | no (a) | NA | NA | NA |
| Drain pit | OOD | yes (a) | NA | NA | Required for tank 241-AP-103 only |
| -Drain | NA | yes (b) | yes (b) | 8 (c) | NA |
| -Leak detection | NA | yes (b) | yes (b) | 9 (c) | NA |
| Valve PI | 241-AP | yes (a) | NA | NA | NA |
| -Leak detection | NA | yes (b) | yes (a) | 8 (c) | NA |
| -Valve position indication | NA | yes (a) | no* (a) | | *Manual verification method used. Liner don't work, rewire here. (a,b) |
| -Pipeline flow monitoring | NA | no (a) | NA | NA | NA |
| -Drain | NA | yes (b) | yes (b) | NA | NA |
| -SI lines | SL5006510 | yes (a, f) | yes (b) | NA | NA |
| -SN lines | SN8006810 | yes (a) | yes (b) | NA | NA |
| -Pressure switches | NA | yes (f) | yes (b) | 8 (c) | NA |
| -Drain line flow alarm | NA | yes (f) | yes (b) | 8 (c) | NA |
| Feed Pump PI | 241-AP-02D | yes (a) | No (b) | NA | Pump pit exists, but are not operable (support for grad program) (b) |

NA = Not applicable or not required
5/3/86

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/ Present | Operable | Equipment Condition | Comments |
|-------------------------------------|-------------------------------------|--|--|---|---|
| Legend | Supply any associated ID references | Is equipment existing/ present. Provide references | Is equipment operable/ present. Provide references | Equipment condition. Provide references | Name, descriptive information, etc. |
| Water Pump Pit | 07D, 07E, 07F | Yes (a) | No (b) | NA | Pits exist, but are not operable (support for ground program) (b) |
| Service Pit | 241-AP-001 (Service Bldg.) | Yes (a) | Yes (b) | 8 (c) | Flow water tied to AP farm (a) |
| -Service pit instrumentation | | | | | |
| -Flow monitoring | NA | yes (a, g, k) | yes (a) | 8 (c) | NA |
| -Red monitor | NA | yes (a, g, k) | yes (a) | 8 (c) | NA |
| -Backflow preventer | NA | yes (a, g, k) | yes (a) | NA | Backflow prevention SP-1 and SP-2 service 3" RWHM to 241 AP tank farm |
| -Leak detection | NA | yes (a, g, k) | yes (a) | 8 (c) | NA |
| -Sump level element | NA | yes (a, g, k) | yes (a) | 8 (c) | NA |
| -Pressure Gauge | NA | yes (a, g, k) | yes (a) | 8 (c) | NA |
| -Sump | NA | yes (g, k) | yes (a) | NA | NA |
| -Drain | NA | yes (g, k) | yes (a) | NA | NA |
| -Heater | NA | yes (k) | yes (a) | NA | Space heater within Bld. enclosure |
| Flush pit | 241-AP | yes (a) | yes (a) | NA | NA |
| -Flow monitoring | NA | no (a) | NA | NA | no flow monitoring instrumentation in flush pit |
| -Leak detection | NA | yes (g, k) | yes (a, b) | 8 (c) | NA |
| -RVV pressure switch | NA | yes (g, k) | yes (a, b) | 8 (c) | NA |
| -Limit switch | NA | yes (g, k) | yes (b) | 8 (c) | NA |
| -Drain | NA | yes (g, k) | yes (b) | NA | 3" DR (715404) sump drain |

NA = Not applicable or not required
5/3/86

TABLE 4
FACILITY CONFIGURATION

| System | System Equipment Identifier | Existing/present | Operable | Equipment Condition | Comments |
|---|---|--|--|---|--|
| Legend | Supply any associated ID numbers | In equipment existing Partial. Provide reference. | In equipment operable Partial. Provide reference. | Equipment condition Provide reference. | Name, description, identifier, etc. |
| -Sump | NA | yes (f) | yes (b) | NA | NA |
| -Barrier dams | NA | yes (b) | yes (b) | NA | NA |
| -Level element | NA | yes (b) | yes (a, b) | g (c) | NA |
| -Header | NA | yes (b) | yes(f, b) | NA | Space header within pit box enclosure |
| -Radiation monitor | NA | no (b) | NA | NA | NA |
| Transfer Piping | | | | | |
| Transfer Line | SS508 (skum) | yes | yes (b) | NA | Encased transfer lines (3" in 6") from AW to AP valve box-see Table 7 |
| Transfer Line | SS10 (skum) | yes | yes (b) | NA | Encased transfer lines (3" in 6") from AW to AP valve box-see Table 7 |
| Transfer Line | SN809 (supernat) | yes | yes (b) | NA | Encased transfer lines (3" in 6") from AW to AP valve box-see Table 7 |
| Transfer Line | SN810 (supernat) | yes | yes (b) | NA | Encased transfer lines (3" in 6") from AW to AP valve box-see Table 7 |
| Buildings | | | | | |
| Compressor Building | 241-AP-701 | yes (a) | NA | NA | Physical building |
| Hoisting Tanks | NA | yes (a) | yes (a) | NA | Two tanks in building (a). |
| Flammable storage cabinet | NA | yes (a) | NA | NA | Cabinet not opened (a). Assumed to contain small quantities of flammable materials (paint cans, cleaners, etc) |
| Instrument Building | 241-AP-271 | yes (a) | NA | NA | Physical building |
| Adjustable Frequency AC Drive for AP-102 Mixer pump | NA | yes (a) | no (a, b) | NA | Unit present within facility, never hoisted up |
| Instrument Building Instrumentation | | | | | |

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/present | Operable | Equipment Condition | Comments |
|--|----------------------------------|--|--|--|--|
| Legend | Supply any associated ID numbers | Is equipment existing? Yes/No. Provide reference. | Is equipment operable? Yes/No. Provide reference. | Equipment condition. Provide reference. | Notes, description, references, etc. |
| CASS connection | NA | yes (b) | yes (b) | 6 (c) | Instrumentation Bld. interface with CASS |
| CAM | NA | yes (e) | yes (e) | NA | Personal monitoring (b) within Bld. |
| Remote alarm location(s) (describe in comment section) | NA | yes (e) | yes (e) | NA | Alarms are transmitted to the 242-A Evaporator. (b) |
| Miscellaneous Instrumentation | | | | | |
| Heat trace | NA | yes (e) | no ^a (e) | NA | * Heat traces are all over for winterization. Turned off in summer. Some pipelines heat trace section do not work. Trying to justify decontaminating system. (b) |
| Steam | | | | | |
| Steam traps | NA | no (a,b) | NA | NA | No steam present in AP tank farm |
| Miscellaneous Facilities | | | | | |
| Electrical Substation | 241-AP | yes (e) | yes (e) | 6 (c) | 13.8kVA overhead power to 1000 kVA transformer feeds step-down (600V) transformer at instrument Bld. |
| Motor Control Station | MCC-241-AP | yes (e) | yes (e) | 6 (c) | Motor control station at instrument Bld. |
| Bottle Storage Area | NA | yes (e) | NA | NA | Bottles inventoried under Table 1 Material Inventory |
| Heat Trace Transformer/Panel | NA | yes (e) | yes (b) | NA | Assumed operable. Heat trace for the supramale lines. (b) |
| Change Trailer | MO 015 | yes (e) | yes (e) | NA | Two bottles of Antistatene outside change trailer (e) to support the PCMB1 personnel radiation monitor. |

a = field walkdown, 3/23/98, PK Brodman, S Brews, KA White, C Sogal.
b = interview with cognizant engineer, KA White, 3/25/98.
c = 241 AP Condition Assessment Survey (non released document)

Tank Farm or Miscellaneous Facility AP Tank Farm.

- d = H2-005142 Rev. 1.
- e = H2-004871 Rev. 8.
- f = H2-004872 Rev. 6.
- g = H2-004873 Rev. 4.
- h = H2-004883 Rev. 4.
- i = H2-004884 Rev. 5.
- j = H2-005291 Rev. 4.
- k = H2-005291 Rev. 3.
- l = H2-005292 Rev. 0.
- m = H2-005271 Rev. 2.
- n = H2-005291 Rev. 4.
- o = H2-005291 Rev. 4.
- p = H2-005391 Rev. 3.
- q = H2-005311 Rev. 3.
- r = H2-005321 Rev. 3.
- s = H2-005331 Rev. 3.

**TABLE 4
FACILITY CONFIGURATION**

WHC-SD-WM-HIE-007
Rev. 0

NA = Not applicable or not required
5/31/86

TABLE 5
RADIATION SOURCE/PHYSICAL PROTECTION

| System | System ID | Radiation Source ≥100mSv/hr | Protective Feature | Description of Protective Feature | Comments |
|-----------------------------|---|---|--|--|---|
| Legend/Basis | Use any unclassified ID numbers. Provide references. | Source of hazard ≥ 100mSv/hr? Yes or No. Provide references. | Physical features (shielding, concrete, lead, etc.) Provide references. | Thickness of concrete, number of penetrations, etc. | Note |
| Tanks | 101 through 106 | yes | Soil/gravel cover | 5.7 ft above tank dome crown (D1) | Soil cover maintained for shielding/loading |
| Annulus Pump Pits | 241-AP-01B thru 06B | yes | cover blocks (e) | 1.5# thick, 2-4" penetrations (f) | good condition (e) |
| Central Pump Pits | 241-AP-01A thru 06A | yes | cover blocks (e) | 1.5# thick, 1-2" cable slot penetration (c) | good condition (e) |
| Distributor Pit | NA | NA | NA | NA | Does not exist in AP |
| Sluice Pit | NA | NA | NA | NA | Does not exist in AP |
| Feed Pit | NA | NA | NA | NA | Does not exist in AP |
| Leak detection pump pit | 00C, 06C | yes | cover blocks (e) | 1.5# thick, 1-2", 1-4" penetrations (b) | good condition (e) |
| Condenser pit | NA | NA | NA | NA | Does not exist in AP |
| Sludge pump pit | NA | NA | NA | NA | Does not exist in AP |
| Salt well pump pit | NA | NA | NA | NA | Does not exist in AP |
| Drain pit | 00D | yes | cover blocks (e) | 1.5# thick, 1/4" cable slot penetration (f) | good condition (e) |
| Valve pit | 241-AP | yes | cover blocks (e) | 1.5# thick, 3/2-4" penetrations (e) | good condition (e) |
| Primary seal pot pit | 241-AP K1 | yes | cover blocks (e) | 30" metal plate (i) | good condition (e) |
| Annulus seal pot pit | 241-AP K2 | yes | cover blocks (e) | 30" metal plate (i) | good condition (e) |
| Feed pump pit | 241-AP-02A, -02D | yes | cover blocks (e) | 3-4" penetrations; cover block thickness 1.5 feet (f) | good condition (e) |
| Filter pump pit | 241-AP-07D, -07E, -07F | yes | cover blocks (e) | 3-4" penetrations; cover block thickness unknown | good condition (e) |
| Ventilation instrument pits | AP VIP 1 and 2 | no | covers (e) | 3/16 thick aluminum alloy (g) | good condition (e) |
| Transfer pit | same as valve pit 241 AP | NA | NA | NA | NA |

NA = Not applicable or not required
5/3/98

TABLE 5
RADIATION SOURCE/PHYSICAL PROTECTION

| System | System ID | Radiation Source ≥100mSv | Protective Feature | Description of Protective Feature | Comments |
|-------------------------------|---|--|---|--|---|
| Legend/Notes→ | NA = any unclassified ID radiation. Provide reference. | Source of hazard ≥ 400mSv/hr? Yes or No. Provide reference. | Physical features shielding, concrete, steel etc. Provide reference. | Thickness of concrete, number of penetrations, etc. | Notes |
| Service pit | NA (see Service Bldg) | NA | NA | NA | NA |
| Flush pit | 241-AP | no | covers (s) | 12 gaps perished cover, 2-4" penetrations (f) | good condition (s) |
| Dry wells | NA | NA | NA | NA | NA |
| Other pits | NA | NA | NA | NA | NA |
| Division Bases | NA | NA | NA | NA | NA |
| Clean Out Bases | NA | NA | NA | NA | NA for AP Farm |
| Steam System | | | | | |
| -Steam traps | NA | NA | NA | NA | NA |
| HVAC | | | | | |
| -Tank Ventilation Systems | K1 / K2 (f) | yes | K1 HEPA filters and de-aerators have concrete walls around them. (s) | 1.5ft thick walls @ 8.0ft high (f) | K1 = Primary vent system, K2 = annular vent system (s) |
| -Other Ventilation Systems | NA | NA | NA | NA | NA |
| Transfer Lines | SL509, SL510, SN609, SN610 | NA | NA | NA | For Transfer Lines refer to Table 7. |

NA = Not applicable or not required
5/3/96

TABLE 5
RADIATION SOURCE/PHYSICAL PROTECTION

| System | System ID | Radiation Source ≥100mSv/hr | Protective Feature | Description of Protective Feature | Comments |
|------------------------------|--|--|--|---|--|
| Legend Boxes→ | Link any associated ID numbers. Provide reference. | Source or Isotopes? 238U/235U/239Pu? Yes or no. Provide reference. | Physical features (shielding, containment, passivation, etc.) Provide reference. | Thickness of containment, number of passivation, etc. | Notes |
| Bulk Gas | | | | | |
| -Change trailer | NA | No | NA | NA | 1 change trailer |
| -Satellite accumulation area | NA | No (e) | See comment | NA | Inventories removed when filled, transported to 200-E 90 day storage facility. |
| - Service Building | 241-AP-901 (e) | no (e) | NA | NA | radiation monitor to check water (e) |
| -Compressor Building | 241-AP-701 (e) | no (e) | NA | NA | NA |
| -Retriment Building | 241-AP-271 (e) | no (e) | NA | NA | CAM in building (e) |

(D)1 CS03T-151.00007 Rev. H-17
 (e) = See reference 322268, PK Brodman, S Brown, KA White, and C Segel.
 (f) = Drawing H-2-90445
 (g) = Drawing H-2-90446
 (h) = Drawing H-2-90447
 (i) = Drawing H-2-90448
 (j) = Drawing H-2-90449
 (k) = Drawing H-2-90450
 (l) = Drawing H-2-90451
 (m) = Drawing H-2-90456
 (n) = Drawing H-2-90633
 (o) = Drawing H-2-90638
 (p) = Information from Kelle A White, June 1998.

NA = Not applicable or not required
 5/31/98

TABLE 6
OSR/OSD SAFETY CONTROLS

AP

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|--|-----------|-----------|--|--------------|----------|
| Tanks - Double-Shell Tanks 241-AP-101 through 106 | NA | NA | NA | NA | |
| Tank Waste Instrumentation | NA | NA | NA | NA | |
| Specific gravity instr. system | NA | NA | NA | NA | |
| Temperature probes (T/C Free) | SL 2.2 | NA | TE-OR-A-03 TO-001-084 TO-001-180 TO-020-595 TO-040-085 TO-040-200 TO-040-660 TO-060-230 TO-200-460 TO-200-464 TO-220-019 TO-220-027 TO-220-095 TO-220-098 TO-230-085 TO-230-089 TO-230-133 TO-230-141 TO-230-142 TO-230-143 TO-230-144 TO-230-274 TO-270-007 TO-270-011 TO-270-012 TO-270-014 TO-270-040 TO-270-221 | FV DR | |

05/31/96

NA = Not applicable or not required

B-93

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AP

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|------------|-------------------------|--|--------------|------------------------------|
| WHC-SD-WM-OSR-016 | SL 2.2 | NA | TO-270-285 TO-270-281 TO-270-252 TO-270-266 TO-270-824 TO-400-200 TO-430-480 TO-430-485 TO-440-002 | FV DR | |
| | LCO 3.2.1 | NA | NA | FV | LCO - Not Implemented by ECN |
| | LCO 3.2.2 | NA | NA | NA | ECN 618396 |
| WHC-SD-WM-OSR-016 | SR 3.2.2.1 | NA | TE-OR-A-03 | FV | ECN 618396 |
| | | | TO-001-164 | | |
| | | | TO-440-660 | | |
| | | | TO-220-065 | | |
| | | | TO-220-096 | | |
| | | | TO-230-095 | | |
| | | | TO-230-099 | | |
| | | | TO-230-133 | | |
| | | | TO-230-141 | | |
| | | | TO-230-142 | | |
| | | | TO-230-143 | | |
| | | | TO-230-144 | | |
| | | | TO-270-007 | | |
| TO-270-011 | | | | | |
| TO-270-012 | | | | | |
| TO-270-035 | | | | | |
| TO-270-040 | | | | | |
| TO-400-200 | | | | | |
| TO-430-480 | | | | | |
| TO-430-485 | | | | | |
| TO-440-002 | | | | | |
| WHC-SD-WM-OSR-016 | NA | OSD-T-151-00007 7.2.8.a | TO-001-162 TO-001-164 TO-040-760 | NA | |

05/31/96

NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AP

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|-----------|-------------------------|--|--------------|----------|
| | NA | OSD-T-151-00007 7.2.6.a | TO-200-010 TO-220-085 TO-230-085 TO-230-133 TO-230-274 TO-270-040 TO-270-204 TO-270-221 TO-270-236 TO-270-252 TO-270-266 TO-270-828 TO-270-828 TO-400-200 TO-430-480 TO-600-080 | NA | |
| | NA | OSD-T-151-00007 7.2.6.b | TO-001-182 TO-001-184 TO-040-760 TO-200-010 TO-220-085 TO-230-085 TO-230-133 TO-230-274 TO-270-040 TO-270-204 TO-270-221 TO-270-236 TO-270-252 TO-270-266 TO-270-828 TO-270-828 TO-400-200 TO-430-480 TO-600-080 | NA | |
| | NA | OSD-T-151-00007 7.2.6.c | TO-001-182 TO-001-184 TO-040-760 | NA | |

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AP

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|-----------------------------|-------------------------|--|--------------|----------|
| | NA | OSD-T-151-00007 7.2.6.c | TO-200-010 TO-220-085 TO-230-085 TO-230-133 TO-230-274 TO-270-040 TO-270-204 TO-270-221 TO-270-236 TO-270-252 TO-270-266 TO-270-826 TO-270-828 TO-400-200 TO-430-480 TO-600-080 | NA | |
| Liquid level (Primary) | WHC-SD-WM-OSR-016 SL 2.1 | NA | TF-OR-A-93 TO-020-330 TO-020-820 TO-040-200 TO-060-230 TO-060-340 TO-220-018 TO-220-065 TO-230-065 TO-230-069 TO-230-133 TO-230-142 TO-230-143 TO-230-274 TO-440-002 | FV DR | |
| | WHC-SD-WM-OSR-016 LCO 3.1.2 | NA | ARP-T-231-00102 ARP-T-231-00103 ARP-T-231-00105 ARP-T-231-00106 ARP-T-271-00101 ARP-T-271-00102 | NA | |

TABLE 6
OSR/OSD SAFETY CONTROLS

AP

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|-----------|-----------|--|--------------|----------|
| WHC-SD-WM-OSR-016 | LCO 3.1.2 | NA | ARP-T-271-00103 ARP-T-271-00104 ARP-T-271-00105 ARP-T-271-00106 ARP-T-271-00107 ARP-T-271-00108 TF-OR-A-03 TO-001-064 TO-001-180 TO-001-184 TO-020-025 TO-020-330 TO-020-595 TO-020-820 TO-040-200 TO-060-105 TO-060-230 TO-060-340 TO-200-460 TO-220-027 TO-220-095 TO-220-096 TO-230-095 TO-230-099 TO-230-133 TO-230-142 TO-230-143 TO-230-144 TO-230-274 TO-270-007 TO-270-012 TO-270-014 TO-270-235 TO-270-251 TO-270-252 TO-270-524 TO-400-200 TO-430-460 TO-430-465 | NA | |

05/31/96

NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AP

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|------------------------------|-------------------------|--|--------------|----------|
| WHC-SD-WM-OSR-016 | COO 3.1.2 | NA | TO-440-002 | NA | |
| WHC-SD-WM-SAR-016 | 11.5 | OSD-T-151-00007 7.2.2.a | TF-OR-A-03 TO-001-182 TO-020-240 TO-020-420 TO-020-820 TO-040-580 TO-230-095 TO-230-274 TO-270-204 TO-270-221 TO-270-236 TO-270-252 TO-270-266 TO-270-826 TO-270-828 | NA | |
| Liquid level (Backup) | WHC-SD-WM-SAR-016 11.5 | OSD-T-151-00007 7.2.2.a | TE-OR-A-03 TO-001-182 TO-020-240 TO-020-420 TO-020-820 TO-040-580 TO-230-095 TO-230-274 TO-270-204 TO-270-221 TO-270-236 TO-270-252 TO-270-266 TO-270-826 TO-270-828 | NA | |
| High level probe | WHC-SD-WM-OSR-016 SR 3.1.2.1 | NA | TF-OR-A-03 TO-001-084 TO-001-180 TO-001-184 | NA | |

B-98

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

AP

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|-------------------------------------|------------|-----------|--|--------------|----------|
| WHC-SD-WM-OSR-016 | SR 3.1.2.1 | NA | TO-020-025 TO-020-330 TO-020-595 TO-020-820 TO-040-200 TO-060-340 TO-200-400 TO-200-460 TO-220-065 TO-220-066 TO-230-065 TO-230-066 TO-230-069 TO-230-133 TO-230-141 TO-230-142 TO-230-143 TO-230-144 TO-270-007 TO-270-012 TO-270-014 TO-270-236 TO-270-251 TO-270-352 TO-400-200 TO-430-480 TO-430-485 TO-440-002 | NA | |
| Tank primary diff. pressure monitor | SL 2.3 | NA | TF-FT-236-001 TF-FT-275-001 TO-040-035 TO-060-101 TO-060-230 TO-060-340 TO-230-065 TO-230-133 TO-230-142 | FV DR | |
| WHC-SD-WM-OSR-016 | SL 2.4 | NA | TF-FT-236-001 | FV DR | |

05/31/96

NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AP

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|-----------|-----------|--|--------------|----------|
| WHC-SD-WM-OSR-016 | SL 2.4 | NA | TF-OR-A-03 TO-040-095 TO-060-101 TO-060-230 TO-060-340 TO-230-095 TO-230-095 TO-230-133 TO-230-142 | FV DR | |
| WHC-SD-WM-OSR-016 | LCO 3.3.1 | NA | ARP-T-231-00102 ARP-T-231-00103 ARP-T-231-00104 ARP-T-231-00105 ARP-T-231-00106 ARP-T-271-00101 ARP-T-271-00102 ARP-T-271-00104 ARP-T-271-00105 ARP-T-271-00106 ARP-T-271-00107 ARP-T-271-00108 TF-FI-239-001 TF-FI-279-001 TO-001-084 TO-001-184 TO-040-095 TO-060-101 TO-060-230 TO-060-340 TO-200-019 TO-200-464 TO-220-027 TO-220-095 TO-230-095 TO-230-099 TO-230-133 TO-230-141 TO-230-142 | FV DR | |

05/31/96

NA = Not applicable or not required

B-100

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility _____ AP _____

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|------------|-----------------------|---|--------------|----------|
| WHC-SD-WM-OSR-016 | LCO 3.3.1 | NA | TO-280-148 TO-280-144 TO-280-274 TO-270-007 TO-270-011 TO-270-012 TO-270-235 TO-270-824 TO-400-200 TO-430-480 | FV DR | |
| WHC-SD-WM-OSR-016 | LCO 3.3.2 | NA | ARP-T-231-00101 ARP-T-231-00105 ARP-T-231-00108 ARP-T-271-00102 ARP-T-271-00103 ARP-T-271-00104 ARP-T-271-00105 ARP-T-271-00106 ARP-T-271-00107 ARP-T-271-00108 ARP-T-601-00295 TF-OR-A-03 TO-060-035 TO-060-101 TO-060-230 TO-060-340 TO-060-085 TO-230-133 TO-230-142 | FV DR | |
| WHC-SD-WM-OSR-016 | SR 3.3.2.1 | NA | ARP-T-231-00101 TF-OR-A-03 TO-060-035 TO-060-101 TO-060-340 | FV DR | |
| WHC-SD-WM-SAR-016 | 11.6 | OSD-T-151-00007 7.2.5 | TO-060-105 TO-060-341 | NA | |

05/31/96
NA = Not applicable or not required
B-101

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AP

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|---|-----------|-----------------------|--|--------------|---------------------------|
| | 11.6 | OSD-T-151-00007 7.2.5 | TO-400-245 | NA | |
| Gas monitoring / SHMS | NA | NA | NA | NA | Does not exist in AP Farm |
| Tank Annulus Instrumentation | NA | NA | NA | NA | |
| Leak detection manual taps (conductivity probe) | 11.4 | OSD-T-151-00007 7.2.9 | ARP-T-271-00101 ARP-T-271-00102 ARP-T-271-00103 ARP-T-271-00104 ARP-T-271-00105 ARP-T-271-00106 ARP-T-271-00107 ARP-T-271-00108 TO-001-184 TO-020-210 TO-040-580 TO-060-185 TO-060-240 TO-060-341 TO-060-065 TO-220-069 TO-230-133 TO-230-274 TO-270-040 TO-400-200 TO-430-480 | NA | |
| CAM Read Monitor | 11.4 | OSD-T-151-00007 7.2.9 | ARP-T-271-00101 ARP-T-271-00102 ARP-T-271-00103 ARP-T-271-00104 ARP-T-271-00105 ARP-T-271-00106 | NA | |

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AP

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|-------------------------------------|-----------|------------------------|--|--------------|---------------------------|
| WHC-SD-WM-SAR-016 | 11.4 | OSD-T-151-00007 7.2.9 | AFP-T-271-00107 AFP-T-271-00108 TO-001-184 TO-020-210 TO-040-580 TO-060-165 TO-080-240 TO-060-341 TO-220-085 TO-230-089 TO-230-133 TO-230-274 TO-270-040 TO-400-200 TO-430-480 | NA | |
| Pump pit leak detection | 11.7 | OSD-T-151-00007 7.2.10 | TO-001-184 TO-220-085 TO-230-089 TO-230-133 TO-230-274 TO-270-252 TO-400-200 TO-430-480 TO-450-150 | NA | |
| Temperature | NA | NA | NA | NA | |
| Tank annulus diff. pressure monitor | NA | NA | NA | NA | |
| Tank Structure Instrumentation | NA | NA | NA | NA | |
| Thermocouple data acquisition | AC 5.28.1 | OSD-T-151-00007 7.2.7 | TF-OR-A-03 TO-270-040 | NA | AC-Not implemented by ECN |

05/31/96

NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AP

| System/Structures/Components | WHC-SD-WM-OSR-016 | OSR Limit AC | 5.2b.1 | OSD-T-151-00007 | OSD Limit 7.2.7 | Implementing Procedures TO-600-080 | Verification | Comments |
|------------------------------|-------------------|-----------------|--------|-----------------|--------------------|--|--------------|---------------------------|
| Instrument Enclosures | | NA | | | NA | NA | NA | |
| Air lift circulators | | NA | | | NA | NA | NA | Does not exist in AP Farm |
| Steam coil | | NA | | | NA | NA | NA | Does not exist in AP Farm |
| Calsson | | NA | | | NA | NA | NA | Does not exist in AP Farm |
| HVAC Systems | | NA | | | NA | NA | NA | |
| Ventilation System(s) | | NA | | | NA | NA | NA | |
| Passive | | NA | | | NA | NA | NA | |
| Active | | NA | | OSD-T-151-00007 | 7.3.2 | TO-001-182 TO-001-184 TO-020-155 TO-020-925 TO-060-230 TO-060-340 TO-060-403 TO-060-500 TO-060-503 TO-060-516 TO-230-085 TO-230-133 TO-230-274 TO-270-204 TO-270-221 TO-270-236 | NA | |

05/31/96

NA = Not applicable or not required

B-104

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AP

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|---|-----------------------------|-------------------------|--|--------------|--------------------------------|
| | NA | OSD-T-151-00007 7.3.2 | TO-270-252 TO-270-266 TO-270-826 TO-270-828 | NA | |
| Shared / common vent system? (Describe in comments section) | NA | NA | NA | NA | |
| Exhaust vent/hatchway | NA | NA | NA | NA | |
| Annulus air intake assemblies | NA | NA | NA | NA | |
| Primary air intake assemblies | NA | NA | NA | NA | Does not exist in AP Farm |
| Pre-filters (yes/no) | NA | NA | NA | NA | |
| HEPA filters (how many filters, stages, parallel vs series etc.) | NA | NA | NA | NA | |
| Fans | NA | NA | NA | NA | |
| De-entrainers | NA | NA | NA | NA | |
| Heaters | NA | NA | NA | NA | |
| HVAC instrumentation | WHC-SD-WM-OSR-016 LCO 3.4.1 | OSD-T-151-00007 7.3.1.A | TO-080-101 TO-080-104 TO-080-105 TO-080-230 | NA | LCO- Not Implemented by ECN |

05/31/96

NA = Not applicable or not required

B-105

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AP

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|-------------------------------|-----------|--------------------------|--|--------------|----------|
| WHC-SD-WM-OSR-016 | LCO 3.4.1 | OSD-T-151-00007 7.3.1.A | TO-060-240 TO-060-340 TO-060-341 | NA | |
| | NA | OSD-T-151-00007 7.3.1.B | TO-060-105 TO-060-230 TO-060-240 TO-060-340 TO-060-341 | NA | |
| Main stack monitor | NA | OSD-T-151-00007 7.3.1.D | TO-060-240 | NA | |
| Stack monitor | NA | OSD-T-151-00031 31.2.2.2 | TO-040-590 | NA | |
| Primary header pressure | NA | OSD-T-151-00007 7.3.1.D | TO-060-240 | NA | |
| Annulus header pressure | NA | NA | NA | NA | |
| Primary Seal Pot Pft | NA | NA | NA | NA | |
| Primary Seal Pot Pft Contents | NA | NA | NA | NA | |
| Sump pump | NA | NA | NA | NA | |
| Sump leak detection | NA | NA | NA | NA | |
| Level element | NA | NA | NA | NA | |

B-106

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AP

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|-------------------------------------|-----------|-----------|-------------------------|--------------|----------|
| Drain | NA | NA | NA | NA | |
| Heat trace | NA | NA | NA | NA | |
| Annulus Seal Pot Pit | NA | NA | NA | NA | |
| Annulus Seal Pot Pit Contents | NA | NA | NA | NA | |
| Level element | NA | NA | NA | NA | |
| Drain | NA | NA | NA | NA | |
| Ventilation Instrument Pit | NA | NA | NA | NA | |
| Ventilation Instrument Pit Contents | NA | NA | NA | NA | |
| TBD | NA | NA | NA | NA | |
| Pits | NA | NA | NA | NA | |
| Annulus Pump Pit | NA | NA | NA | NA | |
| Annulus Pump Pit Contents | NA | NA | NA | NA | |
| Floor drain | NA | NA | NA | NA | |

05/31/96

NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AP

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|---------------------------|---------------------------|--|--------------|---------------------------|
| Sump | NA | NA | NA | NA | |
| Leak detection | WHC-SD-WM-SAR-016 11.7 | OSD-T-151-00007 7.2.10 | TO-001-184 TO-220-095 TO-230-089 TO-230-133 TO-230-274 TO-270-252 TO-400-200 TO-430-480 TO-450-150 | NA | |
| Central Pump Pit | NA | NA | NA | NA | |
| Central Pump Pit Contents | NA | NA | NA | NA | |
| Leak detection | WHC-SD-WM-SAR-016 11.7 | OSD-T-151-00007 7.2.10 | TO-001-184 TO-220-095 TO-230-089 TO-230-133 TO-230-274 TO-270-252 TO-400-200 TO-430-480 TO-450-150 | NA | |
| Floor drain | NA | NA | NA | NA | |
| Distributor Pit | NA | NA | NA | NA | Does not exist in AP Farm |
| Distributor Pit Contents | NA | NA | NA | NA | Does not exist in AP Farm |

05/31/96

NA = Not applicable or not required

B-108

TABLE 6
OSR/OSD SAFETY CONTROLS

AP

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|---|-----------|-------------------------|--|--------------|---------------------------|
| Sluice Pit | NA | NA | NA | NA | Does not exist in AP Farm |
| Sluice Pit Contents | NA | NA | NA | NA | Does not exist in AP Farm |
| Heel Pit | NA | NA | NA | NA | Does not exist in AP Farm |
| Heel Pit Contents | NA | NA | NA | NA | Does not exist in AP Farm |
| Leak detection pump pit | NA | NA | NA | NA | |
| Leak Detection Pit/Sump Instrumentation - OSC and OSC | NA | NA | NA | NA | |
| Level sensing system (SpG-WF sump)- dip tubes | NA | OSD-T-151-00007 7.2.2.b | TF-OR-A-03 TO-020-240 TO-020-420 TO-020-820 TO-040-590 TO-230-095 TO-270-204 TO-270-221 TO-270-238 TO-270-252 TO-270-266 TO-270-828 TO-270-828 | NA | |
| Gamma rad monitor | NA | NA | NA | NA | |

05/31/96

NA = Not applicable or not required

B-109

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AP

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|----------------------------------|-----------|-----------|-------------------------|--------------|---------------------------|
| Leak detection system | NA | NA | NA | NA | |
| Level element | NA | NA | NA | NA | |
| Temperature | NA | NA | NA | NA | |
| Sump | NA | NA | NA | NA | |
| Drain | NA | NA | NA | NA | |
| Dry wells | NA | NA | NA | NA | |
| Condenser pit | NA | NA | NA | NA | Does not exist in AP Farm |
| Condenser Pit Contents | NA | NA | NA | NA | Does not exist in AP Farm |
| Sludge pump pit | NA | NA | NA | NA | Does not exist in AP Farm |
| Sludge pump pit contents | NA | NA | NA | NA | Does not exist in AP Farm |
| Salt well pump pit | NA | NA | NA | NA | Does not exist in AP Farm |
| Saltwell Pumping Instrumentation | NA | NA | NA | NA | Does not exist in AP Farm |
| Hydrogen monitor | NA | NA | NA | NA | Does not exist in AP Farm |

05/31/96

NA = Not applicable or not required

B-110

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AP

| System/Structures/Components Weight factor / specific gravity | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|--|---------------------------|---------------------------|--|--------------|---------------------------|
| Drain pit | NA | NA | NA | NA | Does not exist in AP Farm |
| Drain PRT Contents | NA | NA | NA | NA | |
| Drain | NA | NA | NA | NA | |
| Leak detection | WHC-SD-WM-SAR-016 11.7 | OSD-T-151-00007 7.2.10 | TO-001-184 TO-220-095 TO-230-099 TO-230-133 TO-230-274 TO-270-252 TO-400-200 TO-430-480 TO-450-150 | NA | |
| Valve PRT / Transfer PRT / Diversion Box | NA | NA | NA | NA | |
| Valve PRT/Transfer pW Diversion Box Contents | NA | NA | NA | NA | |
| Leak detection | WHC-SD-WM-SAR-016 11.7 | OSD-T-151-00007 7.2.10 | TO-001-184 TO-220-095 TO-230-099 TO-230-133 TO-230-274 TO-270-252 TO-400-200 TO-430-480 | NA | |

05/31/96
NA = Not applicable or not required
B-111

TABLE 6
OSR/OSD SAFETY CONTROLS

AP

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit WHC-SD-WM-SAR-016 | OSR Limit 11.7 | OSD Limit OSD-T-151-00007 7.2.10 | Implementing Procedures TO-460-150 | Verification | Comments |
|------------------------------|--------------------------------|-------------------|-------------------------------------|---------------------------------------|--------------|---------------------------|
| Valve position indication | NA | NA | NA | NA | NA | |
| Pipeline flow monitoring | NA | NA | NA | NA | NA | Does not exist In AP Farm |
| Drain | NA | NA | NA | NA | NA | |
| SL lines | NA | NA | NA | NA | NA | |
| SN lines | NA | NA | NA | NA | NA | |
| Pressure switches | NA | NA | NA | NA | NA | |
| Drain line flow alarm | NA | NA | NA | NA | NA | |
| Feed Pump Pit | NA | NA | NA | NA | NA | |
| Feed Pump Pit Contents | NA | NA | NA | NA | NA | |
| Mixer Pump Pit | NA | NA | NA | NA | NA | |
| Mixer Pump Pit Contents | NA | NA | NA | NA | NA | |
| Service Pit | NA | NA | NA | NA | NA | |

B-112

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AP

| System/Structures/Components/ Service pit instrumentation | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|--|-----------|------------------------|--|--------------|----------|
| Flow monitoring | NA | NA | NA | NA | |
| Radi monitor | NA | NA | NA | NA | |
| Backflow preventer | NA | NA | NA | NA | |
| Leak detection | 11.7 | OSD-T-151-00007 7.2.10 | TO-001-184 TO-220-085 TO-230-088 TO-230-133 TO-230-274 TO-270-252 TO-400-200 TO-480-480 TO-480-150 | NA | |
| Sump level element | NA | NA | NA | NA | |
| Pressure Gauges | NA | NA | NA | NA | |
| Sump | NA | NA | NA | NA | |
| Drain | NA | NA | NA | NA | |
| Heater | NA | NA | NA | NA | |
| | | | | | |

05/31/96
NA = Not applicable or not required
B-113

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AP

| System/Structures/Component | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|-----------------------------|-------------------|--------------------------------|--|--------------|----------|
| Push pit | NA | NA | NA | NA | |
| Flow monitoring | NA | NA | NA | NA | |
| Leak detection | WHC-SD-WM-SAR-016 | 11.7 OSD-T-151-00007 7.2:10 | TO-001-184 TO-220-065 TO-230-069 TO-230-133 TO-230-274 TO-270-252 TO-400-200 TO-430-480 TO-450-150 | NA | |
| RW pressure switch | NA | NA | NA | NA | |
| Limit switch | NA | NA | NA | NA | |
| Drain | NA | NA | NA | NA | |
| Sump | NA | NA | NA | NA | |
| Barrier dams | NA | NA | NA | NA | |
| Level element | NA | NA | NA | NA | |
| Heater | NA | NA | NA | NA | |

B-114

05/31/96
N/A = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AP

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|---|-----------|-----------|-------------------------|--------------|----------|
| Radiation monitor | NA | NA | NA | NA | |
| Transfer Piping | NA | NA | NA | NA | |
| Transfer Lines | NA | NA | NA | NA | |
| Buildings | NA | NA | NA | NA | |
| Compressor Building | NA | NA | NA | NA | |
| Holding Tanks | NA | NA | NA | NA | |
| Flammable storage cabinet | NA | NA | NA | NA | |
| Instrument Building | NA | NA | NA | NA | |
| Adjustable Frequency AC Drive for AP-102 Mixer pump | NA | NA | NA | NA | |
| Instrument Building Instrumentation | NA | NA | NA | NA | |
| CASS connection | NA | NA | NA | NA | |
| CAM | NA | NA | NA | NA | |

05/31/96

NA = Not applicable or not required

B-115

TABLE 6
OSR/OSD SAFETY CONTROLS

AP

Tank Farm or Miscellaneous Facility

| System/Structures/Components Remote alarm location(s) (describe in comment section) | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|---|-----------|-----------|-------------------------|--------------|---------------------------|
| Miscellaneous Instrumentation | NA | NA | NA | NA | |
| Heat Trace | NA | NA | NA | NA | |
| Steam | NA | NA | NA | NA | |
| Steam traps | NA | NA | NA | NA | Does not exist in AP Farm |
| Miscellaneous Facilities | NA | NA | NA | NA | Does not exist in AP Farm |
| Electrical Substation | NA | NA | NA | NA | |
| Motor Control Station | NA | NA | NA | NA | |
| Bottle Storage Area | NA | NA | NA | NA | |
| Heat Trace Transformer/Panel | NA | NA | NA | NA | |
| Change Trailer | NA | NA | NA | NA | |

05/31/96

NA = Not applicable or not required

B-116

AW FARM TABLES

**TWRS FSAR MATRIX TABLE
VERIFICATION REVIEW APPROVALS
May 31, 1996**

The following information has been assembled, organized, and documented in the attached TWRS Final Safety Analysis Report (FSAR) Matrix Tables in support of Tank Farms FSAR development. Science Applications International Corporation (SAIC), along with the assistance of ICF Kaiser Hanford and the Westinghouse Hanford Company, assembled this data from controlled drawings and databases, supporting documents, as well as other site documentation. Where possible, the data has been field verified by performing field walkdowns of the particular facility of interest. The data also have been reviewed for its completeness and accuracy by the TWRS Facility Operations Design Authority and the Cognizant Engineer assigned to the respective facility. The information, to the best of the knowledge and the time allotted by the undersigned, is true, accurate, and complete as permitted by the referenced documents and drawings shown on the respective tables. No efforts were attempted or made by the authors and/or reviewers to substantiate the reference information shown on the tables beyond the stated qualifiers as noted on the individual facility matrix tables.

AW Tank Farm
Tank Farm or Facility

Charlotte Zaccone
SAIC Lead

5/31/96
Date

Kate W. Cite
WHC Cognizant Engineer Review

9/4/96
Date

Ronald W. Reed
WHC Design Authority Review

4 Sep 96
Date

* Stone and Webster support

**AW FARM
MASTER CHECKLIST**

| Facility | Type | Material Inventory, (Table 1) | Hazard ID, (Table 2) | Unique Phenomena, (Table 3) | Facility Configuration, (Table 4) | Risk Levels, (Table 5) | Controls, (Table 6) | Comment |
|---------------|--------------|----------------------------------|-------------------------|--------------------------------|--------------------------------------|---------------------------|------------------------|--------------------------------|
| AWFARM | | | | | | | | |
| 241-AW-101 | DST | X | X | X | X | X | X | NA |
| 241-AW-102 | DST | X | X | X | X | X | X | NA |
| 241-AW-103 | DST | X | X | X | X | X | X | NA |
| 241-AW-104 | DST | X | X | X | X | X | X | NA |
| 241-AW-105 | DST | X | X | X | X | X | X | NA |
| 241-AW-106 | DST | X | X | X | X | X | X | NA |
| COB-AW-01 | Cleanout box | NA | NA | NA | NA | NA | NA | Belongs to 242-A Evaporator |
| COB-AW-02 | Cleanout box | NA | NA | NA | NA | NA | NA | Belongs to 242-A Evaporator |
| COB-AW-03 | Cleanout box | NA | NA | NA | NA | NA | NA | Belongs to 242-A Evaporator |
| COB-AW-04 | Cleanout box | NA | NA | NA | NA | NA | NA | Belongs to 242-A Evaporator |
| COB-AW-05 | Cleanout box | NA | NA | NA | NA | NA | NA | Belongs to 242-A Evaporator |
| COB-AW-06 | Cleanout box | NA | NA | NA | NA | NA | NA | Belongs to 242-A Evaporator |
| COB-AW-07 | Cleanout box | NA | NA | NA | NA | NA | NA | Belongs to 242-A Evaporator |
| COB-AW-08 | Cleanout box | NA | NA | NA | NA | NA | NA | Belongs to 242-A Evaporator |

NA = Not applicable or not required
 20196: Master checklist matrix establishes TWRS FSAR associated facilities and specific checklists for categories 1-8. Check appropriate category for individual facility checklists (i.e., 241-AW-101, a material inventory, hazard ID, facility configuration and controls checklist is required based on known facility hazards.)

**AW FARM
MASTER CHECKLIST**

| Facility | Type | Material Inventory, (Table 1) | Hazards ID, (Table 2) | Unique Phenomena, (Table 3) | Facility Configuration, (Table 4) | Risk Levels, (Table 5) | Controls, (Table 6) | Comment |
|-----------|----------------------------------|----------------------------------|--------------------------|--------------------------------|--------------------------------------|---------------------------|------------------------|--------------------------------|
| COB-AW08 | Cleanout box | X | X | NA | X | X | X | NA |
| COB-AW10 | Cleanout box | X | X | NA | X | X | X | NA |
| COB-AW11 | Cleanout box | NA | NA | NA | NA | NA | NA | Belongs to 24G-A Evaporator |
| COB-AW12 | Cleanout box | NA | NA | NA | NA | NA | NA | Belongs to 24G-A Evaporator |
| COB-A-30 | Cleanout box | NA | NA | NA | NA | NA | NA | Belongs to 24G-A Evaporator |
| 241-AW701 | Compressor building | NA | X | NA | X | X | X | NA |
| 241-AW62E | Feed pump pit | X | X | NA | X | X | X | NA |
| 241-AW1 | Flush pit | X | X | NA | X | X | X | NA |
| 241-AW271 | Instrument building | NA | X | NA | X | X | X | NA |
| 241-AW272 | Operations support facility | X | X | NA | X | NA | X | NA |
| 241-AW801 | Service pit | NA | NA | NA | NA | NA | NA | Same facility as 241- AW273 |
| 241-AW273 | Service building | X | X | NA | X | X | X | NA |
| 241-AWHA | Valve pit | X | X | NA | X | X | X | NA |
| 241-AWVB | Valve pit | X | X | NA | X | X | X | NA |
| | Solvents Accumulation Area | X | X | NA | X | X | X | NA |

NA = Not applicable or not required
251050. Master checklist matrix eliminates TMAPS FSAP associated facilities and specific checklists for categories 1-3. Check appropriate category for individual facility checklists (i.e., 241-A-101, a material inventory, hazard ID, facility configuration and controls checklist is required based on known facility hazards.)

**AW FARM
MASTER CHECKLIST**

| Facility | Type | Material Inventory, (Table 1) | Hazards ID, (Table 2) | Unique Phenomena, (Table 3) | Facility Configuration, (Table 4) | Risk Levels, (Table 5) | Controls, (Table 6) | Comment |
|--|--------------------|----------------------------------|--------------------------|--------------------------------|--------------------------------------|---------------------------|------------------------|--|
| Other facilities found during walkdown or drawing search | | | | | | | | |
| | Change trailer | X | NA | NA | X | X | X | NA |
| | Acid sewer manhole | X | NA | NA | X | X | NA | Not part of AW Farm, is now isolated. Provided access to FUREX chemical sewer. |

NA = Not applicable or not required
5/31/98: Master checklist matrix establishes TWRS PSAR associated facilities and specific checklists for categories 1-8. Check appropriate category for individual facility checklists (i.e., 241-A-101, a material inventory, hazard ID, facility configuration and controls checklist is required based on known facility hazards.)

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | | Quantity | Comments |
|---------------------------------|-----------------------------|--|---|-------------------------|---|--|---|----------|----------|
| | | Material Classification | Type | Physical Form | Volume or Activity | Transient VIN | | | |
| Legend Box-> | Capacity: Provide reference | Type of material in the tank per sec. from instructions for administrative: Provide reference. | Supernatants, sludge, solvents, etc. Provide reference. | liquid (L) solid (S) | How much material is present? In gallons, cubic m, volume etc. Provide reference. | Can the material be contained or moved? Yes or no. | Number of tanks containing the material. Provide reference if applicable. | Notes | |
| 1. Tank Contents | | | | | | | | | |
| 241-AM-01 | 1.16 Mgal (S) | DSSF (S) | supernat (S) | liquid (L) | 1043 legal (L) | No | NA | NA | |
| 241-AM-01 | NA | DSSF (S) | solvent (S) | solid (S) | 84 legal (L) | No | NA | NA | |
| 241-AM-02 | 1.16 Mgal (S) | DN (S) | supernat (S) | liquid (L) | 36 legal (L) | No | NA | NA | |
| 241-AM-02 | NA | DN (S) | solvent (S) | solid (S) | 55 legal (L) | No | NA | NA | |
| 241-AM-03 | 1.16 Mgal (S) | DWPD (S) | supernat (S) | liquid (L) | 146 legal (L) | No | NA | NA | |
| 241-AM-03 | NA | DWPD (S) | solvent (S) | solid (S) | 363 legal (L) | No | NA | NA | |
| 241-AM-04 | 1.16 Mgal (S) | DN (S) | supernat (S) | liquid (L) | 834 legal (L) | No | NA | NA | |
| 241-AM-04 | NA | DN (S) | solvent (S) | solid (S) | 260 legal (L) | No | NA | NA | |
| 241-AM-05 | 1.16 Mgal (S) | DWPD (S) | supernat (S) | liquid (L) | 136 legal (L) | No | NA | NA | |
| 241-AM-05 | NA | DWPD (S) | solvent (S) | solid (S) | 260 legal (L) | No | NA | NA | |
| 241-AM-08 | 1.16 Mgal (S) | DN (S) | supernat (S) | liquid (L) | 306 legal (L) | No | NA | NA | |
| 241-AM-08 | NA | DN (S) | solvent (S) | solid (S) | 228 legal (L) | No | NA | NA | |

NA = Not applicable or not required
5/31/88

**TABLE 1
MATERIALS INVENTORY**

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | | Quantity | Comments |
|---------------------------------|---|---|---|----------------------|--|--|--|----------|----------|
| | | Material Classification | Type | Physical Form | Volumes or Activity | Transient VIN | Material Inventory | | |
| Legend Box-> | Capacity: Provide reference references. | Type of material in the tank, pit, etc. (use abbreviations for consistency). Provide reference. | Signatures, dates, amounts, etc. Provide reference. | Vapor, liquid, solid | How much material is present. If gaseous, contain concentrations, rate 1. Provide reference. | On the material to be inventoried or removed, just or not. | Number of bags, drums, etc. Provide reference if applicable. | Notes | |
| 2. Tank Headspace | | | | | | | | | |
| 241-AW-01 | NA | NA | NA | Vapor | 1057 MF 671. No HFS present. [D4] See reference. | No | NA | NA | |
| 241-AW-02 | NA | NA | NA | Vapor | 4683 MF 671. No HFS present. [D4] See reference. | No | NA | NA | |
| 241-AW-03 | NA | NA | NA | Vapor | 3377 MF 671. No HFS present. [D4] See reference. | No | NA | NA | |
| 241-AW-04 | NA | NA | NA | Vapor | 1059 MF 671. No HFS present. [D4] See reference. | No | NA | NA | |
| 241-AW-05 | NA | NA | NA | Vapor | 3911 MF 671. No HFS present. [D4] See reference. | No | NA | NA | |
| 241-AW-06 | NA | NA | NA | Vapor | 3290 MF 671. No HFS present. [D4] See reference. | No | NA | NA | |

NA = Not applicable or not required
5/31/88

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | | Quantity | Comments |
|--|---|--|---|-----------------------|---|---|---|---|----------|
| | | Material Classification | Type | Physical Form | Volume or Activity | Transient Y/N | | | |
| Legend Box -> | Capacity Provide reference | Type of material in the tank pit etc. (see instructions for abbreviating) Provide reference. | Supernatants, sludge, sediments etc. Provide reference. | Major liquid and acid | How much material is present in gallons, cubic etc. Include units. Provide reference. | Can the material be relocated or moved just or not. | Number of bags, containers etc. if applicable. Provide reference if applicable. | Notes | |
| 3. Rail or Truck Trailer Contents | | | | | | | | | |
| None [64] | NA | NA | NA | NA | NA | NA | NA | NA | |
| 4. Contamination on Vehicle | | | | | | | | | |
| None [64] | NA | NA | NA | NA | NA | NA | NA | Contented vehicle staging area present - no vehicles noted. | |
| 5. Contamination on Equipment or Tools | | | | | | | | | |
| None [64] | NA | NA | NA | NA | NA | NA | NA | NA | |
| 6. Ventilation Filter Contents | | | | | | | | | |
| Primary | 200 mR/hr maximum for all HEPA filters [65] | NA | NA | Particulate | Yes - Disposed in accordance w/WHC-EP-0083-4 (8/83) | Yes | NA | HEPA filters monitored for DP deploding [64] | |

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | | Quantity | Comments |
|--|---|---|---|-------------------|---|---|---|--|----------|
| | | Material Classification | Type | Physical Form | Volume or Activity | Transient Y/N | | | |
| Legend Box--> | Capacity Provides Prohibit references | Type of material in the tank, pit, etc. from instructions in accompanying Prohibit references | Supplies, alloys, mixtures etc. Prohibit references | Major liquid acid | How much material is present, in gallons, cubic, etc. Prohibit with Prohibit references | Can the material be released or moved without or with just a fix. | Number of bags contained in the Prohibit references if applicable | Notes | |
| Annulus | 200 mBtu maximum for all HEPA filters [6] | NA | NA | Particulate | Yes - Disposed in accordance with CEP-0083-4 (865) | Yes | NA | HEPA filters monitored for DP dropping [4] | |
| Breather | NA | NA | NA | NA | NA | NA | NA | NA | |
| 7. Contamination in Ventilation System | | | | | | | | | |
| De-saturators | NA | Process condensate | NA | Liquid | Residual | NA | NA | NA | |
| Seal loop | NA | Process condensate | NA | Liquid | Residual | NA | NA | NA | |
| | | | | | | | | | |
| 8. Contents of Pipeline and/or Source Tank During Transfer | | | | | | | | | |
| none | NA | NA | NA | NA | NA | NA | NA | NA | |
| | | | | | | | | | |
| 9. Contents of Sump | | | | | | | | | |

NA = Not applicable or not required
5/31/86

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | | Quantity | Comments |
|---------------------------------|------------------------------|--|---|----------------------|--|--|---|--------------------------------------|----------|
| | | Material Classification | Type | Physical Form | Volume or Activity | Transient Y/N | | | |
| Legend Box-> | Capacity Provides references | Type of material in the tank, pit, etc. (see instructions for abbreviating) Provide references | Supernatants, sludge, sediments etc. Provide references | Vapor, liquid, solid | How much material is present in gaskets, coils, etc. Include with Provide references | Can the material be relocated or moved just or its | Number of bags contained, etc. If applicable, Provide references if applicable. | Notes | |
| NA | NA | NA | NA | NA | NA | NA | NA | There are no sumps in AW Farm. [nd1] | |
| 10. Contamination in PS or Box | | | | | | | | | |
| Annulus pump pit 01B-08B | 1.5 Kgal [ew60] | Residual contamination | NA | Residue | Unknown | No | 6 pits | NA | |
| Central pump pit 01A-06A | 3.7 Kgal [ew64] | Residual contamination | NA | Residue | Unknown | No | 6 pits | NA | |
| Leak detection pump pit 01C-06C | 1.7 Kgal [ew65] | Residual contamination | NA | Residue | Unknown | No | 6 pits | NA | |
| Drain pit 02D | 7.1 Kgal [ew62] | Residual contamination | NA | Residue | Unknown | No | 1 pit | NA | |
| Valve pits AVNA and B | 4.4 Kgal [ew63] | Residual contamination | NA | Residue | Unknown | No | 2 pits | NA | |
| Primary seal pot pit AW1K | .06 Kgal [ew68] | Residual contamination | NA | Residue | Unknown | No | 1 pit | NA | |
| Annulus seal pot pit AW1Q | Unknown | Residual contamination | NA | Residue | Unknown | No | 1 pits | NA | |
| Feed pump pit 02E | 3 Kgal [ew69] | Residual contamination | NA | Residue | Unknown | No | 1 pits | NA | |

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | | Quantity | Comments |
|-------------------------------------|--------------------------------------|--|--|-----------------------------|--|--|--|---|----------|
| | | Material Classification | Type | Physical Form | Volume or Activity | Transient Y/N | | | |
| Legend Box--> | Capacity Provide reference | Type of material in the tank, pit, etc. (see instructions for abbreviating) Provide reference | Supernatant, sludge, sediment, etc. Provide reference | Vapor, liquid, solid | How much material is present in gallons, cubic ft. Include units. Provide reference | Can this material be released or moved? Yes or no | Number of tanks, containers, etc. If applicable, provide reference if applicable. | Notes | |
| Ventilation instrument pits W-1,2,3 | 5.2 Kgal [kw07.36] | Residual contamination | NA | Residue | Unknown | No | 3 pits | NA | |
| Flush pit | .8 Kgal [kw13] | Residual contamination | NA | Residue | Unknown | No | 1 pit | NA | |
| Clean out boxes AWB, 10 | .047 Kgal [kw01] | Residual contamination | NA | Residue | Unknown | No | 2 COBs | NA | |
| 11. SMRA 313 Materials | | | | | | | | | |
| Cylinder [68] | 480 out [68] | 90% Argon / 10% Methane [68] | NA | Gas mixture [68] | 480 out [68] | Yes | 2 bottles | For POM-8, [68] | |
| 12. Other | | | | | | | | | |
| Service building | NA | Raw water | NA | Residue | NA | no | NA | NA | |
| Change trailer | NA | Low level waste | SAPs, other low level waste | Solid | Low level | Yes | NA | Controlled by HFTs, [64] | |
| Operations support facility 272-AW | See comment | See comment | See comment | See comment | See comment | See comment | See comment | For maintenance shop materials refer to the "Hazardous Materials Inventory Database", U1068 | |

TABLE 1
MATERIALS INVENTORY

| Material at Risk (MAR) Category | Capacity | Material Inventory | | | | | Quantity | Comments |
|---------------------------------|---|---|--|---------------------|---|--|--|--|
| | | Material Classification | Type | Physical Form | Volume or Activity | Transient Y/N | | |
| Legend Box-> | Capacity Provide reference | Type of material in the tank, pit, etc. (see instructions for abbreviating). Provide reference. | Supernatants, sludge, sediments, etc. Provide reference. | Vapor, liquid, acid | How much material is present, in gallons, cubic ft. Include units. Provide reference. | Can the material be relocated or moved, yes or no. | Number of bags contained, etc. If applicable, provide reference if applicable. | Notes |
| Acid sewer manhole | See comment | See comment | See comment | See comment | See comment | See comment | See comment | The acid sewer manhole is located outside of the AW Farm. It is now isolated, and used for access to the PUREX chemical sewer. |
| Satellite accumulation area | 6 - 55 gallon mixed waste drums (maximum) [w/1] | RCRA mixed waste | Soil, tank contents, HEPA filters, misc. RMW wastes | Solid | Low Level (less than class C) | Yes | 6 - 55 gal drums max capacity | NA |

Note 1: (1) Inventory contribution in both of major radionuclides to the total unit fill dose due to inhalation/ingestion for liquids in tanks (Tables 4/5, WHC-SD-WM-SARR-037 Rev.0) Code: 8.97 E+08, S90-4.59 E+08, Y90 4.59 E+09, C4137-5.18 E+07, E415-4.18 E+07, N0237-2.30 E+05, P4238-1.78 E+08, P4239-7.85 E+08, P4241-1.84 E+07, A0241-3.40 E+07, C0244-1.22 E+05. These are bounding concentrations.
Inventory contribution in both of major radionuclides to the total unit fill dose due to inhalation/ingestion for solids in tanks (Tables 4/5, WHC-SD-WM-SARR-037 Rev.0) Code: 1.5 E+07, S90-5.2 E+10, Y90 5.2 E+10, C4137-5.9 E+10, E415-3.00 E+08, N0237-4.1 E+05, P4238-7.2 E+07, P4239-1.8 E+08, P4241-3.8 E+08, A0241-2.7 E+08, C0244-1.8 E+07. These are bounding concentrations.

- d1 = WHC-EP-0102-03
- d2 = Tanker 1998, T430-98-008
- d3 = SD-WM-SAR-018, Rev 1
- d4 = Field walkdown, 3/31/98, PK Brockman, S Brews, VA White, C Sagat, C Zaccaro, S Gwin, D Mendezca, G Dunford
- d5 = SD-WM-SAR-018
- d6 = Hazardous Material Inventory Database, Inventory Verification Report by Report#, File name HMF262A.xls, 01/10/98, provided by Michael R Wall
- d7 = "TWINS" data base, Jim Hucosity of PVAL
- d8 = WHC-SD-WM-SARR-037, Rev 0 (created by Bill Cowley)
- sw1 = H-2-905142 Rev. 1.
- sw2 = H-14-0265021 Rev. 2.
- sw3 = H-2-7030491 Rev. 11.
- sw4 = H-2-7030491 Rev. 15.
- sw5 = H-2-7030501 Rev. 13.
- sw6 = H-14-026602 a11 Rev. 2.

TABLE 1
MATERIALS INVENTORY

| | | |
|------|------------------|----------|
| aw6 | = H-14-70302-aw2 | Rev. 0. |
| aw7 | = H-14-70302-aw3 | Rev. 0. |
| aw8 | = H-2-70412 | Rev. 4. |
| aw9 | = H-2-70417 | Rev. 5. |
| aw10 | = H-2-70413 | Rev. 4. |
| aw11 | = H-2-70414 | Rev. 6. |
| aw12 | = H-2-70415 | Rev. 5. |
| aw13 | = H-2-70416 | Rev. 5. |
| aw14 | = H-2-70401 | Rev. 7. |
| aw15 | = H-2-703292 | Rev. 0. |
| aw16 | = H-2-70398 | Rev. 10. |
| aw17 | = H-2-70400 | Rev. 8. |
| aw18 | = H-2-70409 | Rev. 2. |
| aw19 | = H-2-70417 | Rev. 7. |
| aw20 | = H-2-70387 | |
| aw21 | = H-2-704112 | Rev. 0. |
| aw22 | = H-2-696291,2,3 | |
| aw23 | = H-2-70313 | Rev. 6. |
| aw24 | = H-2-70402 | Rev. 5. |
| aw25 | = H-2-69606 | Rev. 4. |
| aw26 | = H-2-703771, | Rev. 9. |
| aw27 | = H-2-70358, | Rev. 6. |
| aw28 | = H-2-69605, | Rev. 7. |
| aw29 | = H-2-70315, | Rev. 0. |
| aw30 | = H-2-70311, | Rev. 0. |
| aw31 | = H-2-70418, | Rev. 2. |
| aw32 | = H-2-70314, | Rev. 0. |
| aw33 | = H-2-70313, | Rev. 0. |
| aw34 | = H-2-70312, | Rev. 0. |
| aw35 | = H-2-70310, | Rev. 0. |
| aw36 | = H-2-69623 | |
| aw37 | = H-2-70341 | |
| aw38 | = H-2-70337 | |

NA = Not applicable or not required
5/31/83

TABLE 2
HAZARDS IDENTIFICATION CHECKLIST

Tank Farm or Miscellaneous Facility **AW Tank Farm**

| Facility | Type | A. Corrosive | B. Explosive/ Pyrophoric | C. Nuclear Criticality | D. Flammable Materials | E. Thermal Radiation | F. Chem. Reacts. | G. Friction | H. Electrical | I. Vibro- Rotation | J. Vibro- Linear | K. Mass, Gravity, Height | L. Pressure- Volume | M. Thermal (except radiant) | Comments |
|--|---------------------|-----------------|--------------------------------|------------------------------|------------------------------|----------------------------|------------------------|----------------|-----------------------------|--------------------------|------------------------|-----------------------------------|---------------------------|--------------------------------------|---|
| <i>Legend: Select applicable hazard(s) from italicized table and place corresponding hazard(s) number(s) in the boxes below.</i> | | | | | | | | | | | | | | | |
| <i>Legend: Choose →</i> | | | | | | | | | | | | | | | |
| AW TANK FARM | | | | | | | | | | | | | | | |
| 241-AW-101 | DST | 2 (a) | 6, 7, 8 (a) | 15 (a) | 4, 11, 14 (a) | 5 (a) | NA (a) | 5 (c) | 4, 6, 9, 10, 14 (c) | 3 | NA (c) | 11 (c) | NA (c) | NA (c) | AW-101 is a watch list tank (pyrophoric flammable gas) (c) *Tank waste (b) |
| 241-AW-102 | DST | 2 (a) | 6, 7, 8 (a) | 15 (a) | 4, 11, 14 (a) | 5 (a) | NA (a) | 5 (c) | 4, 6, 9, 10, 14 (c) | 3 | NA (c) | 11 (c) | NA (c) | NA (c) | *Tank waste (b) |
| 241-AW-103 | DST | 2 (a) | 6, 7, 8 (a) | 15 (a) | 4, 11, 14 (a) | 5 (a) | NA (a) | 5 (c) | 4, 6, 9, 10, 14 (c) | 3 (c) | NA (c) | 11 (c) | NA (c) | NA (c) | *Tank waste (b) |
| 241-AW-104 | DST | 2 (a) | 6, 7, 8 (a) | 15 (a) | 4, 11, 14 (a) | 5 (a) | NA (a) | 5 (c) | 4, 6, 9, 10, 14 (c) | 3 (c) | NA (c) | 11 (c) | NA (c) | NA (c) | *Tank waste (b) Recommended to be added as a watchlist tank. (c) |
| 241-AW-105 | DST | 2 (a) | 6, 7, 8 (a) | 15 (a) | 4, 11, 14 (a) | 5 (a) | NA (a) | 5 (c) | 4, 6, 9, 10, 14 (c) | 3 (c) | NA (c) | 11 (c) | NA (c) | NA (c) | *Tank waste (b) |
| 241-AW-106 | DST | 2 (a) | 6, 7, 8 (a) | 15 (a) | 4, 11, 14 (a) | 5 (a) | NA (a) | 5 (c) | 4, 6, 9, 10, 14 (c) | 3 (c) | NA (c) | 11 (c) | NA (c) | NA (c) | *Tank waste (b) |
| COB-AW-09 | Cleanout box | 2 (a) | 6, 7, 8 (a) | NA | NA | NA | NA | NA | 4 (c) | NA | NA | NA | NA | NA | NA |
| COB-AW-10 | Cleanout box | 2 (a) | 6, 7, 8 (a) | NA | NA | NA | NA | NA | 4 (c) | NA | NA | NA | NA | NA | NA |
| 241-AW-701 | Compressor building | NA (c) | NA (c) | NA (c) | 4, 5, 10 (c) | NA (c) | NA | 1, 2, 3, 5 (c) | 4, 6, 8, 10, 11, 14, 16 (c) | 2, 4 (c) | NA (c) | NA (c) | 6, 9 (c) | 3, 9 (c) | Small flammable storage cabinet located in the compressor building. See SAR# 313 report |

NA = Not applicable or not required
5/21/88

**TABLE 2
HAZARDS IDENTIFICATION CHECKLIST**

| Facility | Type | A. Concrete | B. Explosion/ Pyrophoric | C. Nuclear Criticality | D. Flammable Materials | E. Thermal Radiation | F. Chem Reacts | G. Friction | H. Electrical | I. Kinetic- Rotation | J. Kinetic- Linear | K. Mass, Gravity, Height | L. Pressure- Volume | M. Thermal (except radiant) | Comments |
|--|-------------------------------------|----------------|--------------------------------|------------------------------|--|----------------------------|----------------------|----------------|---|----------------------------|--------------------------|-----------------------------------|---------------------------|--------------------------------------|---|
| Legend/Notes -> | | | | | | | | | | | | | | | |
| Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below. | | | | | | | | | | | | | | | |
| 241-AW42E | Feed pump pit | 2 (b) | NA (b) | 15 (b) | NA (b) | NA (b) | NA (b) | 5 (c) | 9, 14 (c) | 3 (c) | NA (c) | NA (c) | NA (c) | NA (c) | The feed pump pit belongs to the 242-A Evaporator. |
| 241-AW | Flush pit | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | 14 (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | Leak detection in surge |
| 241-AW4271 | Instrument building | NA (c) | NA (c) | NA (c) | NA (c) | NA (c) | NA (c) | NA (c) | 4, 3, 16, 5, 6, 7, 8, 11, 14 (c) | NA (c) | NA (c) | NA (c) | 5 (c) | 3 (c) | NA |
| 241-AW4272 | Operations support facility | See comment | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | For maintenance shop materials refer to Hazardous Materials Inventory Database, 1/10/92 |
| 241-AW4273 | Service building | NA (c) | NA (c) | NA (c) | NA (c) | NA (c) | NA (c) | NA (c) | 11, 14 (c) | NA (c) | NA (c) | NA (c) | NA (c) | 3 (c) | Storage inside in service Bld. |
| 241-AW4A | Vehicle pit | 2 (b) | NA (b) | 15 (b) | NA (b) | NA (b) | NA (b) | 5 (b) | 14 (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA |
| 241-AW4B | Vehicle pit | 2 (b) | NA (b) | 15 (b) | NA (b) | NA (b) | NA (b) | 5 (b) | 14 (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA (b) | NA |
| | Satellite Accumula- tion Area | 1, 2, 4 | NA | NA | 2, 10, 17 (tank contact weaken) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

(a) = OSD-T-151-00007
 (b) = Cognizant engineer interview, Katie White, 3/25/98
 (c) = Walkdown, 3/25/98, P.K. Broderman, S. Brown, K. White, C. Sogut
 * All from maintenance b.
 (g) = OSD-T-151-00000, Rev B-17, "Operating Specifications for Watch List Tanks"

NA = Not applicable or not required
 5/31/95

TABLE 3
UNIQUE PHENOMENA CHECKLIST

| Facility | Type | Flammable Gas | Ferrocyanide | Organics | | | High Heat (>70,000 BTU/hr) | Pyrophorics | Siphoning | Clasticity (>1 g/L in solids) | Comakality (CA, N2, NO3) limits in MSD-T-161-0007 | Other | Comments |
|----------------|------|---|--|--|--------------------------------|--------------------------------|--|--|--|--|---|-------|---|
| | | | | Separable Phase | TDC in liquids (>10 g/L) | TDC in acids 3 wt% (dry basis) | | | | | | | |
| Legend Rows -> | | | | | | | | | | | | | |
| AWTANK | | | | | | | | | | | | | |
| 241-AW-101 | DST | Y Hodgson 1986 WHC-SD-WM-ER-528 Rev. 1 | N Borshaim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0 | N Each 1986 WHC-SD-WM-DF-149 Rev. 0 | N Tueller 1986 74A30-96-008 | N Tueller 1986 74A30-96-008 | N Tueller 1986 74A30-96-008 | N personal communcial ion with Den Reynolds | Unknown or currently undocume nted [1] | N Pu Inv Database (WHC-140 PLUTINV) | N Tueller 1986 74A30-96-008 | MA | No known separate phase organics currently on WHC-SD-WM-ER-133 WHC-ER-149 |
| 241-AW-102 | DST | N Hodgson 1986 WHC-SD-WM-ER-528 Rev. 1 | N Borshaim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0 | N Each 1986 WHC-SD-WM-DF-149 Rev. 0 | N Tueller 1986 74A30-96-008 | N Tueller 1986 74A30-96-008 | N personal communcial ion with Den Reynolds | Unknown or currently undocume nted [1] | Unknown or currently undocume nted [1] | N Pu Inv Database (WHC-140 PLUTINV) | N Tueller 1986 74A30-96-008 | MA | No known separate phase organics |
| 241-AW-103 | DST | N Hodgson 1986 WHC-SD-WM-ER-528 Rev. 1 | N Borshaim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0 | N Each 1986 WHC-SD-WM-DF-149 Rev. 0 | N Tueller 1986 74A30-96-008 | N Tueller 1986 74A30-96-008 | N personal communcial ion with Den Reynolds | Unknown or currently undocume nted [1] | Unknown or currently undocume nted [1] | N Pu Inv Database (WHC-140 PLUTINV) | N Tueller 1986 74A30-96-008 | MA | No known separate phase organics |

NA = Not applicable or not required
5/31/88

TABLE 3
UNIQUE PHENOMENA CHECKLIST

| Facility | Type | Flammable Gas | Ferrocyanide | Organics | | | High Heat (>70,000 BTU/hr) | Pyrophorics | Siphoning (>1 gal in solids) | Oxidizability (>1 gal in solids) | Complexity (OH, NO2, NO3) limits in MSD-1-151-0007 | Other | Comments |
|---------------------------|------|--|--|-----------------------------------|-------------------------------|------------------------------------|-------------------------------|--|--|--|--|-------|--|
| | | | | Separable Phases | TOC in liquids (>10 g/L) | TOC in solids (>3 wt% dry basis) | | | | | | | |
| <i>Legend Boxes -></i> | | | | | | | | | | | | | |
| 241-AW-104 | DST | Y Hodgdon 1986 WHC-SD-WM-ER-526 Rev. 1 | N Borshain & Simpson 1981 WHC-SD-WM-ER-133 Rev. 0 | N Tutler 1986 WHC-SD-WM-ER-463 | N Tutler 1986 74A30-98-008 | Unknown or currently undourme need | N Tutler 1986 74A30-98-008 | N personal communit ion with Dan Reynolds | Unknown or currently undourme need (1) | N Pu Inv Database (WHC-1403 PLUTRN) | N Tutler 1986 74A30-98-008 | NA | Tank failed the flammable gas watchlist criteria (WHC-EP-0702 Rev. 0). Tanked with watch list controls pending further decision from O&E (OSD-1-161-0008A B-2) |
| 241-AW-108 | DST | N Hodgdon 1986 WHC-SD-WM-ER-526 Rev. 1 | N Borshain & Simpson 1981 WHC-SD-WM-ER-133 Rev. 0 | N Tutler 1986 WHC-SD-WM-DR-146 | N Tutler 1986 74A30-98-008 | N Tutler 1986 74A30-98-008 | N Tutler 1986 74A30-98-008 | N personal communit ion with Dan Reynolds | Unknown or currently undourme need (1) | N Pu Inv Database (WHC-1403 PLUTRN) | N Tutler 1986 74A30-98-008 | MA | No known separable phase organics |
| 241-AW-108 | DST | N Hodgdon 1986 WHC-SD-WM-ER-526 Rev. 1 | N Borshain & Simpson 1981 WHC-SD-WM-ER-133 Rev. 0 | N Tutler 1986 WHC-SD-WM-DR-147 | N Tutler 1986 74A30-98-008 | Unknown or currently undourme need | N Tutler 1986 74A30-98-008 | N personal communit ion with Dan Reynolds | Unknown or currently undourme need (1) | N Pu Inv Database (WHC-1403 PLUTRN) | N Tutler 1986 74A30-98-008 | MA | No known separable phase organics |

NA = Not applicable or not required
5/31/88

TABLE 3
UNIQUE PHENOMENA CHECKLIST

| Facility | Type | Flammable Gas | Ferroxyde | Organics | | | High Heat (>70,000 BTU/hr) | Pyrophorics | Siphoning | Chicality (>1 g/L in solids) | Corrosivity (OH, NCG,NO3) limits in CGS-1-151-007 | Other | Comments |
|-----------------|------|--|--|--|--|--|--|--|--|--|---|--|----------|
| | | | | Separable Phase | TCC in liquids (>10 g/L) | TCC in solids > 5 wt% (dry basis) | | | | | | | |
| Legend Boxes -> | | Does it leak? Density? Products references | Does it leak? Density? Products references | Does it leak? Density? Products references | Does it leak? Density? Products references | Does it leak? Density? Products references | Does it leak? Density? Products references | Does it leak? Density? Products references | Does it leak? Density? Products references | Does it leak? Density? Products references | Does it leak? Density? Products references | Does it leak? Density? Products references | None |
| | | | | | | | | | | | | | |

[1] Group Hazards Analysis performing independent siphoning evaluation study.

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/present | Operable | Equipment Condition | Comments |
|---|----------------------------------|--|--|--|---|
| Legend | Supply any associated ID numbers | Is equipment existing? Yes/No [w/d] | Is equipment operable? Yes/No [w/d] | Equipment condition. Provide reference. | Name, discipline identifiers, etc. |
| CAM Rad Monitor | NA | Yes [w/d] | Yes [w/d] | 5 [P1] | NA |
| Pump pit leak detection | NA | Yes [w/d] | Yes [w/d] | 5 [P1] | NA |
| Leak detection conductivity (manual tape) | NA | Yes [w/d] | Yes [w/d] | NA | *tapping spent on some tanks [w/d] |
| Temperature | NA | Yes [w/d] | Yes [w/d] | 5 [P1] | NA |
| Tank annulus off pressure monitor | NA | Yes [w/d] | Yes [w/d] | 5 [P1] | *1 fan typically broken (ventilation system)[w/d] |
| Tank Structure Instrumentation | | | | | |
| Thermocouple data acquisition | NA | Yes [w/d] | Yes [w/d] | 5 [P1] | 19 elements |
| Instrument Enclosures | NA | Yes [w/d] | NA | 5 [P1] | NA |
| Air filter circulators | NA | Yes [w/d] | Yes [w/d] | NA | *2 on tank 102 only [w/d] |
| Steam coil | NA | No | NA | NA | NA |
| Calson | NA | Yes [w/d] | Yes [w/d] | NA | NA |
| -drains | NA | Yes [w/d] | Yes | NA | Drains to tank 102 [w/d] Assumed operable |
| HVAC Systems | | | | | |

NA = Not applicable or not required
5/31/85

TABLE 4
FACILITY CONFIGURATION

| System | System Equipment Identifier | Existing/present | Operable | Equipment Condition | Comments |
|---|---------------------------------|--|--|---|--|
| Legend | Supply any associated ID number | Is equipment existing? Justify. Provide reference | Is equipment operable? Justify. Provide reference | Equipment condition. Provide reference | Notes, checklists, schematics, etc. |
| Verification System(s) | K1 / K2 [aw25, aw27] | Yes [r1, aw25, aw27, wd] | Yes [wd] | 5 [r1] | K1 = primary tank ventilation system [aw25] K2 = annular ventilation system [aw27] |
| -Passive | NA | No [r1, aw25, aw27, wd] | NA | NA | NA |
| -Active | NA | Yes[r1, aw25, aw27, wd] | Yes [wd] | 5 [r1] | NA |
| -Shared / common vent system? (Describe in comments section) | NA | Yes [aw25, aw26, wd] | Yes [wd] | 5 [r1] | One for all six tanks [aw25, aw27, wd] |
| -Exhaust vent/hatchway | NA | Yes [wd] | Yes [wd] | 5 [r1] | NA |
| -Annular air intake assemblies | NA | Yes [wd] | Yes [wd] | 5 [r1] | 1 at each tank [wd] |
| -Primary air intake assemblies | NA | Yes [wd] | Yes [wd] | 5 [r1] | 1 at each tank [wd] |
| -Pre-filters (Yes/no) | NA | Yes [r1, wd] | Yes [wd] | 5 [r1] | Each vent. system has two banks of filters with one stage of pre-filtration in each [wd] |
| -HEPA filters (how many filters, stages, parallel vs series etc.) | NA | Yes [r1, wd] | Yes [wd] | 5 [r1] | Each vent. system has two banks of filters with two stages of HEPA filtration in each [wd] |
| -Fans | NA | Yes [r1, wd] | No [wd] | 5 [r1] | Two fans for the annular ventilation system, one is usually broken [wd] |
| -De-drainers | NA | Yes [r1, wd] | Yes [wd] | 5 [r1] | Primary tank vent. system only has a de-drainer [r1, wd] |
| -Heaters | NA | Yes [r1, wd] | Yes [wd] | 5 [r1] | NA |
| HVAC Instrumentation | | | | | |
| Main stack monitor | NA | Yes [r1, wd] | Yes [wd] | 5 [r1] | NA |
| Stack monitor -for annular system | NA | Yes [r1, wd] | Yes [wd] | 5 [r1] | NA |
| Primary stack pressure | NA | Yes [r1] | Yes [r1] | NA | NA |
| Annular stack pressure | NA | Yes [r1] | Yes [r1] | NA | NA |

NA = Not applicable or not required
5/3/88

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/ present | Operable | Equipment Condition | Comments |
|---------------------------|----------------------------------|---|---|---|---|
| Legend | Supply any associated ID numbers | In equipment security journal. Provide reference. | In equipment security journal. Provide reference. | Equipment condition. Provide reference. | Notes, describe if necessary, etc. |
| De-entrainer sensor | NA | Yes [w/] | No [w/] | 5 [p1] | Sensor was in alarm condition; not sure if this was a legitimate alarm or if instrument was broken [w/] |
| High filter DP alarm | NA | Yes [w/] | No [w/] | 5 [p1] | Instrument problem [w/] |
| Primary Seal Pot PR | 241-AMHK1 | Yes [w/] | Yes [w/] | NA | NA |
| -Leak detection | NA | No [AV028] | NA | NA | NA |
| -Level element | NA | Yes [AV028] | Yes | 5 [p1] | Both high level and low level elements [AV028] Assumed operable |
| -Drain | NA | Yes [AV028] | Yes | NA | Assumed operable |
| -Heat trace | NA | Yes [AV028] | Yes | 5 [p1] | Assumed operable |
| Annulus Seal Pot PR | 241-AMHC2 | Yes [w/] | Yes [w/] | 5 [p1] | NA |
| -Level element | NA | Unknown | Unknown | 5 [p1] | NA |
| -Drain | NA | Unknown | Unknown | TBD | NA |
| Ventilation Instrument PR | 241-AMVMP-1,2, and 3 | Yes [w/] | Yes [w/] | 5 [p1] | 3 in the farm |
| -CAMS | NA | Yes [w/] | Yes [w/] | 5 [p1] | NA |
| -Annulus pressure | NA | Yes [w/] | Yes [w/] | 5 [p1] | NA |
| PIs | | | | | |

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/present Is equipment existing? Justify. Provide references. | Operable Is equipment operable? Justify. Provide references. | Equipment Condition | Comments |
|---------------------|----------------------------------|--|--|--|--|
| Legend | Supply any associated ID numbers | | | Equipment condition. Provide references. | Name, description, dimensions, etc. |
| Annulus Pump PR | 241-AW01018 through -088 | Yes [aw2, aw3, aw4, wd] | Yes [wd] | NA | One for each tank [aw4, wd] |
| -Floor drain | NA | Yes[aw2, aw3, aw4] | Yes | NA | Assumed operable |
| -Sump | NA | No | NA | NA | NA |
| -Leak detection | NA | Yes [aw2, aw3, aw4, wd] | Yes [wd] | 5 [PT] | NA |
| -Portable pt spray | NA | Yes [aw4] | Yes [wd] | NA | PI spray, no hose bib connection [aw4] |
| -Pump motor | None | Yes [aw2, aw3, aw4, wd] | No | NA | NA |
| Central Pump PR | 241-AW0101A through -084 | Yes [aw2, aw3, aw4, wd] | Yes [wd] | NA | NA |
| -Leak detection | NA | Yes [aw2, aw3, aw4, aw15] | Yes [wd] | 5 [PT] | Two wire sensors |
| -Floor drain | NA | Yes [aw0, aw21] | Yes | NA | Assumed operable |
| -Portable pt spray | NA | Yes [aw21] | Yes | NA | Assumed operable |
| -Pump Motor | NA | Yes [aw2, aw4] | Yes | NA | Assumed operable |
| -Slurry distributor | NA | Yes [wd] | Yes | NA | None on tank 102 [wd] Assumed operable |
| Distributor PR | NA | NA | NA | NA | NA |
| Skates PR | NA | NA | NA | NA | NA |
| Head PR | NA | NA | NA | NA | NA |

NA = Not applicable or not required
5/31/85

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Establishment | Operable | Equipment Condition | Comments |
|-------------------------------------|------------------------------------|--|--|--|--|
| Legend/ | Supply any associated ID transfers | Is equipment working properly. Provide reference | Is equipment operable. Provide reference | Equipment condition. Provide reference | Notes, description, reference, etc. |
| Leak detection pump pit | | | | | |
| -Level sensing system (S/G-WF pump) | 241-AW401C through - DBC | Yes [aw1, wd] | Yes [wd] | NA | One for each tank |
| -Gamma rad monitor (bump) | NA | Yes [aw1] | Yes [wd] | 5 [p1] | NA |
| -Leak detection system (oil) | NA | Yes [aw1] | No [wd] | 5 [p1] | Does not work on any pit [wd] |
| -Temperature | NA | Yes [aw1] | Yes [wd] | 5 [p1] | NA |
| -Slump | NA | No [aw1] | Yes [wd] | 5 [p1] | NA |
| -Chain | NA | Yes [aw1, aw10] | NA | NA | NA |
| -Portable pit spray | NA | Yes [aw10] | Yes | NA | Assumed operable |
| -Pump, motor | NA | Yes [aw2, aw3, aw4] | Yes | NA | Assumed operable |
| -Pump | NA | Yes [aw2, aw3, aw4] | No [wd] | NA | Not hooked up. Only installed in AW-101. [wd] |
| Dry wells | NA | Yes [aw17] | No [wd] | NA | 6" dia. fill line |
| Condenser pit | NA | NA | Yes [wd] | NA | Standard. Dry well next to each leak detector pit [p3] |
| Sludge pump pit | NA | NA | NA | NA | NA |
| Salt well pump pit | NA | NA | NA | NA | NA |

NA = Not applicable or not required
5/31/88

TABLE 4
FACILITY CONFIGURATION

| System | System Equipment Identifier | Existing/present Is equipment adding function. Provide reference. | Operable Is equipment operable. function. Provide reference. | Equipment Condition | Comments |
|--------------------------------------|-------------------------------------|---|--|---|--|
| Legend | Supply any associated ID indicators | | | Equipment condition. Provide reference. | Notes, descriptive information, etc. |
| Drain pit | 241-AW02D | Yes [nd] | Yes [nd] | NA | Only on tank 102 |
| -Drain | NA | Yes [aw03] | Yes | NA | Assumed operable |
| -Leak detection | NA | Yes [aw03] | Yes [nd] | 5 [r1] | Two-wire sensor |
| -Portable pit spray | NA | Yes [aw11] | Yes | NA | Spray with bb connection [aw11] Assumed operable |
| 2 - 10" dia. lines w/ leak detection | NA | Yes [aw03] | Yes [nd] | 5 [r1] | Wireless detection |
| Valve PI | 241-AW4A and -B | Yes [nd] | Yes [nd] | NA | Ties for the entire tank farm |
| -Leak detection | NA | Yes [aw2, aw28] | Yes [nd] | 5 [r1] | Two-wire sensor |
| -Wave position indication | NA | Yes [aw22, aw29] | Yes [nd] | NA | Diagrams on cover blocks |
| -Flow monitoring | NA | No [nd] | NA | NA | NA |
| -Drain | NA | Yes [aw23] | Yes | NA | Assumed operable |
| -S1 Lines | NA | NA | NA | NA | Evidence of leak detection [nd] |
| -S4 Lines | NA | NA | NA | NA | Evidence of leak detection [nd] |
| -Pressure switches | NA | Yes [aw29] | Yes | 5 [r1] | Assumed operable |
| -Drain line flow alarm | NA | Yes [AW05] | Yes | 5 [r1] | Assumed operable |
| Clean Out Boxes | COB-AW 9,10 | Yes [nd] | Yes [nd] | NA | Other COB boxes w/AW designator belong to the evaporator. [nd] |
| -Leak detection | NA | Yes [nd] | Yes [nd] | 5 [r1] | NA |
| -Filter (DF) | NA | Yes [nd] | Yes [nd] | 5 [r1] | NA |

NA = Not applicable or not required

TABLE 4
FACILITY CONFIGURATION

| System | System Equipment Identifier | Existing/present In equipment safety joints. Provide reference. | Operable In equipment safety joints. Provide reference. | Equipment Condition | Comments |
|---------------------|----------------------------------|--|--|---|---|
| Legend | Supply may associated ID numbers | | | Equipment condition. Provide reference. | Ident, describe, identify, etc. |
| Feed Pump Pk | 241-AW402E | Yes [aw3, aw12, wd] | Yes [wd] | NA | Only on tank 102. The feed pump belongs to the 242-A Exponentor. [wd] |
| -Motor | NA | Yes [aw3] | Yes [wd] | NA | NA |
| -Drain | NA | Yes [aw3] | Yes | NA | Discharge line with spring operated valve and float. air line. Assumed operable |
| -Leak detection | NA | Yes [aw3, aw12] | Yes [wd] | 5 [fl] | Spray line whose bb |
| Mixer Pump Pk | NA | NA | NA | NA | NA |
| Service Pk | 241-AW401 | Yes [wd] | Yes [wd] | NA | NA |
| -Flow monitoring | NA | Yes [aw2b, wd] | Yes | 5 [fl] | Assumed operable |
| -Red monitor | NA | Yes [aw2b, wd] | Yes | 5 [fl] | Assumed operable |
| -Backflow preventer | NA | Yes [aw2b, wd] | Yes | NA | Assumed operable |
| -Leak detection | NA | Yes [aw2b, wd] | Yes | 5 [fl] | Assumed operable |
| -Pressure Gauge | NA | Yes [aw2b, wd] | Yes | 5 [fl] | Assumed operable |
| -Strp | NA | Yes [aw2b, wd] | Yes | NA | Assumed operable |
| -Drain | NA | Yes [aw2b, wd] | Yes | NA | Assumed operable |
| -Strp level element | None | No [wd] | NA | NA | Drains to 102-AW [wd] Assumed operable. |
| -Heater | NA | Yes [wd] | Yes [wd] | NA | NA |
| | | | | NA | Heater in the building, none in pit [wd] |

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Establishment | Operable | Equipment Condition | Comments |
|----------------------------|---|---|--|--|--|
| Legend | Is equipment installed? If not, provide reference. | Is equipment ready for use? If not, provide reference. | Is equipment operable? If not, provide reference. | Equipment condition. Provide reference. | Notes, describe reference, etc. |
| Flush pit | 241-AW | Yes [nd] | Yes [nd] | NA | NA |
| -Flow monitoring | NA | Yes [aw/28] | Yes [nd] | 5 [r1] | Monitored by a totalizer. [nd] |
| -Leak detection | NA | Yes [aw/15] | Yes [nd] | 5 [r1] | NA |
| -RV pressure switch | NA | Yes [aw/28] | Yes | 5 [r1] | Assumed operable |
| -Drain | NA | Yes [aw/13] | Yes | NA | Assumed operable |
| -Sump | NA | No [nd] | NA | NA | NA |
| -Level element | NA | No [aw/28] | NA | 5 [r1] | NA |
| -Heater | NA | No [aw/28] | NA | NA | NA |
| -Radiation monitor | NA | Yes [aw/28] | NA | 5 [r1] | NA |
| Transfer Piping | | | | | |
| Transfer Lines | NA | NA | NA | NA | Refer to Transfer Line Table 7. Saw evidence of leak detection on tabs of lines entering the valve pit [nd] |
| Buildings | | | | | |
| Compressor Building | 241-AW/701 | Yes [nd] | Yes [nd] | 7 [r1] | NA |
| -Holding Tanks | NA | Yes [nd] | Yes [nd] | NA | 2 accumulation tanks for instrument air [nd] |
| -Flammable storage cabinet | NA | No [nd] | NA | N | NA |
| Instrument Building | 241-AW/271 | Yes [nd] | Yes [nd] | NA | NA |

TABLE 4
FACILITY CONFIGURATION

| System | System/ Equipment Identifier | Existing/ present In equipment existing Present. Provide reference. | Operable In equipment operable Present. Provide reference. | Equipment Condition | Comments |
|---|-----------------------------------|---|--|---|---|
| Legend | Supply any associated ID numbers. | | | Equipment condition. Provide reference. | Notes, descriptive information, etc. |
| -Monitor for tank 101-AW/in-tank camera | NA | Yes [ref] | Yes [ref] | NA | |
| -CASS connection | NA | Yes [ref] | Yes [ref] | NA | |
| -CAM | NA | Yes [ref] | Yes [ref] | NA | |
| -Remote alarm location(s) (describe in comment section) | NA | Yes [ref] | See comment | 5 [ref] | TMAOs located in the 240-A Evaporator [ref] |
| Miscellaneous instrumentation | | | | | |
| Heat trace | NA | Yes [ref] | Yes | NA | All over the tank farm. Assumed operable |
| Steam | | | | | |
| Steam trap station | NA | Yes [ref(6, aw(8))] | No [ref] | NA | Steam disconnected [ref] |
| Miscellaneous Facilities | | | | | |
| Change Trailer | NA | Yes [ref] | Yes [ref] | NA | NA |
| Add sewer manifold | NA | Yes [ref(7)] | No | NA | The acid sewer manifold is located outside of AW Farm. It is isolated, and was used for access to the PUREX chemical sewer. [ref] |
| Operations Support Facility | 241-AW-272 | Yes [ref] | Yes [ref] | NA | NA |
| Satellite Accumulation Area | NA | Yes [ref] | Yes [ref] | NA | NA |
| Cathode Protection Rectifier for AW | NA | Yes [ref] | Yes [ref] | NA | Passing bi-monthly tests [ref] |

W3 = 1400 WALKDOWN, 303195; PK BROOKVIEW, S BRWAK, NA W306; C Signel, C Zinccone, S Gant, D Harlock, G Durford
d1 = 241-AW Condition Assessment Survey, dated 6/20/05.
d2 = WHC-SD-W614-ES-018, Rev. 0

NA = Not applicable or not required
5/31/08

| |
|-------------------------------|
| aw0 = H-2-605142 Rev. 1. |
| aw1 = H-1-4025271 Rev. 2. |
| aw2 = H-2-70361 Rev. 11. |
| aw3 = H-2-70369 Rev. 15. |
| aw4 = H-2-70369 Rev. 13. |
| aw5 = H-14-020802 sh1 Rev. 2 |
| aw6 = H-14-020802 sh2 Rev. 0 |
| aw7 = H-14-020802 sh3 Rev. 0. |
| aw8 = H-2-70412 Rev. 4. |
| aw9 = H-2-70411/1 Rev. 5. |
| aw10 = H-2-70413 Rev. 4. |
| aw11 = H-2-70414 Rev. 6. |
| aw12 = H-2-70415 Rev. 5. |
| aw13 = H-2-70416 Rev. 5. |
| aw14 = H-2-70401 Rev. 7. |
| aw15 = H-2-70329/2 Rev. 0. |
| aw16 = H-2-70369 Rev. 10. |
| aw17 = H-2-70400 Rev. 8. |
| aw18 = H-2-70409 Rev. 2. |
| aw19 = H-2-70417 Rev. 7 |
| aw20 = H-2-70429 Rev. 2. |
| aw21 = H-2-70412 Rev. 0. |
| aw22 = H-2-902891-2,3. |
| aw23 = H-2-70313 Rev. 6 |
| aw24 = H-2-70402 Rev. 5. |
| aw25 = H-2-90068 Rev. 4. |
| aw26 = H-2-70377/1, Rev. 9. |
| aw27 = H-2-70339, Rev. 6. |
| aw28 = H-2-90065, Rev. 7 |
| aw29 = H-2-70315, Rev. 0 |
| aw30 = H-2-70311, Rev. 0 |
| aw31 = H-2-70418, Rev. 2 |
| aw32 = H-2-70314, Rev. 0 |
| aw33 = H-2-70313, Rev. 0 |
| aw34 = H-2-70312, Rev. 0 |
| aw35 = H-2-70310, Rev. 0 |

NA = Not applicable or not required
5/3/85

TABLE 5
RADIATION SOURCE/PHYSICAL PROTECTION

| System | System ID | Radiation Source ≥100mR/hr | Protective Feature | Description of Protective Feature | Comments |
|--------------------------|---------------------------------------|---|--|---|---------------------|
| Legend: | List any associated ID numbers | Source or Isotop ≥ 100mR/hr? Yes or No | Physical features (including coverblocks, lead, etc.) | Thickness of coverblock, number of penetrations, etc. Provide references | Notes |
| Tanks | 241-AW101 through -105 | Yes | Soil/gravel | ≤ 7 ft above tank dome crown [61] | NA |
| Annulus Pump Pits | 241-AW101B through -085 | Yes | Cover block [aw2] | 1'-8" thick [aw2] 1 penetration 6" in diameter [wd] | Good condition [wd] |
| Control Pump Pits | 241-AW101A through -08A | Yes | Cover block [aw3] | 1'-8" thick [aw3] 3 penetrations (12", 6", and 3" dia.) on tanks 101, 102-105 [wd] 6 penetrations of 2" dia. and 1 penetration of 12" dia. on tank 102 [wd] | Good condition [wd] |
| Distributor Pit | NA | NA | NA | NA | NA |
| Skid Pit | NA | NA | NA | NA | NA |
| Heel Pit | NA | NA | NA | NA | NA |
| Leak detection pump pits | 241-AW101C through -08C | Yes | Cover block [aw1] | 1'-8" thick [aw1] 1 penetration 6" dia. [wd] | Good condition [wd] |
| Condenser pit | NA | NA | NA | NA | NA |
| Sludge pump pit | NA | NA | NA | NA | NA |
| Salt well pump pit | NA | NA | NA | NA | NA |
| Drain pit | 241-AW02D | Yes | Cover block [aw6] | 1'-8" thick [aw6] One 2" penetration, one 6" penetration [wd] | Good condition [wd] |
| Valve pits | 241-AW1A and -B | Yes | Cover block [aw4] | 1'-8" thick [aw4] 6- 2" penetrations [wd] | Good condition [wd] |
| Primary seal pit | 241-AW1K1 | Yes | Metal plate [wd] | 36" steel plate, 2" dia penetration [wd] | Good condition [wd] |
| Annulus seal pit | 241-AW1K2 | Yes | Soil [wd] | 2" pipe floor whuber stopper in pipe [wd] | NA |

NA = Not applicable or not required
5/31/86

TABLE 5
RADIATION SOURCE/PHYSICAL PROTECTION

| System | System ID | Radiation Source ≥100mR/hr | Protective Feature | Description of Protective Feature | Comments |
|----------------------------|---------------------------------------|--|--|---|--|
| Legend/Block-> | List any unshielded ID numbers | Source or Isotope > 100mR/hr? Y or N | Physical Feature (Shielding, Containment, etc.) | Thickness of concrete, shielding, penetrations, etc. Provide references | Notes |
| Feed pump pit | 241-AW02E | Yes | Cover block [ref] | 1'-8" thick [ref] | NA |
| Mixer pump pit | NA | NA | NA | NA | NA |
| Ventilation Instrument pit | 241-AW1RP-1, -2 and -3 | Yes | Cover block | 9" thick [ref:7.36] | NA |
| Service pit | 241-AW | No | Building ventilation monitor [ref] | NA | NA |
| Flush pit | 241-AW | No | Metal lid with insulation [ref] | 2.5" thick [ref:7] 3 penetrations of 12" dia., 10 penetrations of 4" dia. [ref] | Good condition [ref] |
| Other pits | NA | NA | NA | NA | NA |
| Clean Out Bases | COB-AW09, COB-AW-10 | Yes | Metal plate [ref] | About 1.5" thick, 1 penetration [ref] | Good condition, COB-AW09 thru -12 and A-30 belong to the 242-A evaporator, not AW Farm [ref] |
| Steam System | | | | | |
| -Steam traps | NA | NA | NA | NA | NA |
| HVAC | | | | | |
| -Tank Ventilation Systems | 241-AW Exhaust Station K1, K2 | Yes | Concrete around de-entrainer. Silt [ref] | Thickness of concrete unknown. | NA |
| -Other Ventilation Systems | NA | NA | NA | NA | NA |
| Transfer Lines | NA | NA | NA | NA | Refer to Transfer Line Table 7. |

NA = Not applicable or not required
5/31/96

**TABLE 5
RADIATION SOURCE/PHYSICAL PROTECTION**

| System | System ID | Radiation Source ≥100mR/hr | Protective Feature | Description of Protective Feature | Comments |
|------------------------------|------------------------------|---|---|--|--|
| Legend: Blank | (All dry storage/ID numbers) | Source or Isotop: > 100mR/hr? Y/N or NA | Physical feature (shielding, enclosure, lock, etc.) | Thickness of shielding, number of penetrations, etc. Provide references. | Note |
| Dry vaults | NA | NA | NA | NA | NA |
| Buildings | | | | | |
| -Compressor Building | 241-AW-701 | No | NA | NA | NA |
| -Instrument Building | 241-AW-271 | No | NA | NA | NA |
| -Change Trailer | NA | No [adj] | NA | NA | |
| Other Facilities | | | | | |
| -Satellite accumulation area | NA | No [adj] | See comment | NA | Inventories removed when filled, transported to Z06-E 90 Day storage facility. |

vid = field walkdown, 3/31/86, PK Brocsmen, S. Brawe, KA White, C Siegel, S. Gwin, C. Zaccaro, D. Mantzosa, G. Durford.
 d1 = Operating Specification Document, OSD-1-151-00007

- sw1 = H-2-70310, Rev. 3.
- sw2 = H-2-70311, Rev. 2.
- sw3 = H-2-70312, Rev. 4.
- sw4 = H-2-70313, Rev. 6.
- sw5 = H-2-70314, Rev. 2.
- sw6 = H-2-70315, Rev. 3.
- sw7 = H-2-70416, Rev. 5.

NA = Not applicable or not required
 5/31/86

TABLE 6
OSR/OSD SAFETY CONTROLS

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | | Comments |
|-------------------------------------|-----------------------------|-----------|--|--------------|----|----------|
| | | | | FV | DR | |
| Tank primary diff. pressure monitor | WHC-SD-WM-OSR-016 LCO 3.3.1 | NA | TO-060-340 | FV | DR | |
| Tanks 241-AW-101 through -106 | NA | NA | NA | NA | NA | |
| Tank Waste Instrumentation | NA | NA | NA | NA | NA | |
| Specific gravity instr. system | NA | NA | NA | NA | NA | |
| Temperature probes (T/C Tree) | WHC-SD-WM-OSR-016 SL 2.2 | NA | TE-OR-A-03 TO-001-084 TO-001-180 TO-020-586 TO-040-086 TO-040-200 TO-040-660 TO-060-230 TO-200-460 TO-200-464 TO-220-019 TO-220-027 TO-220-095 TO-220-096 TO-220-098 TO-230-099 TO-230-133 TO-230-141 TO-230-142 TO-230-143 TO-230-144 TO-230-274 TO-270-007 TO-270-011 TO-270-012 TO-270-014 | FV | DR | |

05/31/96
NA = Not applicable or not required
B-150

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AW

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|------------|-------------------------|--|--------------|------------------------------|
| WHC-SD-WM-OSR-016 | SL 2.2 | NA | TO-270-040 TO-270-021 TO-270-235 TO-270-251 TO-270-252 TO-270-266 TO-270-824 TO-400-200 TO-430-480 TO-430-485 TO-440-002 | FV DR | |
| WHC-SD-WM-OSR-016 | LCO 3.2.1 | NA | NA | FV | LCO - Not Implemented by ECN |
| WHC-SD-WM-OSR-016 | LCO 3.2.2 | NA | NA | NA | ECN 618398 |
| WHC-SD-WM-OSR-016 | SR 3.2.2.1 | NA | TF-OR-A-03 TO-001-184 TO-040-660 TO-220-085 TO-220-096 TO-250-085 TO-250-089 TO-250-133 TO-250-141 TO-250-142 TO-250-143 TO-250-144 TO-270-007 TO-270-011 TO-270-012 TO-270-035 TO-270-040 TO-400-200 TO-430-480 TO-430-485 TO-440-002 | FV DR | ECN 618398 |
| | NA | OSD-T-151-00007 7.2.8.a | TO-001-182 | NA | |

05/31/96

NA = Not applicable or not required

B-151

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AW

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|-----------|-------------------------|--|--------------|----------|
| | NA | OSD-T-151-00007 7.2.6.a | TO-001-184 TO-040-760 TO-200-010 TO-220-085 TO-230-085 TO-230-133 TO-230-274 TO-270-040 TO-270-204 TO-270-221 TO-270-236 TO-270-252 TO-270-266 TO-270-826 TO-270-828 TO-400-200 TO-430-480 TO-600-080 | NA | |
| | NA | OSD-T-151-00007 7.2.6.b | TO-001-182 TO-001-184 TO-040-760 TO-200-010 TO-220-085 TO-230-085 TO-230-133 TO-230-274 TO-270-040 TO-270-204 TO-270-221 TO-270-236 TO-270-252 TO-270-266 TO-270-826 TO-270-828 TO-400-200 TO-430-480 TO-600-080 | NA | |
| | NA | OSD-T-151-00007 7.2.6.c | TO-001-182 | NA | |

05/31/96
NA = Not applicable or not required
B-152

TABLE 6
OSR/OSD SAFETY CONTROLS

AW

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|-----------------------------|-------------------------|--|--------------|----------|
| | NA | OSD-T-151-00007 7.2.6.c | TO-001-184 TO-040-760 TO-200-010 TO-220-095 TO-230-095 TO-230-133 TO-230-274 TO-270-040 TO-270-204 TO-270-221 TO-270-236 TO-270-252 TO-270-266 TO-270-828 TO-270-828 TO-400-200 TO-430-480 TO-600-080 | NA | |
| Liquid level (Primary) | WHC-SD-WM-OSR-016 SL 2.1 | NA | TF-OR-A-03 TO-020-390 TO-020-820 TO-040-200 TO-060-230 TO-060-340 TO-220-019 TO-220-085 TO-230-085 TO-230-099 TO-230-133 TO-230-142 TO-230-143 TO-230-274 TO-440-002 | FV DR | |
| | WHC-SD-WM-OSR-016 LCO 3.1.2 | NA | ARP-T-231-00102 ARP-T-231-00103 ARP-T-231-00105 ARP-T-231-00106 | NA | |

05/31/96

NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

AW

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|-----------|-----------|--|--------------|----------|
| WHC-SD-WM-OSR-016 | LOO 3.1.2 | NA | ARP-T-271-00101 ARP-T-271-00102 ARP-T-271-00103 ARP-T-271-00104 ARP-T-271-00105 ARP-T-271-00106 ARP-T-271-00107 ARP-T-271-00108 TF-OR-A-03 TO-001-064 TO-001-180 TO-001-184 TO-020-025 TO-020-330 TO-020-595 TO-020-620 TO-040-200 TO-060-105 TO-060-230 TO-060-340 TO-200-460 TO-220-027 TO-220-095 TO-220-096 TO-230-065 TO-230-069 TO-230-133 TO-230-142 TO-230-143 TO-230-144 TO-230-274 TO-270-007 TO-270-012 TO-270-014 TO-270-265 TO-270-261 TO-270-282 TO-270-824 TO-400-200 TO-450-460 | NA | |

05/31/96

NA = Not applicable or not required

B-154

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AW

| System/Structures/Components | OSR Limit WHC-SD-WM-OSR-016 LCO 3.1.2 | OSD Limit NA | Implementing Procedures TO-430-485 TO-440-002 | Verification NA | Comments |
|------------------------------|--|-------------------------|--|--------------------|----------|
| | 11.5 | OSD-T-151-00007 7.2.2.a | TF-OR-A-03 TO-001-182 TO-020-240 TO-020-420 TO-020-820 TO-040-590 TO-230-095 TO-230-274 TO-270-204 TO-270-221 TO-270-236 TO-270-252 TO-270-266 TO-270-828 TO-270-828 | NA | |
| Liquid level (Backup) | 11.5 | OSD-T-151-00007 7.2.2.a | TF-OR-A-03 TO-001-182 TO-020-240 TO-020-420 TO-040-590 TO-230-095 TO-230-274 TO-270-204 TO-270-221 TO-270-236 TO-270-252 TO-270-266 TO-270-828 TO-270-828 | NA | |
| High level probe | NA | NA | NA | NA | |
| | WHC-SD-WM-OSR-016 SR 3.1.2.1 | NA | TF-OR-A-03 | NA | |

05/31/96
NA = Not applicable or not required
B-155

TABLE 6
OSR/OSD SAFETY CONTROLS

AW

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit WHC-SD-WM-OSR-016 SR 3.1.2.1 | OSD Limit NA | Implementing Procedures | Verification NA | Comments |
|-------------------------------------|---|-----------------|--|--------------------|----------|
| | | | TO-001-084 TO-001-180 TO-001-194 TO-020-025 TO-020-330 TO-020-595 TO-020-820 TO-040-200 TO-060-340 TO-300-400 TO-300-460 TO-220-065 TO-220-085 TO-230-065 TO-230-069 TO-230-133 TO-230-141 TO-230-142 TO-230-143 TO-230-144 TO-270-007 TO-270-012 TO-270-014 TO-270-235 TO-270-251 TO-270-252 TO-400-200 TO-430-480 TO-430-485 TO-440-002 | | |
| Tank primary diff. pressure monitor | WHC-SD-WM-OSR-016 SL 2.3 | NA | TE-FT-239-001 TE-FT-279-001 TO-040-035 TO-060-101 TO-060-230 TO-060-340 TO-230-065 TO-230-133 | FV DR | |

05/31/96

NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

AW

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit | | OSD Limit | Implementing Procedures | Verification | | Comments |
|------------------------------|-------------------|-------|-----------|--|--------------|----|----------|
| | SL | SL | | | FV | DR | |
| | WHC-SD-WM-OSR-016 | 2.3 | NA | TO-290-142 | FV | DR | |
| | WHC-SD-WM-OSR-016 | 2.4 | NA | TF-FT-239-001 TF-FT-279-001 TF-OR-A-03 TO-040-035 TO-060-101 TO-060-230 TO-060-340 TO-230-095 TO-230-133 TO-230-142 | FV | DR | |
| | WHC-SD-WM-OSR-016 | 3.3.1 | NA | APP-T-231-00102 APP-T-231-00103 APP-T-231-00104 APP-T-231-00105 APP-T-231-00106 APP-T-271-00101 APP-T-271-00102 APP-T-271-00104 APP-T-271-00105 APP-T-271-00106 APP-T-271-00107 APP-T-271-00108 TF-FT-239-001 TF-FT-279-001 TO-001-084 TO-001-184 TO-040-035 TO-060-101 TO-060-230 TO-200-019 TO-200-464 TO-220-027 TO-220-095 TO-230-095 TO-230-098 TO-230-133 TO-230-141 | FV | DR | |

05/31/96

NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AW

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|------------|-----------------------|---|--------------|----------|
| WHC-SD-WM-OSR-016 | LCO 3.3.1 | NA | TO-290-142 TO-290-143 TO-290-144 TO-290-274 TO-270-007 TO-270-011 TO-270-012 TO-270-235 TO-270-824 TO-400-200 TO-430-480 | FV DR | |
| WHC-SD-WM-OSR-016 | LCO 3.3.2 | NA | ARP-T-231-00101 ARP-T-231-00105 ARP-T-231-00106 ARP-T-271-00102 ARP-T-271-00103 ARP-T-271-00104 ARP-T-271-00105 ARP-T-271-00106 ARP-T-271-00107 ARP-T-271-00108 ARP-T-601-00295 TF-OR-A-03 TO-040-035 TO-060-101 TO-060-230 TO-060-340 TO-230-065 TO-230-133 TO-230-142 | FV DR | |
| WHC-SD-WM-OSR-016 | SR 3.3.2.1 | NA | ARP-T-231-00101 TF-OR-A-03 TO-040-035 TO-060-101 TO-060-340 | FV DR | |
| WHC-SD-WM-SAR-016 | 11.6 | OSD-T-151-00007 7.2.5 | TO-060-105 TO-060-341 | NA | |

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AW

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|---|-----------|-----------------------|--|--------------|----------|
| WHC-SD-WM-SAR-016 | 11.6 | OSD-T-151-00007 7.2.5 | TO-400-245 | NA | |
| Gas monitoring / SHMS | NA | NA | NA | NA | |
| Pressure | NA | NA | NA | NA | |
| Tank Annulus Instrumentation | NA | NA | NA | NA | |
| Leak detection manual saps (conductivity probe) | 11.4 | OSD-T-151-00007 7.2.9 | ARP-T-271-00101 ARP-T-271-00102 ARP-T-271-00103 ARP-T-271-00104 ARP-T-271-00105 ARP-T-271-00106 ARP-T-271-00107 ARP-T-271-00108 TO-001-184 TO-020-210 TO-046-590 TO-060-185 TO-060-240 TO-060-341 TO-060-095 TO-230-099 TO-230-133 TO-230-274 TO-270-040 TO-400-200 TO-430-480 | NA | |
| CAM Read Monitor | 11.4 | OSD-T-151-00007 7.2.9 | ARP-T-271-00101 ARP-T-271-00102 ARP-T-271-00103 ARP-T-271-00104 | NA | |

05/31/96

NA = Not applicable or not required

B-159

TABLE 6
OSR/OSD SAFETY CONTROLS

AW

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|---|-----------|------------------------|---|--------------|----------|
| WHC-SD-WM-SAR-016 | 11.4 | OSD-T-151-00007 7.2.9 | APP-T-271-00106 APP-T-271-00107 APP-T-271-00108 TO-001-184 TO-020-210 TO-040-580 TO-080-185 TO-080-240 TO-080-341 TO-220-085 TO-230-089 TO-230-133 TO-230-274 TO-270-040 TO-400-200 TO-430-480 | NA | |
| Pump pit leak detection | 11.7 | OSD-T-151-00007 7.2.10 | TO-001-184 TO-220-085 TO-230-089 TO-230-133 TO-230-274 TO-270-252 TO-400-200 TO-430-480 TO-450-150 | NA | |
| Leak detection conductivity (manual tape) | 11.7 | OSD-T-151-00007 7.2.10 | TO-001-184 TO-220-085 TO-230-089 TO-230-133 TO-230-274 TO-270-252 TO-400-200 TO-430-480 TO-450-150 | NA | |

05/31/96
NA = Not applicable or not required

B-160

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AW

| System/Structures/Components | OSR Limit WHC-SD-WM-SAR-016 | OSD Limit OSD-T-151-00007 7.2.10 | Implementing Procedures TO-450-150 | Verification | Comments |
|-------------------------------------|--------------------------------|-------------------------------------|--|--------------|----------------------------------|
| Temperature | NA | NA | NA | NA | |
| Tank annulus diff. pressure monitor | NA | NA | NA | NA | |
| Tank Structure Instrumentation | NA | NA | NA | NA | |
| Thermocouple data acquisition | AC 5.28.1 | OSD-T-151-00007 7.2.7 | TF-OR-A-03 TO-270-040 TO-600-080 | NA | AC- Not Implemented by ECN |
| Instrument Enclosures | NA | NA | NA | NA | |
| Air lift circulators | NA | NA | NA | NA | 2 air lift circulators in AW-102 |
| Steam coil | NA | NA | NA | NA | Does not exist in AW Farm |
| Caisson | NA | NA | NA | NA | Does not exist in AW Farm |
| -drains | NA | NA | NA | NA | |
| HVAC Systems | NA | NA | NA | NA | |
| Ventilation System(s) | NA | NA | NA | NA | |

05/31/96

NA = Not applicable or not required

B-161

TABLE 6
OSR/OSD SAFETY CONTROLS

AW

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|---|-----------|-----------------------|--|--------------|----------|
| -Passive | NA | NA | NA | NA | |
| -Active | NA | NA | NA | NA | |
| | NA | OSD-T-151-00007 7.3.2 | TO-001-182 TO-001-184 TO-020-155 TO-020-825 TO-060-230 TO-060-340 TO-060-403 TO-060-500 TO-060-503 TO-060-516 TO-230-065 TO-230-133 TO-230-274 TO-270-204 TO-270-221 TO-270-286 TO-270-282 TO-270-266 TO-270-828 | NA | |
| -Shared / common vent system? (Describe in comments section) | NA | NA | NA | NA | |
| -Exhaust vent/hatchway | NA | NA | NA | NA | |
| -Annulus air intake assemblies | NA | NA | NA | NA | |
| -Primary air intake assemblies | NA | NA | NA | NA | |

05/31/96
NA = Not applicable or not required

B-162

TABLE 6
OSR/OSD SAFETY CONTROLS

AW

Tank Farm or Miscellaneous Facility

| System/Structures/Components -Pre-filters (yes/no) | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|---|-----------|--------------------------|--|--------------|----------|
| -HEPA filters (how many filters, stages, parallel vs series etc.) | NA | NA | NA | NA | |
| -Fans | NA | NA | NA | NA | |
| -De-entrainers | NA | NA | NA | NA | |
| -Heaters | NA | NA | NA | NA | |
| HVAC instrumentation | NA | NA | NA | NA | |
| | NA | OSD-T-151-00007 7.3.1.B | TO-060-105 TO-060-230 TO-060-240 TO-060-340 TO-060-341 | NA | |
| Main stack monitor | NA | OSD-T-151-00007 7.3.1.D | TO-060-240 | NA | |
| | NA | OSD-T-151-00031 31.2.2.2 | TO-040-590 | NA | |
| Stack monitor -for annulus system | NA | NA | NA | NA | |
| Primary stack pressure | NA | NA | NA | NA | |
| Annulus stack pressure | NA | NA | NA | NA | |

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AW

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|-------------------------------|-----------|-------------------------|--|--------------|-----------------------------|
| De-entrainer sensor | NA | NA | NA | NA | |
| High filter DP alarm | LCO 3.4.1 | OSD-T-151-00007 7.3.1.A | TO-060-101 TO-060-104 TO-060-105 TO-060-230 TO-060-240 TO-060-340 TO-060-341 | NA | LCO- Not implemented by EGN |
| Primary Seal Pot Pit | NA | NA | NA | NA | |
| Primary Seal Pot Pit Contents | NA | NA | NA | NA | |
| Leak detection | NA | NA | NA | NA | |
| Level element | NA | NA | NA | NA | |
| Drain | NA | NA | NA | NA | |
| Heat trace | NA | NA | NA | NA | |
| Annulus Seal Pot Pit | NA | NA | NA | NA | |
| Annulus Seal Pot Pit Contents | NA | NA | NA | NA | |
| Level element | NA | NA | NA | NA | |

05/31/96
NA = Not applicable or not required

B-164

TABLE 6
OSR/OSD SAFETY CONTROLS

AW

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|-------------------------------------|-------------------|-----------|-------------------------|--------------|--|
| Drain | NA | NA | NA | NA | |
| Ventilation Instrument Pfl | NA | NA | NA | NA | |
| Ventilation Instrument Pfl Contents | NA | NA | NA | NA | |
| CAMs | NA | NA | NA | NA | |
| Annulus pressure | NA | NA | NA | NA | |
| Pfls | NA | NA | NA | NA | |
| Annulus Pump Pfl | NA | NA | NA | NA | |
| Annulus Pump Pfl Contents | NA | NA | NA | NA | |
| Floor drain | NA | NA | NA | NA | |
| Sumpt | NA | NA | NA | NA | |
| Leak detection | WHC-SD-WM-SAR-016 | 11.7 | OSD-T-151-00007 | 7.2.10 | TO-001-184 TO-220-095 TO-230-099 TO-230-133 TO-230-274 TO-270-252 TO-400-200 TO-430-490 |

05/31/96

NA = Not applicable or not required

B-165

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AW

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|------------------------------|-------------------|------------------------|--|--------------|---------------------------|
| | WHC-SD-WM-SAR-016 | OSD-T-151-00007 7.2.10 | TO-450-150 | NA | |
| Portable pH spray | NA | NA | NA | NA | |
| Pump motor | NA | NA | NA | NA | |
| Central Pump Pit | NA | NA | NA | NA | |
| Central Pump Pit Contents | NA | NA | NA | NA | |
| Leak detection | WHC-SD-WM-SAR-016 | OSD-T-151-00007 7.2.10 | TO-001-184 TO-220-095 TO-230-099 TO-230-153 TO-230-274 TO-270-252 TO-400-200 TO-430-480 TO-450-150 | NA | |
| Floor drain | NA | NA | NA | NA | |
| Portable pH spray | NA | NA | NA | NA | |
| Pump Motor | NA | NA | NA | NA | |
| Slurry distributor | NA | NA | NA | NA | |
| Distributor Pit | NA | NA | NA | NA | Does not exist in AW Farm |

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility

AW

| System/Structures/Components Distributor PIT Contents | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|--|-----------|-------------------------|--|--------------|---------------------------|
| Sauce Pit | NA | NA | NA | NA | Does not exist in AW Farm |
| Sauce PIT Contents | NA | NA | NA | NA | Does not exist in AW Farm |
| Heel Pit | NA | NA | NA | NA | Does not exist in AW Farm |
| Heel PIT Contents | NA | NA | NA | NA | Does not exist in AW Farm |
| Leak detection pump pit | NA | NA | NA | NA | Does not exist in AW Farm |
| Leak Detection Pit/Sump Instrumentation | NA | NA | NA | NA | |
| Level sensing system (SpG-WF sump) | NA | OSD-T-151-00007 7.2.2.b | TF-OR-A-03 TO-020-240 TO-020-420 TO-020-820 TO-040-560 TO-230-085 TO-270-204 TO-270-221 TO-270-236 TO-270-252 TO-270-266 TO-270-828 TO-270-828 | NA | |

05/31/96

NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

Tank Farm or Miscellaneous Facility AW

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments |
|--|-----------|-----------|-------------------------|--------------|---------------------------|
| System/Structures/Components Gamma rad monitor (sump) | NA | NA | NA | NA | |
| Leak detection system (pit) | NA | NA | NA | NA | |
| Temperature | NA | NA | NA | NA | |
| Sump | NA | NA | NA | NA | |
| Drain | NA | NA | NA | NA | |
| Portable pit spray | NA | NA | NA | NA | |
| Pump, motor | NA | NA | NA | NA | |
| Pump | NA | NA | NA | NA | |
| Dry wells | NA | NA | NA | NA | |
| Condenser pit | NA | NA | NA | NA | Does not exist in AW Farm |
| Condenser Pit Contents | NA | NA | NA | NA | Does not exist in AW Farm |
| Sludge pump pit | NA | NA | NA | NA | Does not exist in AW Farm |
| Sludge pump pit contents | NA | NA | NA | NA | Does not exist in AW Farm |

05/31/96
NA = Not applicable or not required

TABLE 6
OSR/OSD SAFETY CONTROLS

AW

Tank Farm or Miscellaneous Facility

| System/Structures/Components | OSR Limit | OSD Limit | Implementing Procedures | Verification | Comments | |
|--------------------------------------|-------------------|-----------|-------------------------|--------------|--|-----------------|
| Salt well pump pit | NA | NA | NA | NA | Does not exist in AW Farm | |
| Saltwell Pumping Instrumentation | NA | NA | NA | NA | Does not exist in AW Farm | |
| Hydrogen monitor | NA | NA | NA | NA | AW-106 stack | |
| Weight factor / specific gravity | NA | NA | NA | NA | AW-102 | |
| Drain pit | NA | NA | NA | NA | | |
| Drain Pit Contents | NA | NA | NA | NA | | |
| Drain | NA | NA | NA | NA | | |
| Leak detection | WHC-SD-WM-SAR-016 | 11.7 | OSD-T-151-00007 | 7.2.10 | TO-001-184 TO-220-095 TO-230-099 TO-230-133 TO-230-274 TO-270-252 TO-400-200 TO-430-480 TO-450-150 | NA |
| Portable pit spray | NA | NA | NA | NA | | NA |
| 2 - 10" dia. lines w/ leak detection | NA | NA | NA | NA | | Belong to 242-A |

05/31/96

NA = Not applicable or not required

B-169