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ENGINEERING DATA TRANSMITTAL

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		Design Authority									
		Design Agent									
2	1	Cog. Eng. CP Shaw	<i>Craig Shaw</i>	7/1/98							
2	1	Cog. Mgr. TJ Conrad	<i>TJ Conrad</i>								
		QA									
		Safety									
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References for HNF-SD-WM-TRD-007, "System Specification for the Double-Shell Tank System: HNF-PROs, CFRs, DOE Orders, WACs"

Craig P. Shaw

Cogema Engineering Corporation, Richland, WA 99352
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HNF-2919

**REFERENCES FOR
HNF-SD-WM-TRD-007, *SYSTEM SPECIFICATION
FOR THE DOUBLE-SHELL TANK SYSTEM:*
HNF-PROs, CFRs, DOE ORDERS, WACs**

C. P. Shaw

Cogema Engineering Corporation

July 27, 1998

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LIST OF TERMS

CFR	<i>Code of Federal Regulations</i>
DST Specification	HNF-SD-WM-TRD-007, <i>System Specification for the Double-Shell Tank System</i>
DOE	U.S. Department of Energy
HNF-PRO	Project Hanford Management Contract procedure
PHMC	Project Hanford Management Contract
WAC	<i>Washington Administrative Code</i>

REFERENCES FOR HNF-SD-WM-TRD-007, SYSTEM SPECIFICATION FOR THE DOUBLE-SHELL TANK SYSTEM HNF-PROs, CFRs, DOE ORDERS, WACs

INTRODUCTION

HNF-SD-WM-TRD-007, *System Specification for the Double-Shell Tank System* (hereafter referred to as DST Specification), defines the requirements of the double-shell tank system at the Hanford Site for Phase 1 privatization. Many of the sections in this document reference other documents for design guidance and requirements. Referenced documents include Project Hanford Management Contract (PHMC) procedures (HNF-PROs), *Codes of Federal Regulations* (CFRs), DOE Orders, and *Washington Administrative Codes* (WACs). This document provides rationale for the selection and inclusion of HNF-PROs, CFRs, DOE Orders, and WACs.

This document discusses the origin of references used in 26 sections of the DST Specification. Some sections in the DST Specification reference HNF-PROs for design requirements. Other sections in the DST Specification do not use HNF-PROs but directly reference higher level sources like CFRs, DOE Orders, and WACs. Two sections use the *Hanford Site Radiological Control Manual* (HSRCM-1). The design requirement references cited in this document are recommended for use in the next revision of the DST Specification.

This selection of HNF-PROs is a "snapshot in time" because the HNF-PROs are still evolving. In the future, HNF-PROs may be issued that can replace the higher-level references cited in the DST Specification. HNF-PROs implement higher-order documents, set consistent application on the Hanford Site, and help resolve conflicts between higher-order documents.

REFERENCE SELECTION

The references in the DST Specification were selected on the basis of **technical requirements** rather than programmatic guidance. Fluor Daniel Hanford/Lockheed Martin Hanford Subcontract No. 8023764-9-K001, Part III, Clause 16, paragraph (a), mandates the use of HNF-PROs. HNF-PROs were the reference of choice if one could be found that provided the necessary requirement. If an HNF-PRO could not be found, higher-level references were selected. References that provide only programmatic, administrative, and management guidance are not appropriate for the DST Specification sections that need technical design requirements. The HNF-PROs used in the DST Specification were reviewed for utility to the particular section in the DST Specification.

TRACEABILITY

To show compliance with contractual requirements, the HNF-PROs used in the DST Specification must show traceability to the DOE Orders specified in the CFRs, PHMC Contract, and WACs. Appendix A traces HNF-PROs to the *Tank Waste Remediation System Mission Analysis Report* (MAR), HNF-SD-WM-MAR-008, Rev. 3, and/or PHMC Contract and subsequently to the external requirements. This trace was done electronically using "http://sarissweb.pnl.gov/saris/saris.htm" (SARIS) and the HNF-PRO search function.

Hard copies of the selected HNF-PROs were read, reviewed, and traced for applicability to a particular section in the DST Specification. Likewise, each of the selected CFRs, DOE Orders, and WACs were read for applicability to specific sections of the DST Specification. Many additional HNF-PROs were read and reviewed for use in the DST Specification and found to not include the type of information needed.

ORGANIZATION

The following subsections are organized by DST Specification sections in ascending numeric order. The exact quotation of each section appears in *italics*. Following the quote, if used, the cited HNF-PROs are listed along with a listing of the higher-level references found in each HNF-PRO. Only higher-level references (i.e., CFRs, DOE Orders, WACs) for each HNF-PRO are listed; other HNF-PROs, letters, handbooks, etc., were not included. The selected HNF-PROs often contain many more references than are needed to provide a link to the PHMC Contract and the references cited in the MAR. A comment/suggestion is included after each DST Specification quote. There are no technical requirements referencing HNF-PROs, CFRs, DOE Orders, or WACs in DST Specification sections before Section 3.2.6.1.

DST Specification Section 3.2.6.1, "Environmental Conditions"

The system shall be designed for the natural environmental conditions specified in WHC-SD-GN-ER-501, and to withstand the wind, lightning, earthquake, ashfall, and combination loads per HNF-PRO-097. HNF-PRO-097 will take precedence over WHC-SD-GN-ER-501, if conflicts occur.

Comments/Suggestions: Good reference; ties to DOE 5480.28 that is in the contract. No change to this section.

Higher-Level References of HNF-PRO-097, *Design and Evaluation*

DOE/TIC 11268	A Manual for the Prediction of Blast and Fragment Loading on Structures
HPS-SDC-4.1	Hanford Plant Standard, Standard Design Criteria 4.1, "Design Loads"
DOE-STD-1021-92	Natural Phenomena Hazards Performance Categorization for Structures, Systems and Components.
DOE 5480.23	Nuclear Safety Analysis Reports

DOE 5480.28	Natural Phenomena Hazards Mitigation
DOE 5481.1B	Safety Analysis and Review System
DOE 6430.1A	General Design Criteria
DOE/EP 0108	Standard for Fire Protection of DOE Electronic Computer/Data Processing Systems
DOE-STD-1020	Natural Phenomena Hazards Design Evaluation Criteria for DOE Facilities
DOE-STD-1023	Natural Phenomena Hazards Assessment Criteria
WAC 296 PART N	Department of Labor and Industries

DST Specification Section 3.2.7, "Transportability"

Assemblies and components shall be designed to be handled, packaged, marked, and transported in accordance with HNF-PRO-157.

Comments/Suggestions: HNF-PRO-157 should be deleted. This section addresses transportation issues like truck, rail, vessel, etc. The intent of this section is to prevent design of hardware so large and heavy that existing bridges, roads, underpasses, etc., cannot accommodate their transport. Radioactive or hazardous material transport is covered in Section 3.5.2. This section should reference 49 CFR 174, 49 CFR 176, and 49 CFR 177.

DST Specification Section 3.2.8, "Flexibility and Expansion"

The system shall comply with the flexibility and expansion requirements of DOE 6430.1A, Division I.

Comments/Suggestions: No HNF-PRO has been identified that addresses this area; therefore, DOE 6430.1A is acceptable.

DST Specification Section 3.3, "Design and Construction"

The system shall follow the general design guidelines provided by DOE 6430.1A.

Comments/Suggestions: No HNF-PRO has been identified that addresses this area; therefore, DOE 6430.1A is acceptable.

DST Specification Section 3.3.1.1, "Toxic Products and Formulations"

The system shall comply with the requirements of HNF-PRO-451, Regulated Substance Management.

Comments/Suggestions: Good reference.

Higher-Level References of HNF-PRO-451, *Regulated Substance Management*

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1926	Safety and Health Regulation for Construction
40 CFR 112	Oil Pollution Prevention
40 CFR 165	Pesticide Use and Control
40 CFR 247	Toxic Substance Control Act
40 CFR 280	Storage Tanks
40 CFR 61	Asbestos
40 CFR 720	Toxic Substance Control Act
40 CFR 761	Polychlorinated Biphenyls
40 CFR 763	Asbestos
49 CFR 171	Asbestos
49 CFR 172	Asbestos
DOE 6430.1A	General Design Criteria
WAC 16-228	Pesticide Use and Control
WAC 16-230	Pesticide Use and Control
WAC 16-231	Pesticide Use and Control
WAC 16-232	Pesticide Use and Control
WAC 173-300	Dangerous Wastes
WAC 173-340	Storage Tanks
WAC 173-360	Storage Tanks
WAC 296-65	Asbestos

DST Specification Section 3.3.1.2, "Dangerous Waste"

The system shall incorporate dangerous waste storage and treatment design features that comply with the requirements of WAC 173-303.

Comments/Suggestions: No HNF-PRO has been identified that addresses these design issues as well as WAC 173-303; therefore, WAC 173-303 will be retained.

DST Specification Section 3.3.1.3, "Decontamination and Decommissioning"

The system shall be designed for ease of decontamination during operation and for decommissioning at the end of system life in accordance with DOE 6430.1A, Sections 0110-99.0.1, 0205-2, and 1300-11.

Comment: No HNF-PRO has been identified that addresses this area..

DST Specification Section 3.3.2, "Electromagnetic Radiation"

The system shall comply with electromagnetic radiation emission requirements set forth in 47 CFR 15, Subpart B (TBR).

Comments/Suggestions: No HNF-PRO has been identified that addresses this area. Change text to read "the system shall comply with electromagnetic radiation emission requirements set forth in HNF-2962 Rev 0."

DST Specification Section 3.3.3, "Nameplates and Product Markings"

The system nameplates and marking shall comply with the requirements of HNF-PRO-1819, Section 2.3.6.

Comments/Suggestions: This HNF-PRO does not define marking requirements and should be deleted. Suggest using DOE 6430.1A, Section 1300-12.4.11. This DOE Order does a good job itself and also references NUREG-0700 and MIL-STD-1472, Section 5.5. DOE 6430.1A is in the PHMC Contract.

DST Specification Section 3.3.6.1.1, "Occupational Radiological Protection"

The system shall be designed to protect workers from occupational radiation exposures in accordance with the requirements contained in HSRM-1 [DOE/RL-96-109].

Comments/Suggestions: None

DST Specification Section 3.3.6.2.1, Corrosion Prevention and Control

The system shall incorporate corrosion prevention and control features in accordance with WAC 173-303-640(3).

Comments/Suggestions: Add DOE 5820.2A, Chapter I (3)b(2)(g) as a reference to this section; it addresses cathodic corrosion protection. No HNF-PROs were found that deal with "cathodic protection."

DST Specification Section 3.3.6.2.5, "Fire Protection"

(Note: This is a new section to be added to the next revision of the DST Specification.)
The system shall meet fire protection design requirements as defined in HNF-PRO-349.

Comments/Suggestions: This is a very good reference that specifies using mandatory design criteria found in CFRs, DOE Orders, national consensus standards, and WACs.

DST Specification Section 3.3.6.3.1, "Secondary Containment and Leak Detection"

The system shall incorporate secondary containment and leak detection design features in accordance with 40CFR264.193 and 40CFR265.193; WAC 173-360 (for underground petroleum tanks only); and WAC 173-303-640(4).

Comments/Suggestions: No HNF-PROs were found that specifically address leak detection design aspects.

DST Specification Section 3.3.6.3.2, "Spill Prevention and Controls"

The system shall incorporate spill prevention and control design features in accordance with 40CFR264.193 and 40CFR265.193; WAC 173-303-630(7) and WAC 173-303-640(5). In the event of a conflict, the most stringent requirement shall take precedence.

Comments/Suggestions: No HNF-PROs address "spill prevention" design. The cited CFRs and WACs do address design.

DST Specification Section 3.3.6.3.5, "Monitoring of Liquid Effluent Discharges to the Environment"

The system shall be designed to comply with the groundwater monitoring requirements contained in WAC 173-200, WAC 173-201A, and WAC 173-240.

Comments/Suggestions: The five HNF-PROs returned to the query "effluent monitoring" all deal with the subject at a programmatic level. The WACs address design.

DST Specification Section 3.3.6.3.6, "Radiation Protection of the Public and Environment"

The system shall be designed in accordance with the radiation release limits specified in HNF-PRO-451, HNF-PRO-452, and HNF-PRO-455.

Comments/Suggestions: These three HNF-PROs miss the mark and should be deleted. No HNF-PROs were found that deal with design. For public exposure add 10 CFR 20. For environmental protection add 40 CFR 191.

Deleted HNF-PROs:

HNF-PRO-451 Regulated Substance Management
HNF-PRO-452 NEPA, SEPA, Cultural and Natural Resources
HNF-PRO-455 Solid Waste Management

DST Specification Section 3.3.7, "Human Engineering"

System design shall comply with Section 1300-12, "Human Factors Engineering," of DOE 6430.1A.

Comments/Suggestions: HNF-PROs do not deal with this subject at a design level; therefore, continue to use DOE 6430.1A.

DST Specification Section 3.3.8.1, "Criticality Safety"

The system shall be designed in accordance with the nuclear criticality safety requirements of HNF-PRO-334 and HNF-PRO-537 through HNF-PRO-550.

Comments/Suggestions: Change to use HNF-PRO-334, -537, -539, -543, and -546. The HNF-PROs to be deleted do not address **design** issues. DOE 5480.24 is the document which drives the HNF-PROs that address criticality.

Deleted HNF-PROs:

- HNF-PRO-538 Criticality Safety Training
- HNF-PRO-540 Criticality Prevention Specifications
- HNF-PRO-541 Criticality Safety Postings
- HNF-PRO-542 Criticality Liability Fissionable Material
- HNF-PRO-544 Criticality Plant Configuration Control
- HNF-PRO-545 Fissionable Material Packaging and Transportation.
- HNF-PRO-547 Criticality Safety for Firefighting
- HNF-PRO-548 Criticality Safety Inspections and Assessments
- HNF-PRO-549 Criticality Safety Nonconformance Response
- HNF-PRO-550 Criticality or Potential Criticality Accidents

Higher-Level References of HNF-PRO-334, *Criticality Safety General Requirements*

DOE 5480.24 Nuclear Criticality Safety

Higher-Level References of HNF-PRO-537, *Criticality Safety Control of Fissionable Material*

DOE 5480.24 Nuclear Criticality Safety

Higher-Level References of HNF-PRO-539, *Criticality Safety Evaluation*

DOE 5480.24 Nuclear Criticality Safety
DOE 5480.23 Nuclear Safety Analysis Reports

Higher-Level References of HNF-PRO-543, *Fissionable Material Storage*

DOE 5480.5 Safety of Nuclear Facilities
DOE 6430.1A General Design Criteria

Higher-Level References of HNF-PRO-546, *Criticality Alarm System*
DOE 5480.24 Nuclear Criticality Safety

DST Specification Section 3.3.8.2, "Nuclear Safety Classification"

The subsystem and components shall be designed in accordance with the safety classification for each. The safety classification shall be determined using the process described in HNF-PRO-700, -701, -702, -703, and -704 based on the guidelines in HNF-SD-WM-BIO-001, Tables 5.3-2 and 5.3-3 (AB).

Comments/Suggestions: None.

Higher-Level References of HNF-PRO-700, Rev. 1, *Safety Analysis and Technical Safety Requirements*

DOE 5480.21	Unreviewed Safety Questions
DOE 5480.22	Technical Safety Requirements
DOE 5480.23	Nuclear Safety Analysis Reports
DOE 5481.1B	Safety Analysis and Review System
DOE 6430.1A	General Design Criteria

Higher-Level References of HNF-PRO-701, Rev. 0, *Safety Analysis Process - Existing Facility*

DOE-STD-1082-94	Preparation, Review, and Approval of Implementation Plans for Nuclear Safety Requirements
DOE-STD-3011-94	Guidance for Preparation of DOE 5480.22 (TSR) and DOE 5480.23 (SAR) Implementation Plans
DOE-EM-STD-5502-94	Hazard Baseline Documentation

Higher-Level References of HNF-PRO-702, Rev. 0, *Safety Analysis Process - Facility Change or Modification*

DOE 5480.21	Unreviewed Safety Questions
DOE 5480.23	Nuclear Safety Analysis Reports
DOE 5481.1B	Safety Analysis and Review Systems

Higher-Level References of HNF-PRO-703, Rev. 0, *Safety Analysis Process - New Project*

DOE 5480.21	Unreviewed Safety Questions
DOE 5480.23	Nuclear Safety Analysis Reports
DOE 5481.1B	Safety Analysis and Review Systems
DOE 6430.1A	General Design Criteria

Higher-Level References of HNF-PRO-704, Rev. 0, *Hazard and Accident Analysis Process*

29 CFR 1910	Occupational Safety and Health Standards, Section 1910.119
10 CFR 30	Rules of General Applicability to Domestic Licensing of Byproduct Material
49 CFR 173	Shippers--General Requirements for Shipments and Packagings
DOE 5480.23	Nuclear Safety Analysis Reports
DOE 5481.1B	Safety Analysis and Review Systems

DOEN 5400.9	Sealed Source Control Policy
DOE-STD-1027-92	Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports
DOE-STD-3009-94	Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Safety Analysis Reports
DOE-EM-STD-5502-94	Hazard Baseline Documentation

Higher-Level References of HNF-PRO-430, *Safety Analysis Program*

DOE 5480.21	Unreviewed Safety Questions
DOE 5480.22	Technical Safety Requirements
DOE 5480.23	Nuclear Safety Analysis Reports
DOE 6430.1A	General Design Criteria
DOE STD 1027-92	Hazard Categorization and Accident Analysis Techniques for Compliance with DOE 5480.23, Nuclear Safety Analysis Reports
DOE STD 3009-94	Preparation Guide for U.S. DOE Nonreactor Nuclear Facility Safety Analysis Reports
DOE STD 3011-94	Guide for Preparation of DOE 5480.22&23 Implementation Plans
DOE-EM-STD-5502-94	Hazard Baseline Documentation

DST Specification Section 3.3.9.1, "General System and Information Security"

The system shall be designed in accordance with HNF-PRO-394.

Comments/Suggestions: None.

Higher-Level References of HNF-PRO-394, *Physical Protection of Properties and Facilities*

DOE M 5632.1C-1 Manual for Protection and Control of Safeguards and Security Interests

DST Specification Section 3.3.9.2, "Radiation Area Security"

The system shall be designed such that access controls to areas of high radiation meet the requirements of the Hanford Site Radiological Control Manual (HSRCM-1, chapter 2)

Comments/Suggestions: HNF-PRO database returns no hits on either "radiation area security" or "radiation security"; therefore, the HSRCM-1 reference is appropriate.

DST Specification Section 3.4, "Documentation"

Records, documents, and table control pertinent to design functions shall be in accordance with HNF-PRO-222 and HNF-PRO-224. Drafting standards for drawings shall be in accordance with HNF-PRO-242.

Comments/Suggestions: Only HNF-PRO-222 ties to the PHMC Contract or MAR. The other two HNF-PROs do not tie to either the MAR or contract but provide the needed guidance and requirement and should be retained in spite of their lack of traceability.

Higher-Level References of HNF-PRO-222, *Quality Assurance Records*
DOE 1324.5B Records Management Program

Higher-Level References of HNF-PRO-224, *Document Control*
DOE-RL-CLS-HBK Hanford Site Handbook for Control of Classified Documents

Higher-Level References of HNF-PRO-242, *Engineering Drawing Requirements*
NONE

DST Specification Section 3.5.2, "Transportation of Hazardous Materials"

Subsystems used to ship hazardous materials shall be designed to comply with the requirements of HNF-PRO-154 through HNF-PRO-163.

Comments/Suggestions: Delete the following HNF-PROs because they do not apply: HNF-PRO-154, -155, -158, -159, -160, -161, -162, and -163. Add HNF-PRO-542. The common driver for these HNF-PROs is DOE 5480.3, *Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances, and Hazardous Wastes*. (This is in the PHMC Contract.)

Higher-Level References of HNF-PRO-156, *Nonradioactive Hazardous Material/Waste Shipments*

40 CFR 261	Identification and Listing of Hazardous Waste
49 CFR 100-199	Transportation
DOE 460.1A	Packaging and Transportation Safety
DOE 460.2A	Departmental Materials Transportation and Packing Management
Hanford Facility	Resource Conservation and Recovery Act of 1976 Permit
WAC 173-303	Dangerous Waste Regulations

Higher-Level References of HNF-PRO-157, *Radioactive Hazardous Material/Waste Shipments*

10 CFR	Energy
40 CFR 260-265	Protection of Environment
AL-56XA	DOE Transportation Safeguards System
Atomic Energy Act of 1954	
DOE 1540.2	Hazardous Materials Packing for Transport - Administrative Procedures
DOE 5480.3	Safety Requirements for the Packing and Transportation of Hazardous Materials, Hazardous Substances, and Hazardous Wastes
DOE 5633.3B	Control and Accountability of Nuclear Materials
DOE(RIS) NMMS	Directory of Reporting Identification Symbols
DOE 460.1A	Packaging and Transportation Safety
DOE 460.2A	Departmental Materials Transportation & Packaging Management

HSRCM-1 Hanford Site Radiological Control Manual
 Resource Conservation and Recovery Act of 1976
 WAC 173-303 Dangerous Waste Regulations

Higher-Level References of HNF-PRO-542, *Fissionable Material Labeling*
 DOE 5480.24 Nuclear Criticality Safety

Higher-Level References of HNF-PRO-545, *Fissionable Material Packaging and Transportation*
 DOE 5480.3 Safety Requirements for the Packing and Transportation of Hazardous
 Materials, Hazardous Substances, and Hazardous Wastes
 10 CFR 71 Packaging of Radioactive Material for Transport
 49 CFR 171-179 Transportation

DST Specification Section 3.5.3.1, "Solid Waste Acceptance Criteria"

Wastes generated as a result of system operations and maintenance shall be disposed of in accordance with HNF-PRO-455, Solid Waste Management.

Comments/Suggestions: Solid reference, well tied to CFRs and WACs. This HNF-PRO has an excellent appendix that identifies all of the required CFRs and WACs. It ties to DOE 5400.5 and 5820.2A, which are in the contract.

Higher-Level References of HNF-PRO-455, *Solid Waste Management*
 40 CFR 191 Environmental Radiation Protection Standards for Management and Disposal of
 Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes
 40 CFR 241 Protection of Environment
 40 CFR 247-250 Protection of Environment
 40 CFR 252-253 Protection of Environment
 40 CFR 260 Protection of Environment
 40 CFR 260-270 Protection of Environment
 40 CFR 268 Land Disposal Restrictions
 40 CFR 279 Protection of Environment
 40 CFR 61 National Emission Standards for Hazardous Air Pollutants
 49 CFR 171-179 Transportation
 DOE 5400.5 Radiation Protection of the Public and the Environment
 DOE 5820.2A Radioactive Waste Management
 RCW70.95.240 Solid Waste Management - Reduction and Recycling
 WAC 173-300 Certification of Operator of Solid Waste Incinerator and Landfill Facilities
 WAC 173-303 Dangerous Waste Regulations
 WAC 173-304 Minimum Functional Standards for Solid Waste Handling
 WAC 246-290 Public Water Supplies

DST Specification Section 3.6, "Personnel and Training"

The system shall be designed such that it can be operated by personnel possessing qualifications in accordance with HNF-PRO-057, HNF-PRO-153, and HNF-SD-WM-TR-026.

Comments/Suggestions: Add HNF-PRO-065, -082, -071, -161, -068.

All of these tie to DOE 5480.20A, Chapter IV, which provides the designer information about the knowledge, education, and skills of the people who will operate and maintain the hardware designed.

Higher-Level References of HNF-PRO-057, *Hanford General Employee Training*

10 CFR 707	Workplace Substance Abuse Programs at DOE Sites
10 CFR 835	Occupational Radiation Protection
29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1926	Safety and Health Regulation for Construction
Resource Conservation and Recovery Act of 1976	
DOE 1240.2A/P	Unclassified Visits and Assignments by Foreign Nationals
DOE 1360.2B	Unclassified Computer Security Program
DOE 2030.4B	Reporting Fraud, Waste, and Abuse
DOE 3791.2A	Federal Employee Motor Vehicle Safety
DOE 470.1	Safeguards and Security Program
DOE 5400.1	General Environment Protection Program
DOE 5480.10	Contractor Industrial Hygiene Program
DOE 5480.11	Radiation Protection for Occupational Workers
DOE 5480.19	Conduct of Operations Requirements
DOE 5480.20A	Personnel Qualification and Accreditation
DOE 5483.1A	Occupation Safety and Health Program for DOE
DOE 5500.3A	Planning and Preparedness for Operation Emergencies
DOE 5700.6C	Quality Assurance
WAC 173-303	Dangerous Waste Regulations
WAC 173-330	Used Automotive Oil Recycling Signs
WAC 296-62	Department of Labor and Industries

Higher-Level References of HNF-PRO-153, *Nuclear Process Operator Training Program* NONE

Higher-Level References of HNF-PRO-166, *Transportation Safety Training Requirements*

DOE 460.1A	Packaging and Transportation Safety
DOE 460.2A	Departmental Materials Transportation and Packing Management

Higher-Level References of HNF-PRO-065, *Environmental Training*

DOE 5480.20A	Personnel Qualification and Accreditation
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Higher-Level References of HNF-PRO-082, *Radiological Worker Training*

10 CFR 835	Occupational Radiation Protection
DOE 5480.11	Radiation Protection for Occupational Workers
DOE 5480.20A	Personnel Qualification and Accreditation

DOE 5480.18B	Nuclear Facility Training Accreditation Program
DOE/EH-256T	Department of Energy Radiological Control Manual

Higher-Level References of HNF-PRO-071, *Radiological Control Technician Training*

10 CFR 835	Occupational Radiation Protection
DOE 5480.11	Radiation Protection for Occupational Workers
DOE 5480.20A	Personnel Qualification and Accreditation
DOE 5480.18B	Nuclear Facility Training Accreditation Program
DOE/EH-256T	Department of Energy Radiological Control Manual

Higher-Level References of HNF-PRO-161, *Criticality Safety Training*

10 CFR 835	Occupational Radiation Protection
DOE 5480.20A	Personnel Qualification and Accreditation

Higher-Level References of HNF-PRO-068, *Site Maintenance Training*

DOE 4330.4A	Maintenance Management Program
DOE 5480.19	Conduct of Operation
DOE 5480.20	Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Facilities

DST Specification Section 3.9, "Qualification"

The system design shall be verified to HNF-PRO-445.

Comments/Suggestions: HNF-PRO-445 does not tie to the PHMC Contract or MAR but provides exactly the kind of guidance and requirements needed in this section. HNF-PRO-445 provides guidance to specify specific qualification testing and/or test conditions for system qualification. Good reference, stands alone.

Higher-Level References of HNF-PRO-445, *Design Verification Requirements*

NONE

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APPENDIX A TRACEABILITY

Hard copies of the selected Project Hanford Management Contract (PHMC) Procedures (HNF-PROs) were read, reviewed, and traced for applicability to a particular section in HNF-SD-WM-TRD-007, *System Specification for the Double-Shell Tank System* (hereafter referred to as DST Specification). Likewise, each of the selected CFRs, DOE Orders, and WACs were read for applicability to specific sections of the DST Specification. Many additional HNF-PROs were read and reviewed for use in the DST Specification and found not to include the type of information needed.

This appendix includes a list of the HNF-PROs used in the DST Specification and how they can be traced to the PHMC Contract and the *Tank Waste Remediation System Mission Analysis Report* (MAR), HNF-SD-WM-MAR-003, Rev. 3. HNF-PROs trace to the MAR either (1) directly because they cite a reference that is in the MAR; or (2) indirectly by citing a DOE Order that, in turn, cites a reference in the MAR or to the DOE Orders in the PHMC Contract (contract Section J, Appendix C on the Internet). The indirect reference is followed by its tie to the MAR in parenthesis.

This listing of HNF-PRO traceability is electronic only. Only the tie between the documents has been established, the exact "chapter and verse" in the higher level reference has not been tied to the HNF-PRO electronically for its applicability. "Applicability" of HNF-PROs was established by reading a hard copy.

An example of how the search was conducted is as follows: The MAR reference 10 CFR 835 was submitted as a key word to the HNF-PRO database and HNF-PRO-057 was returned (a direct connection). Next, MAR reference 29 CFR 1910 was submitted by SARIS to the DOE Order database and DOE 5480.19 was returned. DOE 5480.19 was then submitted to the HNF-PRO database and HNF-PRO-057 was returned (indirect connection). The PHMC Contract tie was a direct query of the listed DOE Orders to the HNF-PRO database.

HNF-PRO Ties to Higher Level References

HNF-PRO-057, Rev. 0, *Hanford General Employee Training*

Direct: 10 CFR 835
 Indirect: DOE 5400.1 (DOE 5820.2A), DOE 5480.19 (29 CFR 1910)
 PHMC: DOE 5480.11, DOE 5480.20A, DOE 5480.19, DOE 5480.10, DOE 5483.1A,
 DOE 5700.6C

Section 3.6, Personnel and Training

HNF-PRO-065, Rev. 0, *Environmental Training*

Direct: none
 Indirect: DOE 5480.20A (10 CFR 835)
 PHMC: DOE 5480.20A

Section 3.6, Personnel and Training

HNF-PRO-068, Rev. 0, *Site Maintenance Training*

Direct: none
 Indirect: DOE 5480.19 (29 CFR 1910)
 PHMC: DOE 5480.1
 Section 3.6, Personnel and Training

HNF-PRO-071, Rev. 0, *Radiological Control Technician Training*

Direct: 10 CFR 835
 Indirect: DOE 5480.20A (10 CFR 835)
 PHMC: DOE 5480.11, DOE 5480.20A
 Section 3.6, Personnel and Training

HNF-PRO-082, Rev. 0, *Radiological Worker Training*

Direct: none
 Indirect: DOE 5480.20A (10 CFR 835)
 PHMC: DOE 5480.11, DOE 5480.20A
 Section 3.6, Personnel and Training

HNF-PRO-97, Rev. 0, *Engineering Design and Evaluation*

Direct: none
 Indirect: DOE 5480.23 (40 CFR 191)
 PHMC: DOE 5480.23, DOE 5481.1B, DOE 5480.28
 Section 3.2.6.1, Environmental Conditions

HNF-PRO-153, Rev. 0, *Nuclear Process Operator Training Program*

Direct: none
 Indirect: DOE 5480.19 (29 CFR 1910)
 PHMC: DOE 5480.20A, DOE 5480.19
 Section 3.6, Personnel and Training

HNF-PRO-156, Rev. 0, *Nonradioactive Hazardous Materials/Hazardous Waste (HM/HW) Shipments*

Direct: WAC 173-303
 Indirect: none
 PHMC: none
 Section 3.5.2, Transportation of Hazardous Materials

HNF-PRO-157, Rev. 0, *Radioactive Material/Waste Shipments*

Direct: WAC 173-303
 Indirect: DOE 5400.5 (DOE 5820.2A), DOE 5633.3B (DOE 5820.2A)
 PHMC: DOE 5400.5, DOE 5480.3, DOE 1540.2, DOE 5700.6C
 Section 3.2.7, Transportability
 Section 3.5.2, Transportation of Hazardous Materials

HNF-PRO-161, Rev. 0, *Criticality Safety Training Program Description*

Direct: 10 CFR 835
 Indirect: DOE 5480.20A (10 CFR 835)
 PHMC: DOE 5480.20A
 Section 3.5.2, Transportation of Hazardous Materials
 Section 3.6, Personnel and Training

HNF-PRO-166, *Transportation Safety Training Requirements*

Direct: none
 Indirect: none
 PHMC: DOE 5480.3
 Section 3.6, Personnel and Training

HNF-PRO-222, *Quality Assurance Records*

Direct: none
 Indirect: none
 PHMC: DOE 1324.5B
 Section 3.4, Documentation

HNF-PRO-334, *Criticality Safety General Requirements*

Direct: none
 Indirect: none
 PHMC: DOE 5480.24
 Section 3.3.8.1, Criticality Safety

HNF-PRO-394, *Physical Protection of Properties and Facilities*

Direct: none
 Indirect: none
 PHMC: DOE 5632.1C
 Section 3.3.9.1, General System and Information Security

HNF-PRO-430, Rev. 1, *Safety Analysis Program*

Direct: none
 Indirect: DOE 5480.21 (10 CFR 20), DOE 5480.23 (40 CFR 191, DOE 4330.4B)
 PHMC: DOE 5480.23, DOE 5480.22, DOE 5480.21, DOE 5481.1B, DOE 6430.1A
 Section 3.3.8.2, Nuclear Safety Classification

HNF-PRO-451, Rev. 0, *Regulated Substance Management*

Direct: 10 CF R61, 40 CFR 61, 40 CFR 761, 29 CFR 1910, WAC 173-303,
 WAC 173-360
 Indirect: DOE 5820.2A (40 CFR 61, 40 CFR 191, 40 CFR 264)
 PHMC: DOE 6430.1A
 Section 3.3.1.1, Toxic Products and Formulations

HNF-PRO-455, Rev. 0, *Solid Waste Management*

Direct: 10 CFR 61, 40 CFR 61, 40 CFR 191, 40 CFR 265, 40 CFR 268, 40 CFR 279,
WAC 173-303, DOE 5820.2A
Indirect: DOE 5400.5 (DOE 5820.2A), DOE 5820.2A (40 CFR 61, 40 CFR 191,
40 CFR 264)
PHMC: DOE 5400.5
Section 3.5.3.1, Solid Waste Acceptance Criteria

HNF-PRO-500, *Operations Security*

Direct: none
Indirect: none
PHMC: DOE 471.2A, 1240.2B
Section 3.3.9.1, General System and Information Security

HNF-PRO-537, *Criticality Safety Control of Fissionable Material*

Direct: none
Indirect: none
PHMC: DOE 5480.24
Section 3.3.8.1, Criticality Safety

HNF-PRO-539, Rev. 0, *Criticality Safety Evaluations*

Direct: none
Indirect: DOE 5480.23 (DOE 4330.4B, 40 CFR 191)
PHMC: DOE 5480.23, DOE 5480.24
Section 3.3.8.1, Criticality Safety

HNF-PRO-542, *Criticality Liability Fissionable Material*

Direct: none
Indirect: none
PHMC: DOE 5480.24
Section 3.5.2, Transportation of Hazardous Materials

HNF-PRO-543, *Fissionable Material Storage*

Direct: none
Indirect: none
PHMC: DOE 5480.24
Section 3.3.8.1, Criticality Safety

HNF-PRO-545, *Fissionable Material Packaging and Transportation*

Direct: none
Indirect: none
PHMC: DOE 5480.24
Section 3.5.2, Transportation of Hazardous Materials

HNF-PRO-546, *Criticality Alarm System*

Direct: none
 Indirect: none
 PHMC: DOE 5480.24
 Section 3.3.8.1, Criticality Safety

HNF-PRO-700, Rev. 1, *Safety Analysis and Technical Safety Requirements*

Direct: none
 Indirect: DOE 5480.21 (10 CFR 20), 5480.23 (40 CFR 191, DOE 4330.4B)
 PHMC: DOE 5480.23, DOE 5480.22, DOE 5480.21, DOE 5481.1B, DOE 6430.1A
 Section 3.3.8.2, Nuclear Safety Classification

HNF-PRO-701, Rev. 0, *Safety Analysis Process - Existing Facility*

Direct: none
 Indirect: DOE 5480.21 (10 CFR 20), DOE 5480.23 (40 CFR 191, DOE 4330.4B)
 PHMC: DOE 5480.23, DOE 5480.22, DOE 5480.21, DOE 5481.1B, DOE 6430.1A
 Section 3.3.8.2, Nuclear Safety Classification

HNF-PRO-702, Rev. 0, *Safety Analysis Process - Facility Change or Modification*

Direct: none
 Indirect: DOE 5480.23 (40 CFR 191, DOE 4330.4B)
 PHMC: DOE 5480.23
 Section 3.3.8.2, Nuclear Safety Classification

HNF-PRO-703, Rev. 0, *Safety Analysis Process - New Project*

Direct: none
 Indirect: DOE 5480.21 (10 CFR 20), 5480.23 (40 CFR 191, DOE 4330.4B)
 PHMC: DOE 5480.23, 5480.21, 5481.1B, 6430.1A
 Section 3.3.8.2, Nuclear Safety Classification

HNF-PRO-704, Rev. 0, *Hazard and Accident Analysis Process*

Direct: 29 CFR 1910
 Indirect: DOE 5480.23 (40 CFR 191, DOE 4330.4B)
 PHMC: DOE 5480.23, 5481.1B
 Section 3.3.8.2, Nuclear Safety Classification

HNF-PRO-1629, Rev. 0, *ALARA Administrative Control Levels*

Direct: 10 CFR 835
 Indirect: none
 PHMC: none
 Section 3.3.6.3.6, Radiation Protection of the Public and Environment

HNF-PRO-1997, Rev. 1, *Construction Program Overview*

Direct: none
 Indirect: DOE 430.1 (DOE 4330.4B)
 PHMC: DOE 430.1
 Section 3.3, Design and Construction

DST Specification HNF-PROs that DO NOT Trace to MAR or PHMC Contract

HNF-PRO-224, *Document Control*
Section 3.4, Documentation

HNF-PRO-242, *Engineering Drawing Requirements*
Section 3.4, Documentation

HNF-PRO-445, *Design Verification Requirements*
Section 3.9, Qualification

Full Titles of MAR Direct and Indirect References

10 CFR 61	Licensing Requirements for Land Disposal of Radioactive Waste
10 CFR 835	Occupational Radiation Protection
29 CFR 1910	Occupational Safety and Health Standards
40 CFR 61	National Emission Standards for Hazardous Air Pollutants
40 CFR 268	Land Disposal Restrictions
40 CFR 191	Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic
40 CFR 279	Standards of the Management of Used Oil
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 761	Polychlorinated Biphenyls (PCBs), Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
WAC 173-303	Dangerous waste regulations.
WAC 173-360	Underground storage tank regulations.

(Note: All of these DOE orders are listed in the PHMC Contract.)

DOE 4330.4B	Maintenance Management Program
DOE-5400.1/P	General Environmental Protection Program
DOE 5400.5/P	Radiation Protection of the Public and the Environment
DOE 5480.19/P	Conduct of Operations Requirements for DOE Facilities
DOE 5480.20A/P	Personnel Selection, Qualification, and Training
DOE-5632.1C/P	Protection and Control of Safeguards and Security
DOE 5633.3B/P	Control and Accountability of Nuclear Materials
DOE 5820.2A/P	Radioactive Waste Management
DOE-5480.21/P	Unreviewed Safety Questions
DOE-5480.23/P	Nuclear Safety Analysis Reports

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