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Department of Energy

Richland Operations Office
P.O. Box 550
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JUL 09 1996

96-EAP-201

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Dear Messrs. Jaraysi and Witczak:

QUARTERLY NOTIFICATION OF CLASS 1 MODIFICATIONS TO THE HANFORD FACILITY RESOURCE CONSERVATION AND RECOVERY ACT PERMIT, DANGEROUS WASTE PORTION (QUARTER ENDING JUNE 30, 1996 — PERMIT CONDITION I.C.3.)

Condition I.C.3. of the Hanford Facility Resource Conservation and Recovery Act Permit (RCRA Permit), Dangerous Waste Portion, (DW Portion), addresses Class 1 modifications as defined in Washington Administrative Code (WAC) 173-303-830(4)(a)(i)(A). This condition allows for quarterly notification of Class 1 modifications to be made to the State of Washington Department of Ecology (Ecology). These modifications are under implementation. A listing of these modifications is maintained in the Hanford Facility Operating Record. The Class 1 modifications are discussed as follows.

The Hanford Facility RCRA Permit, DW Portion has been modified this quarter to update information in Parts II, III, and V (Enclosure). Part II Class 1 modifications include a notification of a change in contractor and a revised Hanford Well Remediation and Decommissioning Plan. Part III Class 1 modifications pertain to the 616 Nonradioactive Dangerous Waste Storage Facility and 305-B Storage Facility. Part V Class 1 modifications pertain to the 183-H Solar Evaporation Basins. The Class 1 modifications are being made to ensure that all activities conducted are in compliance with the RCRA Permit, DW Portion.

Should Ecology determine that the enclosed modifications do not qualify as Class 1 modifications as defined in WAC 173-303-830, written authorization to continue operations is requested until the appropriate level of modification can be accomplished.

In accordance with a teleconference held with Mr. Moses Jaraysi of Ecology on March 3, 1995, a transmittal letter signed by the permittees is sufficient to authorize the submittal of the Quarterly Notification of Class 1 Modifications

Messrs. Jaraysi and Witczak
96-EAP-201

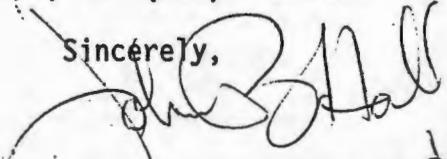
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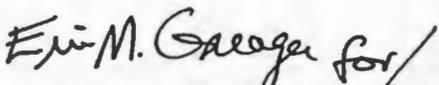
to the Hanford Facility RCRA Permit DW Portion and to meet the intent of Permit Condition I.F., Signatory Requirement.

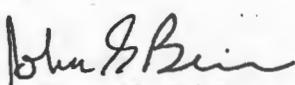
Should you have any questions regarding this information, please contact C. E. Clark, U.S. Department of Energy, Richland Operations Office, at (509) 376-9333; S. M. Price, Westinghouse Hanford Company, at (509) 376-1653; H. T. Tilden II, Pacific Northwest National Laboratory, at (509) 376-0499; or J. W. Badden, Bechtel Hanford, Inc., at (509) 372-9033.

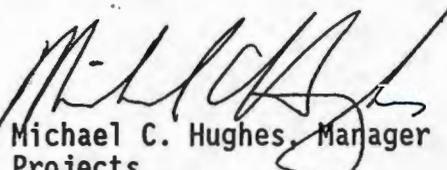
Sincerely,


James E. Rasmussen, Director
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Enclosure:
Class 1 Modifications to
the Hanford Facility
RCRA Permit, DW Portion
(Quarter Ending June 30, 1996)

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**QUARTERLY NOTIFICATION OF CLASS 1 MODIFICATIONS TO
THE HANFORD FACILITY RCRA PERMIT,
DANGEROUS WASTE PORTION
(Quarter Ending June 30, 1996)**

Page 1 of 16

**PART II CLASS 1 MODIFICATIONS:
STANDARD CONDITIONS**

1. **Change:** During the reporting quarter (on May 9, 1996), the Department of Energy, Richland Operations Office announced that it had determined the competitive range for the Project Hanford Management Contract (PHMC) solicitation.

The PHMC Request for Proposals, which sought proposals from results-oriented contractors to manage the Hanford Site in southeastern Washington State, was issued on January 4, 1996, and proposals were due to the DOE on March 25, 1996. The firms, listed in alphabetical order, and their major subcontractors in the competitive range are:

- Bechtel Northwest Corporation with team members Safestates LLC (A company formed by Westinghouse and BNFL, Inc.), Johnson Controls Richland, Inc., CSC-Hanford, Jacobs Hanford Company, and MK Hanford Company;
- Fluor Daniel Hanford, Inc. with team members B&W Hanford Company, DE&S Hanford, Inc., Lockheed Martin Hanford Company, Numatec Hanford Corporation, and Rust Federal Services of Hanford, Inc.;
- Raytheon Hanford Incorporated with team members Boeing Information Services, Inc., CH2M Hill Federal Group, Ltd., Newport News Shipbuilding, ICF Kaiser Hanford Company, Siemens Power Corporation, and Wackenhut Services, Inc.

The DOE currently contemplates awarding a contract in the mid to later part of July 1996. When this contract becomes effective, co-operator responsibilities for the Hanford Facility RCRA Permit will require transfer from Westinghouse Hanford Company to the firm within the competitive range which is awarded the PHMC. In accordance with Hanford Facility RCRA Permit Condition I.E.14., prior written approval of this transfer will be needed from Ecology. The Permittees are formally requesting this written approval in accordance with Permit Condition I.E.14.

Reason: Permit Condition I.E.14. states that the Hanford Facility RCRA Permit may be transferred to a new co-operator in accordance with the provisions of WAC 173-303-830(2). WAC 173-303-830(2)(b) states that "changes in the ownership or operational control of a facility may be made as a Class 1 modification with prior written approval of the department in accordance with subsection (4) of this section."

**PART II CLASS 1 MODIFICATIONS:
ATTACHMENT 6
HANFORD WELL REMEDIATION AND DECOMMISSIONING PLAN,
WHC-SD-EN-AP-122, REV. 1**

Hanford Facility RCRA Permit, Attachment 6, remove and replace with the attached Attachment 6, Hanford Well Remediation and Decommissioning Plan, WHC-SD-EN-AP-122, Revision 1. A tabulation of the modifications made to Attachment 6 follows.

1. Section 2.0: Added Section 2.0, Referenced Codes, Standards, and Specifications.

Reason: This section was added to include referenced codes, standards, and specifications in this document.

NOTE: Adding Section 2.0 to this document shifted the document section numbers by 1 beginning with the old Section 2.0 (i.e., old Section 2.0 is now 3.0).

The following changes are required to the Hanford Facility RCRA Permit, Revision 2.

1. Page 4 of 91, line 21: Change "Revision 0" to "Revision 1".

Reason: Revision 1 is the current revision.

2. Page 35, line 2: Change "Sections 4.1 through 4.8.3." to "Sections 5.1 through 5.8.3".

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**PART II CLASS 1 MODIFICATIONS:
ATTACHMENT 6
HANFORD WELL REMEDIATION AND DECOMMISSIONING PLAN,
WHC-SD-EN-AP-122, REV. 1**

Replacement for Attachment 6

Hanford Well Remediation and Decommissioning Plan, WHC-SD-EN-AP-122, Rev. 1

**PART III CLASS 1 MODIFICATIONS:
616 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY
UNIT-SPECIFIC CONDITIONS**

Appendix 8A, remove and replace with the attached Appendix 8A, Training Plan, Revision 4. A tabulation of the modifications made to Appendix 8A follows.

1. Page 1, Section 1.0: Added "and implements the requirements specified in the negotiated labor union contracts" to the end of the last the sentence.

Reason: Clarification that this training plan also implements the requirements specified in the labor union contracts.

2. Page 1, Section 2.0: After "This training plan applies to all SWD personnel", added "It also specified minimum requirements for other personnel to enter and work in SWD Facilities."

Reason: Includes scope to specify minimum requirements for visitors to SWD facilities.

3. Page 1, Section 3.0: After "Job Performance Measure (JPM)" added "/Performance Demonstration (PD)".

Reason: PDs will be used at the Waste Receiving and Processing (WRAP) facility to evaluate knowledge, skills, and abilities for a specific task.

4. Page 2, Section 3.0: After "Operating Facility. An SWD operating facility that encompasses the facilities in Solid Waste Management (SWM), T Plant," added "and the Waste Receiving and Processing (WRAP 1)".

Reason: Definition of Operating Facility changed to add WRAP 1.

5. Page 2, Section 4.1: First bullet after "Providing" added "an individual training plan for". After "all employees newly assigned to SWD. The" added "training plan".

Reason: Editorial changes to clarify type of training plan.

6. Page 3, Section 4.3: Last bullet, after "Maintaining the quality of" added "operator training."

Reason: Editorial change to specify operator training.

7. Page 3, Section 4.4: Second bullet, changed sentence to read "Ensuring that operations personnel assigned to an operations job are qualified on that job or work under the direction of properly qualified personnel." Third bullet, added "Operator training" to the end of the sentence. Added a fourth bullet "Administration JPM/PD."

Reason: Editorial changes to specify that Operator Training and Administration JPM/PD are under the direction of properly qualified personnel.

8. Page 3, Section 4.5: Second bullet, added "maintenance training." to the end of the sentence.

Reason: Editorial change to specify maintenance training.

**PART III CLASS 1 MODIFICATIONS:
616 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY
UNIT-SPECIFIC CONDITIONS (cont.)**

9. Page 4, Section 4.6: First paragraph, after "The team leaders of" added "maintenance". Second bullet, after "Ensuring that maintenance personnel assigned to a maintenance" added "job"; after "are qualified on that" added "job or work under the direction of properly qualified personnel". Fourth bullet, after "Maintaining the quality of" added ""maintenance training."

Reason: Editorial changes to specify that maintenance training is under the direction of properly qualified personnel and to specify maintenance personnel.

10. Page 4, Section 4.7: Changed section number to "5.8".

Reason: Editorial change to renumber reference section.

11. Page 4, Section 4.8: Added a third bullet "Attending all training as scheduled."

Reason: Added bullet that requires employees to attend all training as scheduled.

12. Pages 4-5, Section 4.9: First paragraph, added "jobs" to the end of the first sentence. Added to the twelfth bullet "and oral board" before "examinations". Added to the fifteenth bullet "/PDs" after "JPMs". Added to the sixteenth bullet ", as a minimum" after "quarterly".

Reason: Editorial changes included the training manager evaluating written and oral board examinations; adding PD to JPM; and stating that a qualification status list will be prepared and updated quarterly as a minimum.

13. Page 6, Section 4.10: Last bullet, after "JPMs" added "/PD".

Reason: Editorial change to include PD.

14. Page 8, Section 5.3: First paragraph, end of the second sentence added "of the effective date of the revision". Second bullet, added "(as applicable)". Fourth bullet, added "Individual" before "training", and also added "reviews and updates" to the end of the sentence.

Reason: Editorial changes to clarify text.

15. Page 9-10, Section 5.4.2: First paragraph, last sentence, added "required" before "every". Last five bullets, added "WRAP 1" to beginning of bullets. Added to the sixteenth bullet "operator" at the end of the sentence.

Reason: Specified that courses apply to WRAP 1.

16. Page 10, Section 5.4.3: Added "/PDs" after the three "JPMs".

Reason: Editorial changes to include PDs.

PART III CLASS 1 MODIFICATIONS:
616 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY
UNIT-SPECIFIC CONDITIONS (cont.)

17. Page 13, Section 5.5: Added Section **"5.5 Qualification Card and Study Guide Administration for Operations**

The qualification card contains the requirements for qualification. Requirements may include facility-specific training, classroom training, individualized instruction, OJT, comprehensive written exam, and operational exam. The qualification card documents qualification status and is an auditable record of an individual's participation in the performance based training program. The elements in the card are based on job analysis and supported by a task list.

Qualification cards are instruments for tracking and proving accomplishments and provide the employee with a list of requirements and a path of progression. The minimum required level of accomplishment shall be specified in the respective checklist for all requirements. The study guide contains instructions and evaluation criteria. Knowledge requirements for the task to be performed are also found in the study guide. Qualification guides are developed and used to provide consistent OJT from trainer to trainer."

Reason: This section was added to address qualification card and study guide administration for operations.

18. Page 13, Section 5.6: Added **"5.6 Provisional Qualification**

Provisional qualification shall be established by the facility manager when the performance level required for full qualification cannot be satisfied. The provisional training program shall be approved by the training and operations managers and shall be established at the highest practical level consistent with work to be performed and existing constraints. Provisional qualification only covers tasks contained in the qualification card. Full qualification is necessary for unrestricted operation of a system or process. A provisional qualification is limited in scope and duration and will be in force only until full qualification can be achieved.

Provisional qualifications are valid for a maximum of one year."

Reason: This section was added to address provisional qualification.

19. Page 14, Section 5.8: Second paragraph, end of the first sentence, added "in their areas of expertise." Last sentence, added "or simulation" after "discussion".

Reason: The text specifies that OJT must be administered in the area of expertise, and that conditions may warrant an alternate method such as a simulation.

20. Page 14, Section 5.9: Item 1, added "operator qualification" before "positions".

Reason: Editorial change to specify operator qualification.

21. Page 15, Section 5.11: Third bullet, added "and PDs" to the end of the sentence.

Reason: Editorial change to include PDs.

**PART III CLASS 1 MODIFICATIONS:
616 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY
UNIT-SPECIFIC CONDITIONS (cont.)**

22. Pages 15-16, Section 5.12: First bullet, added "and WRAP;" after "SWM". Fifth bullet, added "WRAP 1" after bullet.

Reason: Editorial change to include WRAP 1.

23. Page 16, Section 5.13: First paragraph, added "support" after "designed to".

Reason: Editorial change to describe continuing training.

23. Page 17, Section 5.14: Added "See Section 3.20 of this manual for further amplification." to the end of the paragraph.

Reason: Added reference to Section 3.20 of this manual for a further description of the required reading program.

24. Page 17, Section 5.18: Added "or TMX" after "information (TRI)".

Reason: Added the use of a training matrix (TMX) for providing training status.

25. Page 18, Section 5.20: First bullet, added "or duty area" to the end of the sentence.

Reason: Added duty area to the possibilities for subject matter expert.

26. Page 19, Section 5.21: First bullet, added "/TMX" before "system". Fourth bullet, added "/manager" after "leader". Sixth bullet, added "as applicable" to the end of the sentence. Seventh bullet, modified text to read "The Individual Training Plan documents the training required for an employee. This record is maintained in the employee's training field file and reviewed and updated (as necessary) at least annually."

Reason: Editorial changes made to ensure consistency.

27. Page 20, Section 5.22: First paragraph, added "WRAP 1," after "The" and also after "report to". First paragraph, added "monthly" before "report to". Last paragraph, added "the qualification status of SWD personnel" to the end of the sentence.

Reason: Editorial comments to include WRAP 1, and to identify the qualification status of SWD personnel.

28. Page 20, Section 5.24: First bullet, added "/PDs" to the end of the sentence.

Reason: Editorial comments to include PDs.

29. Page 21, Section 6.0: Added "Training requirements for SWD personnel and visitors are defined in Appendix A."

Reason: Editorial change to address WRAP and visitor requirements.

**PART III CLASS 1 MODIFICATIONS:
616 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY
UNIT-SPECIFIC CONDITIONS (cont.)**

- NOTE: The reason for Appendix A modifications (Numbers 30-43) is the same. Appendix A was updated to reflect current training requirements.
30. Page A-2. Requirement C-2 added to Environmental Compliance Officer. Requirements C-2, J-1, and K-12 added to Environmental Engineer (T Plant). Requirements F-1 and F-6 added to Plant Engineer (Facility).
 31. Page A-3. Requirement J-11 added to Electrician, Instrument Technician, Nuclear Process Operator, and Pipefitter. Requirement I-4 added to Rigger. Requirement K-12 added to Engineering (Facility) Manager. Requirements F-1 and F-6 added to Maintenance Manager.
 32. Page A-4. Requirement I-2 added to Operational Readiness Review Manager. Requirement K-12 added to Operations Manager and Plant Manager/Deputy Manager. Requirement G-1 added to Operations Support. Occurrence Report Writer changed to Occurrence Report Writer/Investigator, requirement K-7 added. Requirements I-1 and I-6 added to Procedure Writer. Requirement H-3 added to Shipper.
 33. Page A-5. Added course 306750 for WRAP 1. Changed course 301310 from "required only" to "as required by needs analysis".
 34. Page A-6. Added courses 306500, 306515, 306520, and 306525 for WRAP 1.
 35. Page A-7. Added courses 306760 and 306510 for WRAP 1.
 36. Page A-8. Added courses 300745 and 450850 to category F-1 requirements. Added course 306770 for WRAP 1 to category F-2 requirements.
 37. Page A-9, category F-7. Changed Criticality Safety Representative. Oral Board to "Board Certification" to allow different methods of recertification provided for in WHC-CM-5-34. Added Board Certification for WRAP 1. Made editorial changes in category G-1. Added course numbers "170055 or 170060" in category G-4.
 38. Page A-10. Changed retraining course for course 043870 to "043875". For course 020140 added "as required by training needs analysis". Changed requalification time for course 170500. Added note 2 to category H-2.
 39. Page A-11. Updated category H-3 to reflect current requirements. Added requalification for course 080820. Added to Support Manager/Tech Staff Checklist "as required indicated by training needs analysis". Added course 306700 for WRAP 1. Changed Fork Truck Operator Training course number.
 40. Page A-12. Added WRAP 1 to course 301730 in category J-1. Added course 306550 in category J-3 for WRAP 1. Changed requalification course for 042820 to "042822".
 41. Page A-13. Changed course numbers for Maintenance Training System Overview--Instruments and Radiation Protection Fundamentals. Added courses 306535, 042370, and 042670 as required by needs analysis. Added course 306545 for WRAP 1.

**PART III CLASS 1 MODIFICATIONS:
616 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY
UNIT-SPECIFIC CONDITIONS (cont.)**

- 42. Page A-14. Changed category K-7 to reflect current Root Cause Analysis courses. Changed requalification time for course 300970 to match DOE Order 5420.21.

- 43. Page A-15. Added course 306750 for WRAP 1. Added "Description" after "Job".

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**PART III CLASS 1 MODIFICATIONS:
616 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY
UNIT-SPECIFIC CONDITIONS**

Replacement for DOE-RL-89-03, Rev. 2
Appendix 8A

WHC-CM-5-34, Training Plan, Rev. 4

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WHC-SD-EN-AP-122, Rev. 1**1.0 INTRODUCTION**

Protection of Hanford Site groundwater and assessment of it's use (or contamination) upon public safety are required by federal and state regulations and U.S. Department of Energy (DOE) policy, ("Hanford Site Groundwater Protection Management Program," DOE, 1989). Compliance with constraints applicable to the use of existing wells requires assessment as to the suitability for use and needs for rehabilitation, remediation, or decommissioning of existing groundwater wells and other boreholes potentially affecting aquifers beneath the Hanford Site. This plan provides the requirements for conducting well remediation and decommissioning activities.

1.1 BACKGROUND

Approximately 4,696 groundwater wells and vadose zone boreholes have been drilled on the Hanford Site. Approximately 3,286 wells still exist (WHC-SD-EN-DP-071, Rev 1, Hanford Well Custodians). Most of these boreholes were drilled prior to 1987 and do not conform to presently accepted construction standards intended to protect groundwater resources (Ecology, 1990). A majority of the wells installed since 1987 were constructed to current standards for well construction which mandate seals between the permanent casing and the formation to prevent potential migration of contaminated liquid.

The older wells were generally drilled by cable tool rigs using the drill and drive method. This method involves drilling while driving casing fitted with a drive shoe to prevent friction locking of the casing. Upon reaching desired depth, the casing was usually perforated to allow inflow of groundwater. Generally, no surface or annular seals were installed between the formation and casing. Wells that lack seals can allow migration of contaminants from surface to the water table. The lateral flow derived from cribs or waste tank leaks can also migrate along the casing, potentially reaching groundwater.

Contaminants and other sources have moved down the casing and into the groundwater in the past. In response to this problem, a program of surface/annular seal installation was carried out from 1976 through 1985. The program involved perforation of existing casing and installation of grouted inner liners in several hundred wells in the 200 Areas. Wells were selected based upon proximity to potential contamination sources. Documentation of this process was limited to archived drilling logs.

The majority of Hanford wells are still in use or are abandoned (Table 1). Over 500 ground water wells have gone dry due to infiltration of sediments into the screened interval or lowering of the water table.

TABLE 1. HANFORD SITE WELL STATUS

HANFORD SITE WELL STATUS	
CURRENT STATUS	TOTAL WELLS
ABANDONED	1,245
AWAITING DECOMMISSIONING	33
CLAIMED	417
DESTROYED	136
DRILLING IN-PROCESS	7
IN-USE	2,417
ORPHAN	395
PRIVATE	2
PRIVATE IN-USE	8
UNABLE TO LOCATE	3
UNKNOWN	33
TOTAL WELLS TRACKED	4,696

NOTE: The numbers in Table 1 above were tallied January 1996.

2.0 REFERENCED CODES, STANDARDS, AND SPECIFICATIONS

2.1 FEDERAL REGULATIONS AND GUIDANCE

DOE, 1989, *Hanford Site Groundwater Protection Management Program*, DOE/RL-89-12, U.S. Department of Energy, Richland, Washington.

Ecology, EPA, and DOE, 1990, *Hanford Federal Facility Agreement and Consent Order*, 2 Vols., Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington.

DOE, 1988, *General Environmental Protection Program*, DOE Order 5400.1, U.S. Department of Energy, Washington, D.C.

WHC-SD-EN-AP-122, Rev. 1

2.2 WASHINGTON ADMINISTRATIVE CODE (WAC)

Ecology, 1990a, *Minimum Standards for Construction and Maintenance of Wells*, WAC 173-160, Washington State Department of Ecology, Olympia, Washington.

Ecology, 1990b, *State Waste Discharge Permit Program*, WAC 173-216, Washington State Department of Ecology, Olympia, Washington.

2.3 WESTINGHOUSE HANFORD COMPANY

WHC, 1988a, *Management Control System*, WHC-CM-2-5, Westinghouse Hanford Company, Richland, Washington.

WHC, 1988b, *Environmental Compliance*, WHC-CM-7-5, Westinghouse Hanford Company, Richland, Washington.

WHC, 1988c, *Environmental Investigations and Site Characterization Manual*, WHC-CM-7-7, Vol. 1, Westinghouse Hanford Company, Richland, Washington.

EII-1.6, "QA Record Processing"

EII-6.6, "Resource Protection Well Characterization and Evaluation"

EII-6.10, "Abandoning/Decommissioning Groundwater Wells."

WHC, 1988d, *Vadose Zone Well Remediation Report: An Assessment Using Existing Data*, WHC-SD-EN-AP-009, Rev 0, Westinghouse Hanford Company, Richland, Washington.

WHC, 1992, *Specification for Remediation of Existing Resource Protection Wells*, WHC-S-0115, Westinghouse Hanford Company, Richland, Washington.

WHC, 1994, WHC-SD-EN-AP-161, Rev 0, *Fitness-for-Intended-Use Evaluation Recommendations for Hanford Site 600 Area Wells*.

WHC, 1995, WHC-SD-EN-DP-071, Rev 1, *Hanford Well Custodians*.

3.0 HANFORD SITE WELL USE

Several programs presently construct and/or utilize existing and newly drilled wells to provide characterization and groundwater monitoring data (DOE, 1989). Table 2 provides a current tabulation of existing wells and corresponding custodians. The programs are summarized in the following paragraphs.

3.1 GROUNDWATER SURVEILLANCE AND MONITORING PROGRAMS

3.1.1 Site-Wide Surveillance

The independent site-wide surveillance program for the Hanford Site is conducted by Pacific Northwest National Laboratory. This program monitors the effects, if any, of DOE activities at Hanford to onsite and offsite environmental and natural resources. At the present time, over 795 monitoring wells on the Hanford Site are used to assess the impact of specific facilities and to track the movement of contaminant plumes from past practice disposals. Many of the wells used in this assessment are selected from the operational monitoring networks to define site-wide contaminant distribution patterns. Both chemical and radiological constituents are examined.

3.1.2 Operational Monitoring

The operational groundwater monitoring program conducted by Westinghouse Hanford Company (WHC), which may be considered "near-field monitoring," addresses groundwater conditions in

TABLE 2. HANFORD SITE WELL USE

HANFORD SITE WELL USE	NUMBER OF WELLS
Bechtel Hanford Inc.	561
City Well	12
Kaiser Engineers Hanford	7
S.C. Benton Irrigation District/State Wildlife	2
Pacific Northwest National Laboratories	1,203
U.S. Ecology	5
Westinghouse	3,291
Other	45
TOTAL	~5,126
NOTE: The overall well total in TABLE 2 is greater than the total number of wells listed since a single well may be In-Use by multiple site contractors.	

WHC-SD-EN-AP-122, Rev. 1

and adjacent to reactor and chemical processing operations in the 100, 200, 300, 400 and 1100 areas. Operational groundwater monitoring has been carried out at the Hanford Site since the early days of the project.

3.1.3 Resource Conservation and Recovery Act (RCRA) Permit Characterization and Monitoring

The RCRA groundwater monitoring program conducted by WHC currently involves site-specific monitoring and/or well installation at 20 facilities under EPA interim status regulations. Over 250 new RCRA-compliant monitoring wells have been installed for this purpose.

3.1.4 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Monitoring and Site Characterization

Several CERCLA "groundwater operable units" have been identified at Hanford. Monitoring wells within these units are located so as to define the nature and extent of contaminant plumes.

Use of data from existing wells is generally included as a part of a specific groundwater operable unit work plan. Wells selected for this purpose often must be remediated to allow for their use. Other existing wells within the operable unit may be identified for remediation or decommissioning. The Environmental Restoration Contractor (ERC) has responsibility for wells associated with programs conducted under CERCLA.

3.1.5 Washington 216-Permitted Facilities

Permits administered by Washington Administrative Code (WAC) 173-216 (Ecology, 1990b) are required for facilities that dispose of liquid waste streams to the ground. These permits require sampling and analysis plans and groundwater impact assessments. Existing vadose and groundwater wells are used for active and inactive crib monitoring.

3.1.6 Washington Underground Storage Tank Monitoring

Groundwater monitoring is required for underground storage tanks containing petroleum products and "other regulated substances."

3.2 VADOSE ZONE CHARACTERIZATION AND MONITORING

Several hundred vadose zone wells are used by WHC to monitor subsurface waste storage and disposal sites to provide early warning of potential

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waste movement that could signal potential or future groundwater contamination problems. Many of these wells may require remediation or decommissioning to preclude groundwater resource contamination caused by well construction inadequacies (WHC, 1988d).

3.3 WATER SUPPLY WELLS

A limited number of water supply wells are present on the Hanford Site. The wells are used for water supply at isolated facilities or as emergency facility backup water supplies. These wells may require rehabilitation or remediation as determined by the users.

3.4 RESEARCH OR SPECIAL PURPOSE WELLS

Several series of research or special purpose wells have been drilled on the Hanford Site. The wells include stratigraphic and hydrologic investigation boreholes, reactor siting study boreholes and destroyed seismic test holes. Selected wells may require rehabilitation, reconfiguration or remediation.

3.5 NON-DOE CONTRACTOR WELLS

Several non-DOE contractors such as the Washington Public Power Supply System, Skagit Power, Siemens Nuclear and US Ecology have constructed characterization and facility monitoring wells, which may be selected for future remediation or decommissioning.

4.0 REGULATORY REQUIREMENTS

4.1 FEDERAL AND DOE REQUIREMENTS

Applicable DOE, other federal, and Washington state statutory requirements governing use and construction of groundwater wells are summarized in *Hanford Site Groundwater Protection Management Program* (DOE, 1989).

This document also illustrates the groundwater protection strategy required by DOE Order 5400.1 (DOE, 1988). One of the elements of this strategy is a management program for groundwater protection and remediation. This management program requires that well remediation, decommissioning and maintenance plans be developed to support operational, RCRA and CERCLA groundwater monitoring requirements.

4.2 STATE STANDARDS FOR WELL CONSTRUCTION, MAINTENANCE AND ABANDONMENT

The State of Washington Department of Ecology (Ecology) has issued standards governing groundwater well design, maintenance, construction, and abandonment in WAC 173-160 (Ecology, 1990a). These standards will be applied to the remediation and decommissioning of existing wells.

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The term *decommissioning* is used in this plan as equivalent to the properly completed and documented abandonment of a groundwater or resource protection well.

WAC 173-160 may be used to evaluate the fitness for intended use and impact upon groundwater resources of existing boreholes. Provisions exist within the standard for variances allowing alternative construction specifications upon prior application on a case-by-case basis to Ecology.

4.3 HANFORD FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

The Hanford Federal Facility Agreement and Consent Order (Ecology, EPA, and DOE, 1990), commonly known as the Tri-Party Agreement, establishes requirements for the conduct of environmental investigations on the Hanford Site. Functional design requirements for use of existing wells are developed based upon approved decisions reached under this agreement.

4.4 HANFORD FACILITY RCRA PERMIT

The Hanford Facility RCRA Permit became effective and enforceable on September 28, 1994. The Permit is written in two parts. The first part is the *Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage, and Disposal of Dangerous Waste* and is issued by the Washington State Department of Ecology (Ecology). The second part is the *Hazardous and Solid Waste Amendments Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage, and Disposal of Hazardous Waste*, and is issued by the Environmental Protection Agency (EPA). Part one specifies requirements for the inspection, maintenance, remediation, and decommissioning of wells subject to the Permit in Part II F. The Permit requires that for wells subject to the permit, permittee shall achieve full compliance with Chapter 173-160 WAC and Chapter 18.104 RCW by the year 2012 (Ecology, EPA, and DOE, 1990) Part two of the Permit specifies well construction, maintenance and decommissioning requirements in Attachment A part B.c.

4.5 OTHER STATE OR RCRA PERMITS

Permits for other RCRA or WAC 173-216 facilities may apply to this plan or the use of existing wells. Applicable requirements will be incorporated into this plan when identified.

4.6 USE OF EXISTING WELLS

The Ecology and the EPA developed a policy in response to the issue of many existing wells for RCRA and CERCLA work. This policy, "Data Quality Objectives and Remediation Criteria For RCRA and CERCLA wells at the Hanford Site June 1990," was transmitted to DOE/RL on July 16, 1990.

The policy specifies the minimum remediation requirements for existing wells proposed for use in RCRA or CERCLA monitoring programs.

4.7 ENVIRONMENTAL COMPLIANCE

The Environmental Compliance Manual (WHC, 1988b) establishes overall environmental compliance requirements for WHC. Applicable requirements are incorporated into operating procedures and specifications.

5.0 REMEDIATION AND DECOMMISSIONING ACTIVITY MANAGEMENT AND CONTROL

5.1 IDENTIFICATION OF WELL REQUIREMENTS

Wells identified to have a potential problem, e.g., do not meet WAC 173-160 construction requirements, have no use, etc., will be evaluated to determine extent of problem and mitigation required. Additionally, federal or state regulators may identify wells for evaluation. Subsequently, request(s) for remediation or decommissioning activities may be performed on boreholes or groups of boreholes.

Each well proposed for use or decommissioning is evaluated and placed into action categories based upon present and future use, degree of environmental impact, location and construction characteristics. The criteria used includes:

Potential or Present Use:

- Groundwater quality analysis;
- Water level measurements;
- Geophysical logging or monitoring;
- Water supply;
- Groundwater or soil remediation;
- Soil characteristics; and
- No known use.

Environmental Effect:

- Potential affect on groundwater resources, particularly the Columbia River, confined aquifers and groundwater not presently contaminated;
- Demonstrated contamination migration or aquifer interconnection; and
- Category list.

Location and Construction:

- Spatial location with respect to permitted facilities or RCRA site requirements;
- Well configuration;
- Well construction materials; and
- Available construction maintenance records.

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Action Categories include:

- No action required, well is acceptable for defined data quality objective(s);
- Rehabilitation to original condition required to attain data quality objective(s) and fulfill criteria for Intended Use;
- Remediation required to protect groundwater resources or to attain required data quality objective(s); and
- Decommissioning required, the well cannot be remediated or has no documented present or future use.

Wells within each Action Category are evaluated and assigned a priority status. The wells are scheduled for Use, Remediation or Abandonment.

5.2 DESIGN REVIEW AND APPROVAL

The mechanism for approval under the Tri-Party Agreement (Ecology, EPA, and DOE, 1990) of proposed use or decommissioning of groundwater wells requires identification of data quality objectives by user groups, selection of existing well data points, compilation of well construction and sampling data, and preparation of a schematic proposal for remediation or abandonment of specific wells.

This schematic proposal addresses present conditional, recommended actions and suggested well completion geometry on a case-by-case basis. It is then transmitted to representatives of all other concerned Hanford Site users for review and approval.

When strict compliance with the requirements of WAC 173-160 is not possible for the proposal, application may be made to Ecology for approval of a variance prior to the work being done.

The proposal can be presented to DOE, EPA and/or Ecology during regularly scheduled overview meetings for comment and concurrence. This review and concurrence is considered equivalent to the well construction variance process allowed in WAC 173-160-020. Approved meeting minutes can act as the implementing approval document.

In some cases concurrence cannot be provided during meetings. Approval and additional guidance, if required, is provided by specific correspondence between Ecology, EPA, and DOE. This correspondence may be identified as an action item during overview meetings.

Past correspondence and historical data relating to design requirements are a part of existing functional design requirements. This information is used to generate schematic drawings and fitness-for-intended-use evaluations for wells under consideration for use, remediation, or abandonment.

5.3 CONTRACTOR INTERFACE/RESPONSIBILITIES

Integration and coordination of Hanford Site well remediation and decommissioning activities is necessary to fulfill the requirements of the Hanford Site Groundwater Management Program (DOE, 1989).

WHC is functionally responsible for management, field direction and documentation of groundwater well remediation and decommissioning activities on the Hanford Site. The responsible function also coordinates required design review and approval for use of existing groundwater wells.

Figure 1 provides a process chart for completion of identified requirements for groundwater well remediation or decommissioning.

5.4 CONDUCT OF OPERATIONS

All fitness-for-use assessments and field operations are planned and conducted according to approved procedures and specifications. Governing procedures are Environmental Investigations Instructions (EIIs) contained in WHC-CM-7-7 (WHC, 1988c). Specific EIIs are cited within this plan as applicable.

5.4.1 Fitness-For-Use

Assessment of fitness-for-intended use of identified wells is done according to EII 6.6. This EII also provides the mechanism for obtaining review and approval of proposed schematic remediation or decommissioning methods. This review and approval process involves all potential users and involved groups. A Supporting Document (SD), "Fitness-for-Intended-Use Evaluation Recommendations for Hanford Site 600 Area Wells," WHC-SD-EN-AP-161, Rev 0., (WHC, 1994) has been prepared that formalizes the Fitness-For-Use documentation and incorporates the approval process.

5.4.2 Remediation Specifications

A generic remediation specification, "Specification for Remediation of Existing Resource Protection Wells," has been prepared for groundwater wells requiring remediation (WHC, 1992). Remediation field activities are controlled by EII 8.3.

5.4.3 Decommissioning Requirements

Decommissioning requirements are contained in WAC 173-160, EII 6.10 and borehole specific instructions implemented by the field operations crews.

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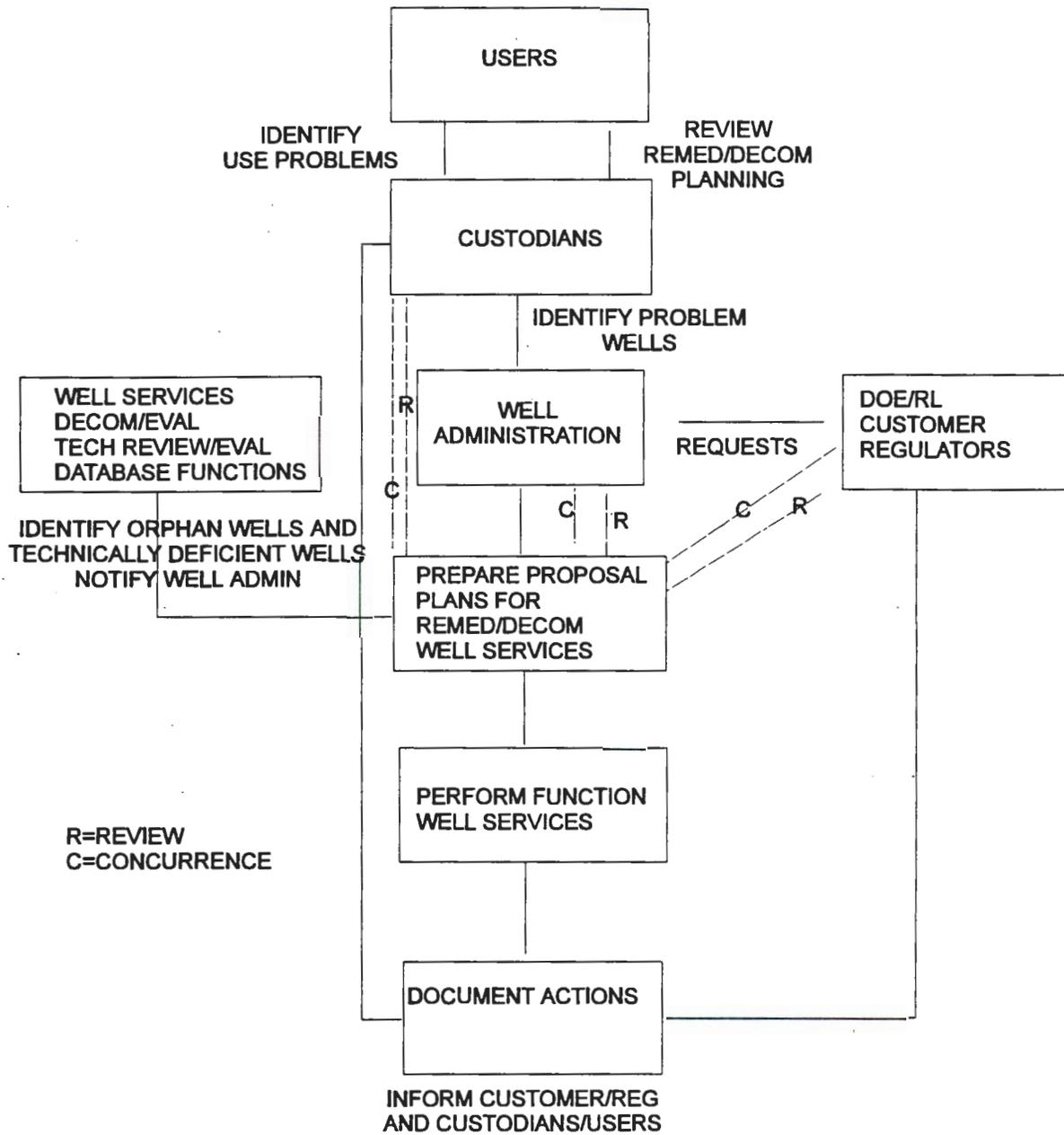


Figure 1. Process Chart for Remediation/Decommissioning of Hanford Site Wells

5.5 EFFLUENT MONITORING AND WASTE MANAGEMENT

Specifications and applicable EIIs, in section 4.0 and 5.0 of WHC 1988c, address the effluent monitoring and waste management requirements of WHC-CM-7-5 (WHC, 1988b) and provide for control and disposition of fluids and waste produced during maintenance, remediation or decommissioning of wells.

5.6 HEALTH AND SAFETY

Health and safety requirements are addressed in specifications and instructions for all maintenance, remediation and decommissioning activities. These requirements may include special training, field safety, radiological safety and hazardous waste safety. Excavation permits and/or a Job Hazard Analysis are obtained for work as needed.

5.7 PLANNING AND BUDGETING

Work within this activity is controlled under the WHC Management Control System as defined in WHC-CM-2-5 (WHC, 1988a).

5.7.1 Work Breakdown Structure

Work within this activity is a part of the WHC product oriented Work Breakdown Structure. An element of the applicable work breakdown structure is a specific Cost Account Authorization annually developed for well rehabilitation, remediation and decommissioning. The cost account authorization contains scope of work, budget, identified milestones and a Level III schedule for attainment of the milestones.

5.7.2 Cost Account Management

The Cost Account Manager prepares a Cost Account Plan containing the detailed time-phased planning, monitoring, and controlling of the cost account work. The cost account plan is then input into the Financial Data System for tracking to assure that planned work is completed on schedule and within budget.

5.7.3 Change Control

Changes to schedule, budget or baseline are as specified in WHC-CM-2-5.

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5.8 REPORTING**5.8.1 WAC 173-160 Reporting**

WAC 173-160-050 requires that every well contractor, within thirty days after completion (or alteration) of a well, submit a complete record on the construction or alteration of the well to Ecology.

Well contractors must notify Ecology of their intent to construct, re-construct, or abandon a well at least seventy-two hours before starting work by completion of a well construction notification card (Start card).

Abandonment procedures for resource protection wells must be recorded on a form provided by Ecology. Well abandonment must be recorded and reported to Ecology within thirty days of abandonment.

5.8.2 Activity Documentation and Hanford Site Well Database

Well remediation and decommissioning field activities are documented as required by EII 1.6 and other applicable EIIs. Summaries of reviewed field activity reports are entered into a Hanford Site Well Database system maintained by WHC's Well Services.

5.8.3 Summary Reports

Summary activity reports will be provided to representatives of well use organizations. Site contractors and DOE/RL generally meet on a monthly basis to discuss well issues.

5.8.4 Annual Report

An annual report summarizing remediation and decommissioning activities will be prepared and issued for public clearance within 90 days after the end of each fiscal year.

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SOLID WASTE DISPOSAL
OPERATIONS ADMINISTRATION

Issue Date

April 1, 1996

Organization

PSS/Solid Waste
Disposal

TITLE:

Approved by

TRAINING PLAN

Original signed byW. H. Hamilton, Jr., Director
Solid Waste Disposal

1.0 PURPOSE

This training plan implements the training requirements for Solid Waste Disposal (SWD) personnel. It represents a graded systematic approach to training requirements of pertinent federal, state and/or contractor regulations that apply to SWD personnel. This training plan also represents the training plan required by WAC-173-303 (2) and 29 CFR 1910.120 (e)(1)(i) for hazardous waste treatment, storage, and/or disposal (TSD) facilities and implements the requirements specified in the negotiated labor union contracts.

2.0 SCOPE

This training plan applies to all SWD personnel. It also specified minimum requirements for other personnel to enter and work in SWD Facilities. It specifies the training requirements and responsibilities for new and continuing employees, to ensure personnel are qualified to perform their job assignments. This training plan describes training program implementation, functions, and responsibilities.

3.0 DEFINITIONS

The following definitions apply to SWD.

Exception. A formal waiver granted to exempt an individual from a required training course.

Extension. Delay granted to meet initial training requirements or delay beyond the last date of the retrain zone granted to meet retraining requirements.

Facility. Equipment, systems, buildings, and other property units that facilitate or make an activity possible. Also used to refer to a TSD unit.

Function Manager. Any manager reporting directly to the division director.

Team Leader. Any first-line leader of a group.

Job Performance Measure (JPM)/Performance Demonstration (PD). A tool designed to evaluate related knowledge, skills, and abilities for a specific task or subtask.

Maintenance Manager. An operating facility level 4 manager of maintenance first-line managers and bargaining unit personnel.

Plant/Facility Manager. Manager of an operating facility.

Operating Facility. An SWD operating facility that encompasses the facilities in Solid Waste Management (SWM), T Plant, and the Waste Receiving and Processing (WRAP 1) facility.

Operations Manager. An operating facility manager of operations team leaders and bargaining unit personnel.

4.0 RESPONSIBILITIES

This section outlines the responsibilities and organizational structure of SWD and operations training as related to SWD Operations.

4.1 Managers/Team Leaders

All SWD managers/team leaders are responsible for the following (as applicable):

- Providing an individual training plan for all employees newly assigned to SWD. The training plan will define actual training required by job assignment and will be placed in the employee's field training file.
- Ensuring that employees assigned to them receive required initial training, continuing training, and retraining as needed to be qualified to perform their assigned duties (Appendix A)
- Maintaining up-to-date personnel training records for the employees assigned to them, in accordance with Section 5.3 of this training plan. Managers will be able to demonstrate that their employees are qualified to perform their assigned tasks, in accordance with this training plan
- Functioning as the qualifying official for all assigned personnel except as noted in Sections 4.2 and 4.3.
- Determining the specific qualification goals for each individual, consistent with this training plan
- Providing development and review support for training materials; recommending material(s) for approval
- Supervising and/or conducting on-the-job training (OJT), and JPM/PD of assigned personnel
- Recommending training exceptions or extensions
- Participating in oral examinations as required
- Serving as a member of the Training Review Board, which affects assigned personnel

TRAINING PLAN

- Ensuring that emergency drills performed are safe and efficient
- Assisting the drill coordinator in preparing and implementing drill exercises.

4.2 Plant/Facility Manager

The plant/facility manager is responsible for the following:

- Ensuring that the training program and qualification programs are administered, improved, maintained, and are consistent with and applicable to facility configuration.
- Functioning as the operating facility qualifying official by acting as signature authority for all qualified operations managers/team leaders.
- Approving exceptions or extensions in individual training plans.

4.3 Operations Manager

The operations manager is responsible for the following functions for operations personnel:

- Acting as the approval authority for all operations training
- Maintaining the quality of operator training.

4.4 Operations Team Leaders

The team leaders of operations bargaining unit personnel assigned to SWM, WRAP 1, and T Plant are responsible for the following:

- Ensuring a sufficient number of trained and qualified personnel are available to safely meet the operations schedules of the SWD facilities
- Ensuring that operations personnel assigned to an operations job are qualified on that job or work under the direction of properly qualified personnel.
- Ensuring the training progress of assigned personnel and that all training requirements are met.
- Maintaining the quality of Operator training.
- Administration JPM/PD.

4.5 Maintenance Managers

All SWD maintenance managers are responsible for the following (as applicable to maintenance personnel):

- Acting as the approval authority for all maintenance training
- Maintaining the quality of maintenance training.

4.6 Maintenance Team Leader

The team leaders of maintenance bargaining unit personnel assigned to SWM, WRAP 1, and T Plant are responsible for the following:

- Ensuring a sufficient number of trained and qualified personnel are available to safely meet the maintenance schedules of the SWD facilities
- Ensuring that maintenance personnel assigned to a maintenance job are qualified on that job or work under the direction of properly qualified personnel
- Ensuring the training progress of assigned personnel and that all training requirements are met
- Maintaining the quality of maintenance training

4.7 OJT Instructors

Qualified operators and maintenance craft personnel may be trained as OJT instructors. The OJT process is described in Section 5.8.

The OJT instructors are responsible for the following:

- Providing supervised hands-on training in the work environment to accomplish performance objectives required for completion and evaluation of the training tasks
- Ensuring that the trainee has satisfactory knowledge of and competence in skills requirements, as defined on the qualification card and in the study guide
- Signing and dating the OJT qualification card, indicating that the acceptable performance levels were met as required by plant operating procedures, study guide references, and the appropriate OJT qualification cards.

4.8 Employees

All SWD employees and support personnel are responsible for the following:

- Working with their managers to define appropriate training
- Completing necessary training to gain/maintain qualifications.
- Attending all training as scheduled

4.9 Training Manager/Team Leader

The training manager/team leader establishes, conducts, and administers the training program for the SWD facility managers to ensure personnel are trained to meet their assigned jobs. In addition to the minimum training requirements listed in Appendix A, the training team leader will also qualify as a operations manager/team leader at the discretion of the plant manager.

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The training managers/team leaders provide classroom instruction and training in accordance with the requirements established in this training plan. As defined in this training plan, training team leaders support final written and oral examinations and OJT documentation. SWD facility managers are responsible for OJT and qualification.

The training managers/team leaders are responsible for the following:

- Developing and conducting training
- Assigning dedicated instructors to the facilities to meet the needs of SWD facility personnel
- Assisting managers/team leaders in implementing training requirements for their personnel
- Reviewing training requirements annually (at a minimum) for adequacy of need and adherence to regulations
- Reporting overdue training to SWD managers
- Processing extensions/exceptions to training requirements
- Assisting managers in scheduling training classes
- Evaluating training program effectiveness
- Instructing training classes
- Indoctrinating and training assigned instructors
- Developing and updating training texts and lesson plans
- Preparing, administering, and evaluating written and oral board examinations
- Preparing and updating study guides and OJT qualification cards
- Preparing and administering requalification lectures and examinations
- Preparing and administering JPMs/PDs
- Preparing and updating quarterly, as a minimum, a list of the qualification status for all personnel assigned. This list must include job title and name of the employee. The list, this training plan, and all personnel training files (Section 5.3) comprise the training plan required by WAC-173-303-330(2) and are subject to regulator inspection/audit.

4.10 Instructor

The instructor is a primary contact between the SWD personnel and the training organization. The instructor should understand the processes and equipment pertinent to facility operations. The instructor coordinates training activities for SWD with the respective operations managers. Instructors may be assigned responsibility for the following:

- Developing and maintaining study guides and OJT qualification cards
- Developing, maintaining, and administering written examinations
- Developing and conducting training on both new and existing systems or equipment
- Maintaining and coordinating the development and revision of training materials
- Providing (or assisting in conducting) designated training
- Providing or supporting special training programs
- Providing and updating facility-specific training schedules
- Providing periodic status reports, and assisting with designated training reports
- Advising management of changing training needs, scope, and contractual requirements
- Developing JPMs/PD for use in conducting operational examinations.

5.0 GENERAL ADMINISTRATIVE REQUIREMENTS

Administrative training requirements for all SWD personnel are specified in the sections that follow. The SWD operations training program requirements are specified in Section 6.0.

5.1 Training Identification

The position terminology used in Appendix A represents the standard nomenclature used on the Hanford Site. For the purpose of compliance with WAC-173-303-330(2), the following position equivalencies are established:

WAC 173-303 Position Categories	Appendix A Positions Included in WAC 173-303 Categories
All Employees	Hanford Site personnel, visitors, and subcontractors not included in one of the following categories who enter a TSD unit where regulated or permitted dangerous waste management activities are conducted in accordance with the WAC 173-303.
General Worker	Hanford Site personnel, visitors, and subcontractors with waste management duties such as waste generation, container packaging, conducting surveys, loading containers, or providing direct oversight to waste handling activities. Examples include the following positions (Appendix A): <ul style="list-style-type: none"> • Maintenance personnel • Contractor crafts • Radiological control technicians • Truck drivers • Process crane operators • Engineer.
Advanced General Worker	Hanford Site personnel whose duties exceed that of General Workers as follows: <ul style="list-style-type: none"> • Nuclear process operators (NPO) qualified in the T Plant complex • NPOs qualified in any of the SWM facilities • NPOs qualified in the WRAP facility.
General Managers	Hanford Site personnel who hold positions or responsibilities in the following areas: <ul style="list-style-type: none"> • Personnel who act as the Emergency Coordinator and/or alternate • T Plant, Solid Waste, or WRAP operations managers, operations person-in-charge (PIC), or operations team leaders • T Plant, Solid Waste, or WRAP building emergency directors • T Plant, Solid Waste, or WRAP environmental compliance officers • Engineer/scientist/hazardous material specialist/team leader in the Generator and Waste Acceptance Services group • Engineers who affect the process/safety systems of a SWD facility (may include cognizant, systems, test, and/or maintenance engineers).
General Shipper	Hanford Site personnel who prepare and sign waste movement documentation for onsite and offsite shipments.

Appendix A provides training classes applicable to each position.

5.2 Minimum Position Requirements

Minimum position requirements are established for all positions. For bargaining unit, nonexempt, and nonmanagement exempt positions, the requirements are specified in standard position descriptions located in each individual's training field file. For management and team leaders the requirements are specified in individual position descriptions, subject to the minimum requirements specified in Appendix A, Table 1. For exceptions to these standard requirements where an individual does not meet the literal education requirements, consideration may be given to the collective experience of the person with two years of experience equal to one year of formal education. Individuals who do not meet the experience requirements for a position may be assigned to that position, providing the overall operating organization is considered balanced and strong. Exceptions are approved on a case-by-case basis by the SWD manager on the appropriate employment documentation.

Table 1. Minimum Position Requirements for Selected Positions.

Position	Education degree	Related experience
Managers	Bachelor	4 Years
Team Leaders	High School	3 Years
Operators	High School	--

All personnel assigned to SWD on or before August 12, 1992 are considered to meet the requirements of Section 5.2 for their current and future positions within SWD.

5.3 All Employees

New employees must meet the training requirements described in Appendix A within six months of assignment to SWD. In addition, as new requirements are identified and indicated in this training plan, SWD personnel will comply the new requirements within six months of the effective date of the revision. All SWD managers will prepare a training field file for all their employees. The training field file includes the following:

- Employee profile system worksheet (not required for bargaining unit personnel)
- Health evaluation (as applicable)
- Completed Hanford Site training
- Individual training plan and annual reviews and updates
- Qualifications achieved (both company and outside sources)
- Correspondence related to exceptions or extensions to training
- Position description.

In addition to the items listed in Sections 5.0 through 5.2, all operations managers, operations team leaders, and operators complete the 200 Area Operations fundamental training programs. Exceptions to this requirement may be authorized by the SWD director based on formal education background and technical experience.

The operations managers and operations team leaders will demonstrate a satisfactory level of knowledge in all areas in which their employees must be qualified by meeting the requirements identified in Appendix A. The operations managers, operations team leaders, and criticality safety representatives also will demonstrate a satisfactory knowledge level to an oral examination board before final qualification.

5.4 Examinations, Tests, and Quizzes

Where specified on the course outline, training courses provide a method to evaluate whether an employee is ready for either a new or continuing assignment and how much required training has been completed. In these cases, the employee must demonstrate a satisfactory knowledge of all required subjects covered in the training program. This demonstration may include written, oral, and operational examinations as appropriate to the position, experience, and educational level of the employee. Quizzes may be used for intermediate evaluation of the effectiveness of on-going training.

5.4.1 Examination Development

Examinations cover subjects in which personnel are expected to be proficient and emphasize those subjects covered by the continuing training program. Requalification and continuing training program examinations cover materials in accordance with training requirements.

The goal of an examination is to produce a fair and consistent evaluation of an employee's readiness for either a new or continuing assignment to specific tasks and/or completion of required training.

Examinations test the depth of knowledge defined in the related study guides and practical knowledge defined on the OJT qualification cards for the position.

5.4.2 Administration of Written Examinations for SWD Operations

Written examinations are given as part of the qualification or requalification process for personnel in job positions requiring formal qualification. Written examinations for requalifications are required every two years for the following qualifications:

- Managers plant specifics (SWM only)
- T Plant surveillance
- T Plant waste handler
- T Plant Canyon decontamination
- 2706-T decontamination
- Central Waste Complex operations
- Transuranic (TRU) Storage and Assay Facility (TRUSAF)

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- Nonradioactive Dangerous Waste Storage Facility
- Low-Level Burial Grounds
- Radioactive Mixed Waste Land Disposal Facility
- TRU Retrieval program
- Solid Waste verification sampling
- WRAP 1 Shipping and receiving operator
- WRAP 1 Process glovebox operator
- WRAP 1 Restricted waste glovebox operator
- WRAP 1 Control room operator
- WRAP 1 Operations manager/operations team leaders.

5.4.3 Administration of JPMs/PDs for SWD Operations

Completion of JPMs/PDs is the final step in achieving job qualification for SWD operators. The JPMs/PDs are administered by qualified independent evaluators who are either operations team leaders or training personnel, but not the immediate team leader of the employee being evaluated. The examination consists of a minimum of two, and not more than 15, JPMs/PDs sufficient to evaluate an individual's knowledge, skills, and abilities in all important areas of job performance. Independent evaluators act as the final approval authority for the qualification process.

5.4.4 Examination Control

The training team leaders approve qualification examinations. Completed examinations are retained as part of completed qualification records. Examinations are controlled to prevent compromise of examination material. The examinations are stored in a locked storage container or in password protected computer files except as required for administering to a student, review by the oral examination board, for audit purposes, or update by examination author. Approved locations for storage of written examination material are designated by the training organization.

5.4.5 Oral Examinations

The final step of a qualification process for operations managers/team leaders is an oral examination. This evaluation assesses the candidate's knowledge of operations, systems, and interactions to determine the candidate's readiness for qualification and for assuming the responsibilities of a qualified SWD manager/team leader or Criticality Safety Representative.

5.4.5.1 Oral Examination Board. The Oral Examination Board consists of a minimum of four members. These members evaluate and score the candidate's responses. The board is chosen from the following (or their designees):

- Operations support manager (as applicable)
- Facility operations manager
- Operations engineering manager
- Nuclear, safety, and/or environmental manager
- Applicable SWD training team leader
- Radiological control manager
- Plant or deputy plant manager.

The plant manager or deputy plant manager acts as the board's chairperson and performs the following:

- Ensures all prerequisites are met before commencing the oral board
- Provides a schedule for the candidate and board members with the time and location at least five working days before the board meeting
- Ensures the board is conducted in a professional manner and that the established rules and guidelines are followed
- Ensures the candidate is aware of the following:
 - The general conduct, scope, and length of the examination, and other pertinent information
 - The candidate's right to seek clarification of the examiner's questions when necessary
- Provides the candidate with the results of the board.

5.4.5.2 Oral Examination Categories. The oral examination consists of documented questions from (but not limited to) the following specific areas, if applicable to the facility or position:

- Design, control, operating, safety/safety analysis report limitations, and facility permit requirements
- Means by which facility design, operations, or procedures may be changed
- Radioactive and nonradioactive hazards within the facilities or plant
- Handling, controlling, and disposing of radioactive and nonradioactive hazardous materials and effluents
- Criticality safety requirements and procedures
- Industrial and fire safety, security, conduct of operations, and emergency systems, including reporting procedures
- Mechanical, electrical, and chemical theory
- Facility operating characteristics
- Job Control System (JCS).

5.4.5.3 Documentation and Evaluation of Oral Examinations. Each oral examination is documented on an oral examination form identified in the examination procedures and supplied to each examiner. The examiner documents only the comments that are relevant to determining a pass or fail conclusion.

The candidate and selected training personnel may see the comments. Each examiner evaluates the candidate's responses to every question that the examiner feels able to properly assess.

The following system is used for grading the examination.

- S--(SAT). Excellent to good knowledge and understanding of the subject. The candidate has demonstrated sufficient knowledge to safely carry out the responsibilities of the position.
- M--(Marginal). Fair working knowledge and understanding of the subject. The candidate may have difficulty answering questions in depth and relating the interaction between various systems.
- U--(UNSAT). Poor working knowledge and understanding of the subject. The candidate is unable to provide an answer, or the answers are incorrect or incomplete. The candidate shows obvious unfamiliarity with the subject, such as unusually hesitant answers or lack of understanding.

All grades are awarded on the basis of the candidate's verbal responses during the oral examination. The use of marginal evaluations should be minimized. Areas where the candidate's knowledge is marginal should be explored further in an attempt to determine if an "S" or "U" rating is warranted. If the marginal evaluation stands, supporting notes should be included, and the examiners objectively judge whether the candidate should pass or fail the examination. The candidate may be allowed to take additional training at a later date and retake an unsatisfactory or marginal portion of the Oral Board Examination, at the board's discretion.

The forms pertaining to the examination should be used only as an aid to the examiners in conducting the examination and as a means of documenting the basis for the examiner's pass/fail determination. The pass/fail determination is based on an audit of the candidate's level of knowledge, and (as such) all applicable areas should be explored in varying degrees of depth.

Each examiner must recommend approval or disapproval of the qualification based on the results of the entire examination. To successfully pass the oral examination, the candidate must receive a passing grade from each of the examiners.

5.4.6 Grading Standards--Written Examinations

For bargaining unit personnel, the satisfactory performance level for any objectively graded written examination is 70 percent. If the average grade is less than 70 percent, the entire examination must be retaken following remedial training, as specified in Section 5.11 and in accordance with the agreement between Westinghouse Hanford Company (WHC) and Hanford Atomic Metal Trades Council (HAMTC).

For exempt personnel, the satisfactory performance level for any objectively graded written examination is 80 percent. If the average grade is less than 80 percent, the entire examination must be retaken following remedial training, as specified in Section 5.11.

5.5 Qualification Card and Study Guide Administration for Operations

The qualification card contains the requirements for qualification. Requirements may include facility-specific training, classroom training, individualized instruction, OJT, comprehensive written exam, and operational exam. The qualification card documents qualification status and is an auditable record of an individual's participation in the performance based training program. The elements in the card are based on job analysis and supported by a task list.

Qualification cards are instruments for tracking and proving accomplishments and provide the employee with a list of requirements and a path of progression. The minimum required level of accomplishment shall be specified in the respective checklist for all requirements.

The study guide contains instructions and evaluation criteria. Knowledge requirements for the task to be performed are also found in the study guide. Qualification guides are developed and used to provide consistent OJT from trainer to trainer.

5.6 Provisional Qualification

Provisional qualification shall be established by the facility manager when the performance level required for full qualification cannot be satisfied. The provisional training program shall be approved by the training and operations managers and shall be established at the highest practical level consistent with work to be performed and existing constraints. Provisional qualification only covers tasks contained in the qualification card. Full qualification is necessary for unrestricted operation of a system or process. A provisional qualification is limited in scope and duration and will be in force only until full qualification can be achieved.

Provisional qualifications are valid for a maximum of one year.

5.7 OJT Qualification Guides for Maintenance Personnel

Maintenance OJT Instructors use OJT qualification guides to implement the OJT training process. A job-task analysis is used to determine which tasks are covered in the OJT qualification guides. The OJT qualification card documents the OJT process.

The OJT qualification card is an auditable record of an individual's participation in the performance-based training program. The OJT qualification card contains specific tasks identified by the job-task analysis for discussion, performance, and/or simulation. Upon completion of the training and evaluation process, the OJT instructor will sign off each task item.

The OJT qualification guide contains specific knowledge and skill requirements, specific technical material and references to enable the student to complete the identified task. The OJT qualification guide is a study reference document, training guidance instrument, and evaluation criteria for trainers, instructors, evaluators, and managers.

Section 1 of the OJT qualification guide identifies the specific task and the supporting skills and knowledge. Section 2 contains the technical material that addresses each knowledge factor. Section 3 contains the hands-on training where the student practices the specific skill factors. Section 4 contains the JPM and the qualification card.

OJT qualification guides should be reviewed by a subject matter expert who was not directly involved in their development and approved before use.

5.8 OJT

All OJT in SWD facilities is performance based. The method of conducting OJT, the required level of accomplishment, and performance test criteria are determined during the training material development process. The training and performance testing a trainee receives will qualify that individual to perform the task. Study guides and OJT qualification cards for individual qualification are developed to document training and to provide guidance for the instructor and the trainee.

The OJT instructors, subject matter experts, selected operators, maintenance crafts personnel, managers, and operations team leaders will be qualified to conduct OJT and performance tests in their areas of expertise. The primary method used to conduct OJT is the demonstration-performance method. When conditions warrant, alternate methods (such as discussion or simulation) may be used.

5.9 Proficiency Maintenance

It is necessary to maintain proficiency in facility operations and maintenance. This requires periodic hands-on experience to supplement the formal qualifications for facilities and/or watch stations. The following requirements will be met to ensure that proficiency is maintained:

1. An operator who fills one of the operator qualification positions must have completed a full shift in the same position within the last six months.
2. An operator who does not complete a full shift in a position in any six-month period has not maintained proficiency. This can be rectified by reviewing the facility/position status with the responsible manager and documenting satisfactory review in the individual's training file.
3. Operations managers, operations team leaders, and plant/facility managers will maintain proficiency through their normal duties.

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4. Proficiency of SWD maintenance personnel will be maintained by performance of assigned tasks or through equivalent training.

5.10 Failure Criteria

Failure to complete a component of a training program, failure to meet specified criteria during initial and continuing training, and/or a demonstrated deficiency requires initiating a remedial training program. An employee who has failed all or part of a training program must be assigned duties that do not require the failed training or be supervised by a trained individual. Remedial training is conducted in accordance with Section 5.11.

5.11 Remedial Training

Remedial training is an individually prepared program transmitted to the individual by internal memo from their immediate manager along with a remedial/retraining plan (the plan need not be more than one page in length). The program gives the individual experiencing difficulty written direction for actions to achieve required results. The remedial training program evaluates the effectiveness of the remedial training (i.e., for a classroom examination failure, a re-examination; for operational difficulties, an operational evaluation).

Remedial training programs are assigned as necessary, but must be assigned for the following:

- Failed classroom examinations
- Failed written qualification examinations
- Failed JPMs and PDs
- Failed oral board examinations
- Failed biennial written examinations.

The remedial training should be designed to ensure that the individual acquires additional knowledge. A two-week minimum waiting period is required before an employee may retake a failed written qualification examination. Remedial training may be recommended by the individual's immediate manager, instructors, or training evaluators.

Remedial training must be approved by the appropriate line manager. The completed copy of the remedial/retraining plan and its results will be filed with the individual's training field file.

5.12 Training Review Board

The employee's immediate manager or team leader determines and recommends to the Training Review Board the requirements for the following:

- Individual requalification for previously qualified personnel returning to work following extended absences (greater than six months for SWM and WRAP 1; and three months for T Plant) and/or corrective action

- Individual requalification for previously qualified personnel demonstrating poor performance in the training program or facility operations.

The Training Review Board consists of the following:

- Individual's function manager
- Individual's facility/field operations manager or operations team leader
- WRAP 1, SWM, or T Plant training team leader or Operations Support team leader (when applicable)
- A bargaining unit member as applicable.

A copy of approved corrective actions and applicable milestones must be filed in the individual's field training file. Documentation of completion of corrective actions is submitted with completion of the associated training.

The Training Review Board approves a recommended course of action.

5.13 Continuing Training Program

Continuing training is designed to support and enhance the proficiency of operations personnel.

Continuing training provides qualification-oriented training and refresher training in selected areas.

The program, at the option of the training manager/team leader, may include:

- Attendance at selected continuing training lectures
- Completion of required reading
- Completion of selected OJT tasks
- Completion of all courses to maintain job qualifications
- Drills in the facility for response to abnormal or accident situations.

The training managers/team leaders document the completion of continuing lectures and OJT (beyond that required for qualification).

Continuing training lectures are scheduled and conducted as required.

If employees miss a lecture, their team leader/manager or another team leader/manager will cover the equivalent material and document the lectures in their training file.

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Training is specific to each operating facility. The SWD training team leaders, maintenance team leaders, and/or Operations Support team leaders compile the agenda for the lectures based on information received from operations, engineering, maintenance, and/or training needs. The lecture topics could include the following:

- Changes and upgrades to qualification packages
- Procedural changes
- Process/structural changes
- Industry events
- Unusual occurrences
- Lessons learned
- Demonstrated knowledge deficiencies
- Upgrading existing knowledge levels.

5.14 Required Reading

Important information relative to job assignments must be made available to appropriate personnel. The SWD uses required reading as a formal system to ensure that appropriate individuals receive important information. See Section 3.20 of this manual for further amplification.

5.15 Drill Program Description

Drills are conducted for operations personnel to develop and maintain proficiency in responding to abnormal or accident conditions. Teamwork skills are integrated into situations where technical knowledge and team skills are necessary. The objective is to establish, maintain, and enhance the performance of the individual and the team. Drill scenarios should identify and correct performance deficiencies related to abnormal and/or emergency situations.

5.16 Training Material Development

Training material is developed using a systematic approach (e.g., performance-based training) to ensure that all personnel are qualified to perform job requirements.

The affected group management, operations training, and facility management approve training materials. In addition, training material may be reviewed by other support organizations, as determined by SWD management.

5.17 Training Material Maintenance

Training material will be reviewed for accuracy as changes to state or federal regulations, plant or facility design or processes change, or changes in plant operating procedures take place. Training material will be reviewed and updated at intervals not to exceed two years.

5.18 Training Status Records

Training records are maintained by using the training records information (TRI) or TMX system and with the updates to employee training field file.

The following sections discuss exceptions and extensions.

5.19.1 Exceptions

Exceptions to initial and continuing training are considered on a case-by-case basis and are initiated by individual's immediate manager or team leader. The employee's name, the subject for which the exception is requested, and justification for the exception are sent to a plant/facility manager, or manager equal in authority for approval.

Under certain conditions, employees may be granted equivalency or be exempted or waived from specific qualification prerequisites or requirements.

Any deviation from the normal qualification requirements or qualification path must be documented on the individual's training field file. This documentation states what specific variation is requested and provides a short justification for the variation. No employee can be exempted from written or oral examination requirements associated with a qualification.

5.19.2 Extensions

Extensions of qualifications may be granted on a case-by-case basis by the plant/facility manager or manager equal in authority. Requests for extensions are prepared and processed by the applicable training team leader for approval by the applicable manager. An individual's manager or team leader will initiate the request for extension and should include, as a minimum, the following:

- The length of extension
- An explanation of the circumstances that prevented the person from completing the requirements
- A description of the operational schedule and/or commitment that necessitated the extension.

NOTE: Extensions of qualification for nuclear operators, operations team leaders, and managers usually will not be granted.

Anyone whose qualification has lapsed will be designated as a trainee in that area. Trainees will perform work as an extension of a qualified person only if the trainees are physically controllable by the qualified person.

5.20 Instructor Subject Matter Experts

The subject matter experts may be part-time instructors under the following conditions.

- The subject matter expert is qualified (or previously qualified) and/or experienced in a particular subject, topic, system or duty area.

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- The technical competence of the subject matter expert is verified by virtue of the individual's job assignment and overall command of the subject matter.
- An subject matter expert may be used to team-teach with the primary instructor.

5.21 Training Records

The SWD processes training records as follows.

- The original records are sent to and recorded on the TRI/TMX system.
- Field copies of records are maintained in the employee's training file. Contents of these files are listed in Section 5.3.
- A current training record is maintained by the individual's manager or team leader for the duration of employment in the facility, plus a three-year audit period. Personnel training records may accompany personnel transferred within the same company.
- The responsible team leader/manager reviews individual training records annually to ensure that tasks assigned and training received are appropriate for their employees.
- Letters or statements indicating the acceptance or denial of a request for exception to training and the basis for the justification are maintained in the employee's training field file.
- As required by Section 5.3, the employee profile system worksheet, recent health evaluation, position description, and statement of qualifications achieved also are maintained in the training field file as applicable.

The following forms can be obtained from applicable SWD training sections and are used to support and document the SWD training programs.

- The Individual Training Plan documents the training required for an employee. This record is maintained in the employee's training field file and reviewed and updated (as necessary) at least annually.
- The OJT qualification cards are used during the qualification process to record the completion of the required task items. The OJT qualification cards provide a permanent record of the qualification for each qualification package.
- The Oral Examination form records both the questions asked and key points from answers given during an Oral Board Examination. The Oral Examination form provides a permanent record to qualify the individual for qualification.

5.22 Qualified Personnel Status Report

The WRAP 1, SWM, and T Plant Training organizations issue a monthly report to WRAP 1, Solid Waste, and T Plant facility managers that provides the current training status for each of their employees. The managers are responsible for scheduling their employees for the applicable training.

NOTE: Managers are encouraged to use their training sections to assist them in scheduling and tracking training.

The PC&A manager compiles and issues a monthly report to the manager, SWD, identifying the qualification status of SWD personnel.

5.23 Facility Modifications, Procedure Changes, and Operating Experiences

Training on selected facility modifications, procedure changes, and operating experience is conducted during the continuing training program. When warranted by the significance of the information, the manager, team leader, or other appropriate personnel conduct a brief personnel lecture on the subject, incorporate the information into the support training schedule, or include the information in required reading.

5.24 Qualification Restrictions and Durations

Qualifications are granted only if the following conditions are met.

- All qualification requirements are completed (written and/or oral examinations, OJT requirements, and JPMs/PDs).
- Other specified requirements are completed (e.g., medical examinations).
- Immediate manager gives approval.
- For operations qualifications, an independent training evaluator verifies satisfactory completion of tasks that result in qualification.

5.25 Requalification Process

All employees will complete all training programs and/or courses in accordance with the established guidelines for the individual program/course. Requalification for specific job assignments is specified in Appendix A.

Written and/or oral examinations and proficiency demonstrations are used (to the extent possible) for requalification if the facility is not operated frequently enough to meet normal proficiency requirements.

If an employee has not received the job-specific training or retraining required for the work assignment within the required time, the employee will be relieved from the assignment until the required training or retraining is complete. The employee will, however, be allowed to work in the assignment under the direction of a qualified employee.

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Training requirements for SWD personnel and visitors are defined in Appendix A.

7.0 DESIGNATED REVIEWING ORGANIZATIONS

This procedure does not require review outside of the SWD Division.

8.0 REFERENCES

WHC-IP-0867, *Operation Training Materials Development Guidelines.*

9.0 BIBLIOGRAPHY

DOE 1324.2A, "Records Disposition."

DOE 5480.1B, "Environment, Safety, and Health Program for DOE Operations."

WAC-173-303-330, "Personnel Training."

40 CFR 264.16, "Personnel Training."

WHC-CM-1-3, *Management Requirements and Procedures.*

WHC-CM-3-5, *Document Control and Records Management Manual.*

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APPENDIX A TRAINING AND QUALIFICATION REQUIREMENTS

The training addressed in this appendix is presented in three tables. Table 1 identifies training requirements by job position and lists course requirements by categories. In most cases job position titles are generic. Managers are responsible for determining which job position category is applicable for employees and the subsequent required training. Categories A through E identify RCRA required training and is subject to review and/or audit by the Washington State Department of Ecology. Categories F through K identify non-RCRA required training and, in regard to an Ecology audit, is intended as information only.

Tables 2 and 3 list courses by category. In Table 2, the categories correspond to the position categories addressed in paragraph 5.1 of this training plan. Table 3 categories organize courses into general groupings. Managers must determine the specific course requirements for employees based on both general requirements and requirements unique to an employee's job assignment. Some courses are annotated with a qualifier such as "As required by job assignment" or "For Solid Waste only." In these cases where an employee's assignment does not warrant certain courses, or the employee works for a facility other than the target audience of a course; the course is not considered required training. A listing of additional training (classified as enhanced training) to improve on an employee's job skills, but not otherwise required, can be obtained from the facility training groups.

To determine required training for an employee, refer to Table 1 and find a corresponding job position. Adjacent to the job position is a series of X's and numbers. The X's indicate all training in that category is required unless otherwise noted (e.g., "As required by job assignment," "For Solid Waste only," etc.). The numbers in place of X's under the main categories indicate the requirement to receive training only in the identified sections of that category. As an example, under Category C, a trainer is required only to take courses under C-1. A nuclear process operator is required to take all courses in Category C indicated in Table 1. For employees falling into more than job one position or assignment, the requirements of both job position categories apply.

A dotted line separating courses distinguishes initial and retraining courses. For example, course number 02006A is retrained in 000001. The initial course is listed first, followed by a dotted line then the requalification course. A dashed line between courses that are interrelated and normally have a required prerequisite course or courses.

Table 1. Training Matrix.

Job Position	RCRA (Table 2)					NON-RCRA (Table 3)					
	A	B	C	D	E	F	G	H	I	J	K
SUPPORT PERSONNEL											
ACTIVITY ADMINISTRATOR/ENGINEER	X						3				
CLERK	X						3				
COMPUTER TECHNICIAN	X						3				
SECRETARY	X						3				
ENGINEERING WRITER	X						3				1
RECORDS SPECIALIST	X						3				
PROJECT CONTROL ANALYST	X						3				
PLANNER/SCHEDULER	X						3				
STAFF ASSISTANT	X						3				
SYSTEMS ANALYST	X						3				
WORK CONTROL PERSONNEL											
JOB CONTROL ADMINISTRATOR	X						1+3			1	1
JOB CONTROL CLERK	X						3			1	1
PLANNER/SCHEDULER	X						1+3			1	1
MATERIAL CONTROL SPECIALIST	X						3			1	1
MATERIAL COORDINATOR	X						3			1	1
TECHNICAL SUPPORT PERSONNEL											
ENGINEER/SCIENTIST (Facility)	X	1		2		1+6	1+3		1+6	1	1+12
ENGINEER/SCIENTIST (NON-Facility)	X			2		1+6	3				1
ENGINEER/SCIENTIST (Environmental)	X	X		2	1	1+6	3	2			
ENGINEER TECHNICIAN	X	X					3		1		
ENVIRONMENTAL COMPLIANCE OFFICER	X	X	2	2	1	1	3	2	1		1+4+7
ENVIRONMENTAL ENGINEER (T Plant)	X	X	2	2	1	1+6	1+3	2	1	1	1+12
HEALTH PHYSICIST	X	1				1	3				1
HAZARDOUS MATERIAL SPECIALIST	X	X		2		1+6	3	2			1
INDUSTRIAL SAFETY ENGINEER	X	1				1	3				
PLANT ENGINEER (Facility)	X	1				1+6	1+3			1	1

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Table 1. Training Matrix.

Job Position	RCRA (Table 2)					NON-RCRA (Table 3)					
	A	B	C	D	E	F	G	H	I	J	K
PLANT ENGINEER (NON-Facility)	X						3				
PLANT ENGINEER (Environmental)	X	X		2	1	1+6	3	2			
QUALITY ASSURANCE ENGINEER	X	1				1	3				
RADIOLOGICAL CONTROL ANALYST (RCT)	X	1				1	3				1
RCT NUCLEAR ENGINEER	X	1				1	3				1
TRAINING INSTRUCTOR	X	1	1			1+6	1+3	2			1+2+8
TRAINING EVALUATOR	X	1	2	2+4	1	1+6	1+3+9	2	1+4		1+2+8+10
CRAFT PERSONNEL											
ELECTRICIAN	X	1				1+5	1+3+4+8+9			2+5 +11	1
INSTRUMENT TECHNICIAN	X	1				1+5	1+3+8+9			9 +11	1
INSULATOR	X	1				1+5	1+3+5+9				1
MILLWRIGHT	X	1				1+5	1+3+4+9			10 +11	1
NUCLEAR PROCESS OPERATOR	X	1	X			1+4	1+3+4+9	1	3+4+5+6	1+5	1+2
PAINTER	X	1				1+5	1+3+4+9			5	1
PIPEFITTER	X	1				1+5	1+3+4+9			5+6 +11	1
PROCESS CRANE OPERATOR	X	1				1+5	1+3+9			8	1
RADIOLOGICAL CONTROL TECHNICIAN	X	1				2+5	1+3+4+9				1
RIGGER	X	1				1+5	1+3+4+9			7	1
SIGN PAINTER	X	1				1+5	1+3+9			5	1
TOOL CRIB ATTENDANT	X						3+9				1
TRUCK DRIVER	X	1				1+5	1+3+9	1	3	4	1
WELDER	X	1				1+5	1+3+4+9				1
MANAGEMENT PERSONNEL											
DIVISION DIRECTOR	X			1			3				1
MANAGERS/DEPUTY MANAGERS											
ENGINEERING (Facility)	X	1		2		1+6	1+2+3		1+6	1	1+3+6+7 +12
ENVIRONMENTAL ENGINEERING	X	X	X	2	1	1+6	1+2+3+9	2	1+6	1	1+3+4+6+7
MAINTENANCE	X	1		2		1+6	1+2+3		1+6	1	1+3+6+10

Table 1. Training Matrix.

Job Position	RCRA (Table 2)					NON-RCRA (Table 3)					
	A	B	C	D	E	F	G	H	I	J	K
OPERATIONAL READINESS REVIEW	X	1				1	1+2+3+9		1+2		1+3+6
OPERATIONS	X	1	X	2+3+4	1	1+6	1+2+3+9	2	1+2+4+6	1	1+2+3+6+7 +10+12
OPERATIONS SUPPORT & WORK CONTROL	X	1		2			1+2+3		1+6	1	1+3+6+10
OTHER (NON-FACILITY MGRS)	X						3		1		
PLANT MGR/DEPUTY MGR	X	1		1		1+6	1+2+3		1+6		1+3+6+12
RADIOLOGICAL CONTROL	X	1		2		1+3+5	2+3+9		1+2+6		1+3
TRAINING	X	1	X	2		1	1+2+3		1+6		1+2+3
TEAM LEADERS											
GENERATOR & WASTE SERVICES	X	X				1+6	2+3	2	1		1
MAINTENANCE	X	1					1+2+3+6		1+6	1	1+3+6+10
OPERATIONS	X	1	X	2+3+4	1	1+6	1+2+3+9	2	1+2+4+6	1	1+2+3+6+10
OPERATIONS SUPPORT	X	1					1+2+3+6		1+6		1+3+6+10
RADIOLOGICAL CONTROL	X	1		2		1+3+5	2+3+9		1+2+6		1+3
TRAINING	X	1	X	2		1	1+2+3		1+6		1+2+3
WORK CONTROL	X	1					1+2+3+6		1+6	1	1+3+6
SPECIAL: GROUPS/MEMBERS/COMMITTEES/ASSIGNMENTS											
ASBESTOS ABATEMENT MANAGEMENT PLANNER	X	1					3				9
BUILDING WARDEN	X					1+6	1+3				5
CORRECTIVE ACTION EVALUATION GROUP	X						3				6+7
CRITICALITY SAFETY REPRESENTATIVE	X	1				1+6+7	3				
MANAGER-ON-CALL	X	1		2+3							10
OCCURRENCE REPORT WRITER/INVESTIGATOR	X	1				1	3				7+10+11
PERSON-IN-CHARGE (PIC)	X	1				1+6	1+3+6+8+9		6	1+3	
PLANT REVIEW COMMITTEE	X						3				12
PROCEDURE WRITER	X	X					3		1+6		
SHIPPER	X	1	2	2	X	1+6	3	2+3			
UNREVIEWED SAFETY QUESTION EVALUATOR	X										12
OTHER PERSONNEL											
SWD VISITOR/VENDER	REFER TO PAGE 17 OF THIS APPENDIX FOR REQUIRED TRAINING										

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Table 2. RCRA Required Training.

COURSE NUMBER	CATEGORY A GENERAL WORKER TRAINING	RETRAINING (months)
02006A	Hanford Site Orientation (HSO) The following are part of HSO: (Required for new employee only.) 000087 Initial Security Briefing (DOE Order 5631.1B & DOE Order 5631.2C) *02006B Hazardous Communication and Waste Orientation (Washington Administrative Code [WAC] 173-303 & 29 Code of Federal Regulation [CFR] 1910.1200)	12 - 000001
000001	Hanford General Employee Training (HGET) The following are part of HGET: 000100 "Escort Training" *02006B "Hazard Communications Orientation" (WAC 173-303) 000165 "Asbestos General Employee Training" 020108 "Non-radioactive Worker Safety Orientation" 003000 "Lock & Tag-General" 020196 "Noise Control Requalification" 020005 "Criticality Safety - Nonfissile Material Handler" 120196 "Computer Security Awareness" 02006F "Fire Extinguisher Safety Orientation" 162236 "QA Program Overview"	12 - 000001
* Denotes the RCRA portion of these courses.		
300700 SWM ONLY	Solid Waste Operations Facility Orientation	24 - 300700
301740 SWM ONLY	Solid Waste Management Hazard Communication The following are part of 301740: Facility Emergency and Hazard Information Checklist - courses, 03E044 - LLBG, 03E045 - 616, 03E046 - 224T, & 03E047 - CWC; buildings not included in this list will use the "Emergency Response Information Board."	12 - 301740
450700 T PLANT ONLY	Facility Orientation - T Plant	24 - 450700
03E048 T PLANT ONLY	Facility Emergency and Hazard Information Checklist - T Plant Complex Buildings not included will use the "Emergency Response Information Board"	12 - 03E048
306750 WRAP 1 ONLY	WRAP 1 Facility Orientation (including Haz. Comm. and BEP)	12 - 306750
CATEGORY B GENERAL WORKER TRAINING		
B-1		
031110	24-Hour RCRA TSD Hazardous Waste The following are part of course 031110: 020032 "Scott SKAPAK-MSA PAPER Requalification" (29 CFR 1910.34)(As required by training needs analysis) 02006G "Hazard Communication and Waste Management Awareness" (29 CFR 1910.1200, WAC 173-303)(ONE TIME ONLY) 020194 "Noise Control" (ONE TIME ONLY)	12 - 032020
032020	Hazardous Waste Refresher Training The following are part of course 032020: 020030 - SCBA Annual is given with this class if requested. (29 CFR 1910.134)(As required by training needs analysis) 020032 - Scott SKAPAK is given with this course if requested. (29 CFR 1910.134)(As required by training needs analysis) Note: Courses taken at the HAMMER facility are considered equivalent to courses 031310 and 032020 above.	12 - 032020
031310	Hazardous Waste Operations Mgr/Supervisor - 8 hr (For 24 hr or 40 hr Hazardous Waste Training - Operations managers/team leaders only)	N/A
020041	Mask Fit (as required by training needs analysis.)	12 - 020041
020044	Mask Written Examination (as required by training needs analysis.)	12 - 020044
B-2		
301310	Solid Waste Facility Recordkeeping (Required for SWITS data entry personnel only)(and as required by needs analysis.)	N/A

Table 2. RCRA Required Training.

B-3		
301315	Solid Waste Acceptance Requirements (As required by training needs analysis)	N/A
COURSE NUMBER	CATEGORY C ADVANCED GENERAL WORKER TRAINING	RETRAINING (months)
C-1		
300010 300020 300025 300030 300040 300050 300080 SWM ONLY	SW TRU Waste Retrieval OQ Central Waste Complex OQ Mixed Waste Land Disposal Facility OQ TRUSAF - Operator Qualification Low-Level Burial Grounds Facility Non-Radioactive Dangerous Waste Storage Facility OQ Solid Waste Verification Sampling *For operators only. Operators must qualify in their assigned duties unless escorted by a qualified operator. Operators are not required to maintain all qualifications. SWO operations managers/team leaders will take course 300590, manager qualification. The training team leader, trainers, and training evaluator may take either applicable operator qualifications or course 300590.	24 - 3000XX
450010 450020 450030 450040 T PLANT ONLY	T Plant Canyon Decontamination OQ T Plant Surveillance OQ 2706-T Decon OQ Waste Handler OQ *Operators must qualify in their assigned duties unless escorted by a qualified operator. Operators are not required to maintain all qualifications. T Plant operations managers/team leaders, training team leader, and trainers must take all operator qualifications.	24 - 4500XX
306500 306515 306520 306525 WRAP 1 ONLY	WRAP 1 Restricted Waste Management Glovebox Qualification WRAP 1 Shipping and Receiving Qualification WRAP 1 Control Room Qualification WRAP 1 Process Glovebox Qualification The above are for operators. Operators are required to maintain three qualifications. Operations Manager/Operations Team Leaders take course 306510.	24 - 3065XX
C-2		
035100	Core Waste Management Training - Initial (For Operators, Operations Team leaders only)(WAC 173-303, 40 CFR, & 49 CFR)	12 - 035110
035110	Core Waste Management Training - Refresher	12 - 035110
450600 T PLANT ONLY	EP/APC - Operator (Operators only - Managers/Team Leaders will take course 450660, Cat. D-4)	12 - 450600
CATEGORY D GENERAL MANAGER TRAINING		
D-1		
035040	Environmental Regulations at Hanford	N/A
D-2		
035050	Environmental Compliance at Hanford (As required by training needs analysis)(may take 035040 as equivalent training)	N/A
D-3		
02028B	Building Emergency Director Training Required for Building Directors and operations managers/team leaders	12 - 037510
037510	BED/BW Requalification Training	12 - 037510

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Table 2. RCRA Required Training.

D-4		
300060 SWM ONLY	Managers Oral Boards Qualification	N/A
306760 WRAP 1 ONLY	WRAP 1 Operations Manager/Team Lead Oral Boards	N/A
300590 SWM ONLY	SWO Managers Qualification	24 - 300590
306510 WRAP 1 ONLY	WRAP 1 Operations Manager/Operations Team Leader Qualification	24 - 306510
450660 T PLANT ONLY	EP/APC Manager	12 - 450660
***** T PLANT ONLY	T Plant Manager Oral Board	N/A
COURSE NUMBER	CATEGORY E GENERAL SHIPPER	RETRAINING (months)
<p>NOTE: See Table 3, Category H for non-RCRA courses required for shipper certification. Personnel classified as General Workers, Advanced General Workers, or General Managers may also be required to take some or all of the following courses at the discretion of management.</p>		
E-1		
035020	Facility Waste Sampling & Analysis (As required by training needs analysis) (WAS-173-303, 40 CFR & 49 CFR)	N/A
035010	Waste Designation Support (WAC 173-303) (For information only, does not allow participant to sign manifest.)	12 - 035010
If course 035012 is taken, this requirement is met.		
E-2		
020159	Dept. of Transportation Hazardous Waste Shipment Certification (Required for those who sign manifests) (Must have taken course 020064 first.) FOR HAZARDOUS WASTE SHIPPERS. (49 CFR 172)	24 - 020159
035012	Waste Designation Certification Test <u>only</u> .	12 - 035012
035120	Waste Management Administrative - Initial (For employees who sign manifest).	12 - 035130
035130	Waste Management - Administrative - Refresher	12 - 035130

Table 3. Non-RCRA Required Training.

COURSE NUMBER	CATEGORY F RADIATION WORKER TRAINING	RETRAINING (months)
F-1		
10 CFR Part 835.902 Radiological Workers		
020001	Radiological Worker II Training - Initial (As required by training needs analysis)	24 - 020003
020003	Radiological Worker II Retraining Requalification	24 - 020003
020702	Rad Worker I/II Refresher	24 - 020702
This course is taken the off year of 020003		
020900	ALARA For Technical Support Personnel (For facility technical support staff only and as required by training needs analysis)	N/A
300745	Personal Self-Survey - Solid Waste (Completion of 034520 and 024530 satisfy requirement for 300745)(Required for all SWM operators and operations team leaders only)	24 - 300745
450850	Personal Self-Survey - T-Plant (Completion of 034520 and 024530 satisfy requirement for 450850)(Required for all T-Plant operators and operations team leaders only)	24 - 450850
F-2		
10 CFR Part 835.903 Radiological Control Technicians		
022004	RCT Academic Training Program	24 - 022002
022002	RCT Recertification Program	24 - 022002
022120	RCT Continuing Training Cycle #1	Continuous
022122	RCT Continuing Training Cycle #2	Continuous
022124	RCT Continuing Training Cycle #3	Continuous
022126	RCT Continuing Training Cycle #4	Continuous
This training is continuous; once the employee finishes this course, the employee repeats the cycle. NOTE: Technician-specific training is conducted in accordance with the applicable requirements, and ESQ/HSF monitors certification.		
023105 SWM ONLY	SWO Facility OJT - RCT	24 - 023105
451500 T PLANT ONLY	RCT OJT T Plant	24 - 451500
306770 WRAP 1 ONLY	WRAP 1 Facility OJT - RCT	24 - 306770
F-3		
(RCT Level 4 managers & team leaders only)		
023001	1st Line Manager Oral Boards	N/A
024000	1st Line Manager Fundamentals	N/A
F-4		
DOE 5480.24		
020010	Criticality Safety Training - Fissionable Material Handlers	24 - 020110
020110	Criticality Safety - Fissionable Material Handlers Retraining	24 - 020110
020301	Criticality Safety Job Safety Orientation - Fissile (JSO)	24 - 020301
F-5		

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Table 3. Non-RCRA Required Training.

COURSE NUMBER	CATEGORY F RADIATION WORKER TRAINING (continued)	RETRAINING (months)
020020 T PLANT ONLY	Criticality Safety Training - For Support Personnel	12 - 020020
F-6		
020012	Criticality Safety Training Managers & Engineers (As required by training needs analysis)	24 - 020013
020013	Criticality Safety Manager/Engineer Retraining	24 - 020013
020302	Criticality Safety Job Specific Orientation- Manager/Engineer (JSO)	24 - 020302
F-7		
***** SWM ONLY	Board Certification - Criticality Safety Representative	24 - *****
***** T PLANT ONLY	Board Certification - Criticality Safety Representative	24 - *****
***** WRAP 1 ONLY	Board Certification - Criticality Safety Representative	24 - *****
CATEGORY G 29 CFR (OSHA) & WAC 296-65 (WISHA) TRAINING		
G-1		
003035 SWM AND WRAP 1 ONLY	Lock & Tag - Authorized Worker (As required by training needs analysis)(29 CFR 1910.147)(For WRAP 1 003035 or 050800 meet this requirement.)	12 - 003036
003036 SWM AND WRAP 1 ONLY	Lock & Tag Refresher (29 CFR 1910.147)	12 - 003036
450800 T PLANT ONLY	Lock and Tag T Plant (29 CFR 1910.147)(As required by training needs analysis)	12 - 450800
G-2		
004005	Managers' Safety Training	12 - 004005
G-3		
020107	Behavior Based Safety Training (Fed Reg Vol 54 No. 16)	N/A
G-4		
02006L	Asbestos Control (29 CFR 1910.1001) (As required by training needs analysis) (Qualifies support personnel to enter an Asbestos-Regulated Area for support purposes only. Not needed if the 170055 or 170060 course has been taken)	12 - 02006L
G-5		
170055	QTRC - Certified Asbestos Worker (WAC 296-65) (As required by training needs analysis)	12 - 170057
170057 INSULATOR ONLY	QTRC - Certified Asbestos Worker Requalification (WAC 296-65)	12 - 170057
G-6		
170060	Asbestos Supervisor - QTRC (Cert)	12 - 170062
170062	Asbestos Requal - QTRC (As required by training needs analysis)	12 - 170062
(Required for any manager, team leader, or PIC who supervises any support personnel who enter an Asbestos-Regulated Area) (WAC 296-65)		

Table 3. Non-RCRA Required Training.

COURSE NUMBER	CATEGORY G (continued) 29 CFR (OSHA) & WAC 296-65 (WISHA) TRAINING	RETRAINING (months)
G-7 (TRU Retrieval Program Only)		
031220	40-Hour Hazardous Waste Operations Training (For waste remediation sites; ie. the TRU Retrieval program. Training is required according to job assignment).	12 - 032020 (See Cat. B)
031230	16-Hour Hazardous Waste Operations Upgrade Training (Upgrade from 24 hour to 40 hour training) (As required)	N/A
031410	1-Day Waste Site Field Experience (course taken addition to 24-hour RCRA TSD Hazardous Waste, course 031110, if working on a non-TSD project)	
031420	3-Day Waste Site Field Experience (For anyone who takes the 40-Hour training and who goes into an waste site area unescorted.)	N/A
G-8		
044480	Medium Risk Electrical Safety (For instrument specialists. Dependent on job assignment, may be required to take course 043870 instead.)	36 - 044480
043870	High Risk Electrical Safety (Required for electricians and electrical team leaders/managers.)	36 - 043875
G-9		
020130	Confined Space Entry (As required by training needs analysis)(29 CFR 1910.146)	24 - 020130
020140	Fall Protection & Retrieval Devices (For anyone who uses fall protection equipment and as required by training needs analysis. A HEHF medical clearance is required for entry to this course.)(29 CFR 1910.66)	N/A
170500	Medic First Aid(As required by training needs analysis)(29 CFR 1910.120)	24 - 170500
170648	Bloodborne Pathogens - SPT (29 CFR 1910.1030) (Required for RCTs only)	12 - 170651
170651	Bloodborne Pathogens Update (29 CFR 1910.1030)	12 - 170651
170656	QTRC - Hands on Fire Extinguisher Training (29 CFR 1910.157) (As required by training needs analysis.)	12 - 170656
CATEGORY H 49 CFR (DOT) TRAINING		
H-1		
020075	Hazardous Material General Awareness Training	24 - 020075
020076	Hazardous Material Driver's Training (Truck Drivers only)	24 - 020076
050410	Vehicle Inspection/Load Tie-Down Securement for Driver's Training (Truck Drivers only)	N/A
H-2		
<p>NOTE: (1) The following courses are the non-RCRA requirements for becoming a certified hazardous material shipper (also see Category E for RCRA requirements). Non-shipper personnel may be required to take some or all of the following courses as specified in their training needs analysis. (2) Retraining for the below listed courses is not required if courses specified in H-3 are completed.</p>		
020059	Basic RAM Shipment Awareness - Module 3 (Must have taken course 020064 first) FOR RADIOACTIVE OR MIXED WASTE SHIPPERS.	24 - 020059
020064	Basic Dept of Trans Haz Mat Regs Awareness - Module 1 (Prerequisite for 020059, 020069, & 020159)	24 - 020064
020068	Basic Hazardous Material Training - Module 2	24 - 020068
COURSE NUMBER	CATEGORY H 49 CFR (DOT) TRAINING (continued)	RETRAINING (months)

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Table 3. Non-RCRA Required Training.

H-3		
020069	Radioactive material Shipment Certification - Advanced Module 3 (Required for those who sign RSRs)	24 - 020069
020159	Hazardous Waste Shipper Certification - Advanced Module 2 (Required for those who sign HMSRs)	24 - 020159
CATEGORY I OPERATIONS TRAINING		
I-1		
080820	Safe/Drug-Free Workplace (Managers only)	24 - 080820
080910	Equal Employment Opportunity (Managers only)	N/A
080969	New Manager Orientation/EEO 2000 (Managers only)	N/A
REQUIRED FOR NEW MANAGERS/TEAM LEADERS HIRED AFTER 07/93.		
***** SWM Only	Support Manager/Tech Staff Checklist (As required by training needs analysis) (Not required for operations Managers/Team Leaders)	N/A
451420 T Plant only	Manager/Tech Staff Checklist	12 - 451420
306700 WRAP 1 only	WRAP 1 Technical Staff Training	N/A
I-2		
081050	Managing People, The Art of Leadership	N/A
061950	Manager Fundamentals Training	N/A
I-3		
044470	Fork Truck Operator Training (As required by training needs analysis)	36 - 041890
041890	Fork Truck Operator Requalification	36 - 041890
I-4		
040784	Basic Crane & Rigging (As required by training needs analysis)	36 - 040788
040788	Basic Crane & Rigging Requalification	36 - 040788
I-5		
065911	NPO Mathematics	N/A
065912	NPO Chemistry	N/A
065914	NPO Electrical Theory	N/A
065915	NPO Instrumentation	N/A
065917	NPO Mechanical Fundamentals	N/A
I-6		
451410 T PLANT ONLY	T Plant Operational Safety Requirements	N/A

Table 3. Non-RCRA Required Training.

COURSE NUMBER	CATEGORY J MAINTENANCE TRAINING	RETRAINING (months)
J-1		
301730 SWM AND WRAP 1 ONLY	Solid Waste Job-Specific JCS (For WRAP 1 301730 or 450500 satisfy this requirement) Required for Solid Waste employees working in operations, engineering, or work control areas directly in support of a facility. (May have taken course 010108 in place of this course)	N/A
450500 T PLANT ONLY	T Plant Work Control/JCS Required for T Plant employees working in operations, engineering, or work control areas directly in support of a facility. (May have taken course 010108 in place of this course)	N/A
J-2		
035065	PCB Awareness (Required for electricians only) (40 CFR 761)	N/A
459001	Maintenance Training System Overview (As required by training needs analysis)	N/A
452202	T Plant Circuit Breakers (As required by training needs analysis)	N/A
452210	T Plant Hoists and Cranes (Electrical) (As required by training needs analysis)	N/A
452217	Maintenance of 2706-T Ventilation and Exhaust Equipment (As required by training needs analysis)	N/A
452225	Maintenance of 271-T Air Supply Fan (As required by training needs analysis)	N/A
J-3		
300550	PIC Training--for Solid Waste employees	N/A
450550	PIC Training--for T Plant employees	N/A
306550	WRAP 1 PIC Training--for WRAP 1 employees	N/A
J-4		
020089	Defensive Driving Course	24 - 020089
042730	Flagging and Traffic Control	36 - 042730
043220	Load Securing for Transport	36 - 043220
J-5		
042720	Aerial Lifts (As required by training needs analysis)	36 - 043920
043920	Aerial Lifts Operator Requalification	36 - 043920
J-6		
042590	Pressure Relief Valves	24 - 042590
459001	Maintenance Training System Overview (As required by training needs analysis)	N/A
J-7		
042820	Wire Rope/Rigging Hardware Inspection	36 - 042822
J-8		
042830	Overhead Crane Mechanical	36 - 042830

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Table 3. Non-RCRA Required Training.

COURSE NUMBER	CATEGORY J MAINTENANCE TRAINING (continued)	RETRAINING (months)
J-9		
459001	Maintenance Training System Overview - Instrument (As required by training needs analysis)	N/A
451800	Radiation Detection Fundamentals (As required by training needs analysis)	N/A
451801	Eberline Alpha Continuous Air Monitor (As required by training needs analysis)	N/A
451802	Eberline models AMS-3 and AMS-3A beta air monitor (As required by training needs analysis)	N/A
451803	Eberline PCM-1B portal monitors (As required by training needs analysis)	N/A
451804	Eberline PM-6A portal monitors (As required by training needs analysis)	N/A
451805	Eberline RMS-II Radiation Monitor (As required by training needs analysis)	N/A
451808	Honeywell UDC 5000 Differential Temperature Controller (As required by training needs analysis)	N/A
451810	Kurz Flow Controller (As required by training needs analysis)	N/A
451816	Chino Programmable Recorder (As required by training needs analysis)	N/A
451819	Kent 100 Programmable Recorder (As required by training needs analysis)	N/A
306535	EG&G Alpha/Beta Stack (As required by training needs analysis)	24 - 306535
042370	Eberline Beta Cam (As required by training needs analysis)	24 - 042370
042670	Eberline PCM-1B (As required by training needs analysis)	24 - 042670
J-10		
459001	Maintenance Training System Overview - Millwright (As required by training needs analysis)	N/A
452101	Pump Theory and Maintenance (As required by training needs analysis)	N/A
J-11		
306545	WRAP 1 Hydraulic Safety (As required by training needs analysis)	24 - 306545
COURSE NUMBER	CATEGORY K OTHER EMPLOYEE TRAINING	RETRAINING (months)
K-1		
000079	Comprehensive Security Briefing Required for badge levels 2 or 3	12 - 000080
000080	Security Refresher Briefing Required for badge levels 2 or 3	12 - 000080
305100	Solid Waste Disposal Operations Administration Conduct of Operations (Facility personnel only)	N/A
K-2		
000390	On-the-Job Training Workshop (As required by training needs analysis)	N/A

Table 3. Non-RCRA Required Training.

000397	On-the-Job Evaluator Trainer (As required by training needs analysis)	N/A
K-3		
001000	Manager Conduct of Operations (DOE Order 5480.19) May have taken course number 001002 in place of this class	N/A
K-4		
02006J	EPCRA 312 REPORTING REQUIREMENTS (Previously called SARA) (40 CFR 370)	12 - 02006J
02006K	EPCRA 313 TOXIC CHEMICAL RELEASE REPORTING (Previously called SARA) (40 CFR 372)	12 - 02006K
K-5		
037500	Building Warden Training	12 - 037510
K-6		
170002	QTRC - Risk Evaluation	N/A
K-7		
170015	Root Cause Basics	N/A
170026*	Root Cause Techniques Workshop (As required by training needs analysis)(Required for employees who perform root cause analysis for PPG values ≥ 25 . Optional for Corrective Action Evaluation Group)	N/A
170027*	Root Cause Mini-Mort Workshop (As required by training needs analysis)	N/A
K-8		
170011	Train the Trainer (or equivalent level of training)	N/A
K-9		
170600	AHERA Management Planner	12 - 170600
170610	AHERA Building Inspector Required for engineers who manage asbestos within SWD facilities (40 CFR Part 61, WAC 296-62-077)	12 - 170610
K-10		
170640	Introduction to Occurrence Reporting (DOE Order 5000.3B)	N/A
K-11		
170642	Occurrence Report Writing (DOE Order 5000.3B)	N/A
K-12		
300970	SWD USQ Evaluator (DOE Order 5480.21) (As required by training needs analysis)	24 - 300970

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COURSE NUMBER	SWD VISITOR OR VENDOR	RETRAINING (months)
<u>Print Name</u>		<u>Date</u>
RADIATION TRAINING		
• 020001	Radiation Worker Training - Initial <small>In accordance with: 10 CFR Part 835.902</small>	24 - 020003
RCRA TRAINING		
000090	Visitor/vendor Training	N/A
• 031110	24-Hour RCRA TSD Hazardous Waste <small>In accordance with: 29 CFR 1910.120</small>	12 - 032020
FACILITY ORIENTATION		
300700 <small>SWM ONLY</small>	Solid Waste Operations Facility Orientation	24 - 300700
450700 <small>T PLANT ONLY</small>	Facility Orientation - T Plant	24 - 450700
306750 <small>WRAP 1 ONLY</small>	WRAP 1 Facility Orientation (including Haz. Comm. and BEP)	12 - 306750
• As required by job		
Job Description:		
<p>All hazardous waste and radiation worker training has been met or equivalent classes have been taken, if working in facility area containing radioactive or hazardous materials. Facility orientation will be taken unless escorted by an employee certified in this area.</p> <p><u>Visitor or Vender Signature</u></p> <p>NOTE: This data needs to be turned into Facility Operations Manager before initiating work.</p> <p><u>Operations Manager</u></p> <p><u>ECO (T Plant only)</u></p>		

NOTE: Craft-specific training is conducted in accordance with the applicable requirements of parent company. However, crane operators must be certified to the requirements of the Hanford Hoisting and Rigging Manual and have evidence of their certification.

**PART III CLASS 1 MODIFICATIONS:
305-B STORAGE FACILITY UNIT-SPECIFIC CONDITIONS**

1. Page 4-17, Section 4.1.1.6.11: Remove and replace with attached page.

- A. Page 4-17, lines 26-30: Delete "For additional segregation capability, there are 6 small chemical storage cabinets and four 5 ft. x 5 ft. stainless steel "container pans" with 12 in. sides." Replace with "For additional segregation capability, there are seven small chemical storage cabinets and four 62"x 62"x 5.5" (157cm x 157cm x 14cm) stainless steel "container pans", with an approximate volume of 91 gallons (346 liters). The total area within the curbing is 1246 gallons (4716 liters)."

Note: This change also affects Page 63 of 91, lines 22 through 27, of the Hanford Facility RCRA Permit, Revision 2 (DW Portion):

- B. Page 4-17, line 34: Delete "3A-12." Replace with "4-9."

Reason: The original text contained incorrect measurements for the stainless steel pans and one cabinet has been added to provide better segregation capability to the cell. The storage capacity of Cell 7 will not be increased in the process.

2. Page 4-21, Figure 4-9: Remove and replace with attached page.

Reason: The new figure displays the four stainless steel pans and the seven small chemical storage cabinets and their contents.

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**PART III CLASS 1 MODIFICATIONS:
305-B STORAGE FACILITY UNIT-SPECIFIC CONDITIONS (cont.)**

Replacement pages for DOE-RL 90-01, Rev. 1
Chapter 4

Pages: 4-17 and 4-21

1 The secondary containment volume of the sumps in the high bay storage area,
2 exclusive of the sumps within individual areas described above, is 565
3 gallons. Maximum storage in the high bay storage area is thus approximately
4 5650 gallons (102 drums). The high bay storage is also governed by the
5 building occupancy maximums of Table 4-1, which includes the inventory of the
6 individual storage cells described above. In order to provide additional
7 separation from spilled liquids and for ease of handling, all drums stored on
8 the high bay floor are stored on pallets. A diagram of this cell is provided
9 in Figure 4-7.

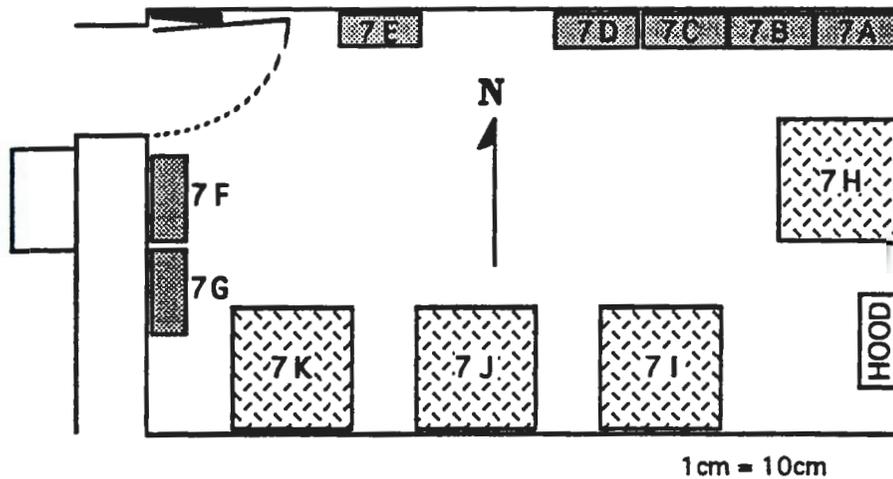
10
11 4.1.1.6.10 Flammable RMW Storage Area. Due to UBC restrictions, flammable
12 radioactive mixed waste cannot be stored in the basement of 305-B with the
13 other radioactive mixed waste. The flammable RMW received by 305-B for
14 storage prior to disposal is stored in a separate area above grade in the east
15 portion of the building in a 7'x 7'x 7' flammable liquid storage module. The
16 module is Factory Mutual approved and has four-hour fire rated walls and
17 doors. The module has a self-contained internal dry chemical fire suppressant
18 system. The module has a 90-gallon polyethylene coated sump. The module is
19 lag bolted to the concrete floor in the flammable RMW storage area indicated
20 in Figure 2-3. The module has a storage capacity of four 55-gallon drums, or
21 up to 250 gallons of total capacity of all containers stored, whichever is
22 less. A diagram of this cell is provided in Figure 4-8.

23
24 4.1.1.6.11 RMW Storage Area. Radioactive mixed waste that is not flammable
25 per UFC (i.e., flash point above 100°F) is stored in a special area in the
26 basement of 305-B. For additional segregation capability, there are seven
27 small chemical storage cabinets and four 62" x 62" x 5.5" (157cm x 157cm x
28 14cm) stainless steel "container pans", with an approximate volume of 91
29 gallons (346 liters). The total area within the curbing is 1246 gallons (4716
30 liters). The containment pans are mounted to the floor or wall of the cell to
31 provide segregated storage for potentially incompatible mixed waste streams.
32 Drums stored in this area are stored on pallets to prevent potential contact
33 with spilled waste in containment during an emergency. A diagram of this area
34 is provided in Figure 4-9.

35
36 In normal use, the storage capacity of this area is limited by the
37 radionuclide limits imposed by the DOE for "low inventory facilities." These
38 limitations are defined in DOE-STD-1027-92, *Hazard Categorization and Accident*
39 *Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety*
40 *Analysis Reports*, and are included in the radiation work permit for the mixed
41 waste storage area.

42
43 4.1.1.7 Control of Run-On [D-1a(7)]. The 305-B Storage Unit was designed to
44 eliminate the likelihood of on-site, or for that matter, off-site migration
45 via run-on and run-off. The facility is completely enclosed (i.e., complete
46 roof and no open walls) and has been constructed upon a foundation so that
47 precipitation cannot cause either run-on or run-off problems.

48
49 4.1.1.8 Removal of Liquids from Containment System [D-1a(8)]. Upon discovery
50 of liquid accumulation in the containment resulting from a spill or other
51 release, the BED must be contacted in accordance with the 305-B contingency
52 plan (Chapter 7). The BED may determine that the contingency plan should be
53 implemented. If the incident is minor, and the BED approves, removal of the
54 liquids will commence immediately following a safety evaluation. Appropriate
55 protective clothing and respiratory protection will be worn during removal
56 activities; a PNL industrial



Cell 7 Legend

7A Poisons

7B Oxidizers

7C Class 9

7D Washington Only

7E Flammable Solids

7F Corrosive Base

7G Corrosive Acid

7H Corrosive

7I Corrosive Acid

7J PCB's

7K Washington Only/Class 9

HOOD 121.9cm L x 54.2cm D x 228.6cm H

Figure 4-9. Radioactive Mixed Waste Storage Area

**PART V CLASS 1 MODIFICATIONS:
183-H SOLAR EVAPORATION BASINS UNIT-SPECIFIC CONDITIONS**

1. Page III-1, lines 1-21: Remove and replace with the attached page III-1.

Reason: Clarification of the application of the contents of Section III., "Post-Closure Requirements," due to the change in the closure option from the assumed landfill closure to the modified closure option (agreed to by Ecology on May 29, 1996). A revised post-closure permit application to reflect post-closure requirements under the modified closure option will be submitted to Ecology during Modification C of the Hanford Facility Dangerous Waste Permit.

2. Page III-65, lines 31-52 and III-66, lines 1-10: Remove and replace with the attached pages III-65 and III-66.

Reason: Updated groundwater monitoring well replacement information to reflect the final status groundwater monitoring system.

3. Page III-76, lines 1-35: Remove and replace with the attached page III-76.

Reason: Changes in security requirements due to modified closure option chosen at 183-H.

4. Appendix N, page APP N-2: Remove and replace with the attached Appendix N, page APP N-2.

Reason: Changed course description to more accurately reflect the course "BHI Waste Management, Packaging, and Storage Training"; changed typographical error for "Building Warden Training or Building Emergency Director Training" course.

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PART V CLASS 1 MODIFICATIONS:
183-H SOLAR EVAPORATION BASINS UNIT-SPECIFIC CONDITIONS (cont.)

Replacement pages for DOE-RL 88-04, Rev. 3
Section III

Pages III-1, III-65, III-66, and III-76

III. POST-CLOSURE REQUIREMENTS

In accordance with a determination that the 183-H Solar Evaporation Basins are closing under a modified closure option as allowed under Condition II.K.3. of the Hanford Facility Dangerous Waste Permit (Permit), the following sections (written under the assumption of landfill closure) are not presently considered applicable to post-closure care: Sections III.A-1 (excluding III.A-1.g.), III.A-3 (excluding III.A-3f.), III.B., and III.C. Section III.A-2 is replaced by a final status groundwater monitoring program specified in *Groundwater Monitoring Plan for the 183-H Solar Evaporation Basins*, WHC-SD-EN-APO-180, Rev. 0. This replacement has been authorized through use of Permit Condition II.R., Equivalent Materials. A revision to the following post-closure requirements that will incorporate the above changes will occur during Modification C of the Permit.

III.A. POST-CLOSURE PLAN

Post-closure care of the 183-H Basins will continue for a period specified by Ecology; however, for planning purposes, a minimum of 30 years has been envisioned. The 30-year time frame has been used throughout this plan to acknowledge the long-term commitment of the post-closure requirements. This section provides details of the post-closure plan is divided into three parts as follows:

- Section III.A-1, Inspection Plan
- Section III.A-2, Monitoring Plan
- Section III.A-3, Maintenance Plan.

III.A-1. Inspection Plan

As required by regulations, the inspection plan provides details concerning the necessary security equipment, the inspection of erosion and other factors that affect the integrity of run-on and runoff control measures, and the inspection for gas ventilation, well conditions, and benchmark integrity. A logbook will be kept by the personnel conducting the inspections and maintained for examination by the regulatory agency for the entire 30-year period of post-closure monitoring. The inspector will record any damage to the cover and/or other maintenance needs, as well as the weather conditions at the time of inspection, and will sign and date the logbook. Maintenance actions, as noted in the logbook, will be started/completed within 90 days so that the next logbook entry can document the correction of

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equivalents), will be applied to the closure area to minimize the establishment of deep-rooting broadleaf annual plants that compete with the grasses for moisture and nutrients. Field application rates of 0.57 to 1.32 pounds per acre with 2,4-D amine and -.19 to 0.44 pounds per acre with dicamba have proven effective in controlling undesirable broadleaf species. Herbicide application will be performed in accordance with regulations promulgated by the *Toxic Substances Control Act of 1976* and the *Federal Insecticide, Fungicide, and Rodenticide Act of 1975*. Selective herbicide applications will be discontinued following successful establishment of the perennial grass cover. Deep-rooting plants (primarily Russian thistle, *Salsola kali*) having root systems that can extend into the waste zones are common to the region. Manual removal of such vegetation will be required periodically during the post-closure period to prevent biointrusion and transport of covered waste materials.

III.A-3e. Repair of Run-On and Run-Off Control Structures. As discussed in Section III.A-3b, Erosion Damage Repair, the probability of serious damage to the 100-H Area due to flooding or precipitation is low. Run-on and runoff damage is expected to be minimal as a result of the combination of arid regional climate, high evapotranspiration rates, and minimal local slope in the area of the 183-H Basins. Specific run-on structures will not be used in the final cover design for the 183-H Basins. Damage to runoff control structures (ditches surrounding the cover and pipes leading from the cover drainage layer) noted during quarterly inspection periods (Table III.a-1) will be reported to the responsible maintenance organization for action. Pipes will be tested for blockages by visual and physical (probes) inspection. All blockages will be eliminated before the next inspection period using methods as little disturbing to the cover as possible. Minor damage to ditches will be repaired with shovels and other hand tools.

III.A-3f. Well Replacement

General well conditions are observed during each sampling episode at the well. The integrity of the surface protection for the well, the operating condition of the pump, the purging characteristics, and the turbidity of the sample collected are all indicators of the need for periodic maintenance. When the field sampling personnel observe the need for maintenance, the Well Services Group (Hanford Technical Services) is notified, and any required maintenance will be completed before the next sampling episode, if possible.

Long-term preventive maintenance and care of groundwater monitoring wells are described in the Westinghouse Hanford Company's *Environmental Investigations*

1 *and Site Characterization Manual* (WHC-7-7, EII, 6.4 *Groundwater Resource Protection Well Maintenance*,
2 WHC 1989). Non-priority subsurface maintenance will be performed on wells with a frequency of every three to five
3 years. At a minimum, this will include (1) removal and reinstallation of the pump system; (2) conducting a downhole
4 TV camera survey; and (3) brushing the inner walls of the casing and casing perforations or screen to remove scale
5 deposits. Additional maintenance may include removal of objects that have fallen into the well and removal of sand
6 or other debris that has entered the well. Priority maintenance will be completed whenever a condition exists that
7 would compromise the capability to collect a representative groundwater sample.

8 9 **III.B. PERSONNEL TRAINING**

10
11 This section describes the training of personnel required to maintain the 183-H Basins in a safe and secure
12 manner during post-closure care, as required per 40 CFR 265.16 and WAC 173-303-330.

13 14 **III.B-1. Outline of the Training Program**

15
16 This section outlines the introductory and continuing training programs necessary to conduct the post-
17 closure activities at the 183-H Basins in a safe manner. It also includes a brief description on how training will be
18 designed to meet actual job tasks as required per 40 CFR 265.16(a). In addition, the mandatory training programs
19 for the senior environmental radiation protection technologist (SERPT) and the site surveillance personnel (SSP) are
20 outlined in Figures III-B.1 and III-B.2, respectively.

21
22 Senior Environmental Radiation Protection Technologist – The following outline provides the classroom and
23 on-the-job training programs that will be completed by each senior environmental radiation protection technologist
24 before being allowed to conduct post-closure activities at the 183-H Basins.

- 25
26 • Training for Emergencies
 - 27 - Emergency preparedness training
 - 28 - Respiratory protection practices and procedures
 - 29 - Protective clothing and equipment
 - 30 - Emergency response training - all facilities
- 31

Class 1 Modification:
Quarter Ending 06/30/96

DOE-RL 88-04, REV. 3
06/19/91

4 183-H Basins.

3 **III.C-1. Security**

5 The potential for physical contact with or disturbance of wastes or equipment within the active portion of 183-H has
6 been eliminated by the removal of hazardous wastes and constituents from the top 15 feet and backfilling the unit to
7 grade with clean soil. These actions allow for closure of 183-H through a modified closure option. Therefore, the
8 need for the security measures identified in WAC 173-303-310 has been eliminated.

9
10 **III.D. POST-CLOSURE CONTACT**

11 The following offices will be the official contacts for the 183-H Basins during the post-closure care period:

12
13
14 U.S. Department of Energy
15 Richland Operations Office
16 Richland, WA 99352

Bechtel Hanford Inc.
P.O. Box 969
Richland, WA 99352

9613454.0502

PART V CLASS 1 MODIFICATIONS:
183-H SOLAR EVAPORATION BASINS UNIT-SPECIFIC CONDITIONS (cont.)

Replacement page for DOE-RL 88-04, Rev. 3
Appendix N

Page N-2

Course Descriptions

Hazardous Waste Operations 24-Hour, 40-Hour Training Course or Annual Refresher Course:

Provides training relative to dangerous waste management, hazard identification, and protective clothing.

Hanford Employee Safety Orientation NESO Course and Refresher (Hanford General Employee Training HGET):

Provides training relative to contingency plan implementation, effective response to emergencies, communications and alarm systems, and response to fire or explosion.

Site Specific: Provides unit specific training relative to dangerous waste management hazards, contingency plan implementation, effective response to emergencies, communications and alarm systems, response to fire or explosion, emergency equipment, and procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment.

Building Warden Training or Building Emergency Director Training (or refresher for either course):

Provides training relative to emergency coordinator responsibilities.

BHI Waste Management, Packaging & Storage Training:

Provides training relative to dangerous waste management and hazard identification

Training Director

Personnel directing training under this plan shall be knowledgeable in dangerous waste management procedures.

Records Retention

This training plan includes employee training records. The employee training records are maintained electronically and are available on BLAN soft reporting. This training plan shall be kept at the Hanford Facility and be readily retrievable. A hard copy of any site specific training that is not recorded in soft reporting must be kept on file and be readily retrievable.

Revision

This training plan shall be revised whenever training requirements in WAC 173-303-330 or the Hanford dangerous waste permit is revised.

Dangerous Waste Management Position Descriptions

This training plan applies only to employees who perform work at 183-H Solar Evaporation Basins or are 183-H Solar Evaporation Basins Emergency Coordinators. If employees fit into more than one position, they shall be placed in the position that requires the higher level of training.