S

ENGINEERING CHANGE NOTICE

H

Page 1 of 2

1. ECN 668381

Proj. ECN

ECN Category (mark one)	3. Originator's Name, Organization, MSIN, and Telephone No.	4. USQ Required?	5. Date
Supplemental ☐ Direct Revision ☒ Change ECN ☐ Temporary ☐ Standby ☐ Supersedure ☐ Cancel/Void ☐	RT Meloy, Laboratory Engineering S3-31, 373-7162	☐ Yes ☒ No	3/27/2002
	6. Project Title/No./Work Order No. WSCF/101762	7. Bldg./Sys./Fac. No. WSCF	8. Approval Designator E, S, Q
	9. Document Numbers Changed by this ECN (includes sheet no. and rev.) HNF-SD-WM-ASA-001 Rev. 2	10. Related ECN No(s). N/A	11. Related PO No. None

2a. Modification Work	12b. Work Package No.	12c. Modification Work Completed	12d. Restored to Original Condition (Temp. or Standby ECNs only)
☐ Yes (fill out Blk. 12b) ☒ No (NA Blks. 12b, 12c, 12d)	N/A	N/A Design Authority/Cog. Engineer Signature & Date	N/A Design Authority/Cog. Engineer Signature & Date

3a. Description of Change

13b. Design Baseline Document? ☐ Yes ☒ No

Revise WSCF Safety Analysis in accordance with the attached and "Record of Revision."

14a. Justification (mark one)	14b. Justification Details
Criteria Change ☐ Design improvement ☐ Environmental ☐ Facility Deactivation ☐ As-Found ☒ Facilitate Const. ☐ Const. Error/Omission ☐ Design Error/Omission ☐	Annual update to reflect current requirements and operating conditions.

APR 01 2002

12

ENGINEERING CHANGE NOTICE

1. ECN (use no. from pg. 1): 668387

3. Design Verification Required	17. Cost Impact				18. Schedule Impact (days)	
	ENGINEERING		CONSTRUCTION			
☐ Yes	Additional ☐	$ N/A	Additiinal ☐	$ N/A	Improvement ☐	N/A
☐ No	Savings ☐	$ N/A	Savings ☐	$ N/A	Delay ☐	N/A

11. Approvals

	Signature	Date		Signature	Date
Design Authority			Design Agent		
Cog. Eng.	RT Meloy	3/28/02	PE		
Cog. Mgr.	LL Curfman	3/28/02	QA		
QA	BL Smith	3/28/02	Safety		
Safety	GD Mickle	3/28/02	Design		
Environ.	GJ Warwick	3/28/02	Environ.		
Other	JL Nuzum	3/28/02	Other		

DEPARTMENT OF ENERGY

Signature or a Control Number that tracks the Approval Signature

ADDITIONAL

HNF-SD-WM-ASA-001
Revision 3
Copy No._____

WASTE SAMPLING AND CHARACTERIZATION FACILITY COMPLEX SAFETY ANALYSIS

Prepared for the U.S. Department of Energy
Assistant Secretary for **Environmental Management**

Project Hanford Management Contractor for the
U.S. Department of Energy under Contract DE-AC06-96RL13200
Fluor Hanford
P.O. Box 1000
Richland, Washington

HNF-SD-WM-ASA-001
Revision 3

ECN-668387

Copy No._____

WASTE SAMPLING AND CHARACTERIZATION FACILITY COMPLEX SAFETY ANALYSIS

Document Type: ASA Division: WM

R. T. Meloy
Fluor Hanford

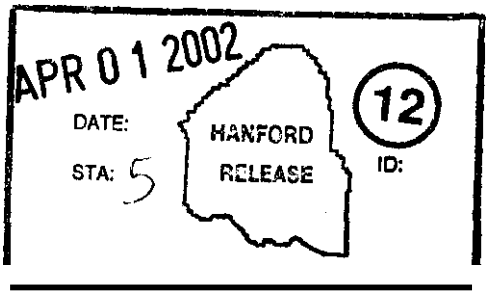
Date Published
March 2001

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the
U.S. Department of Energy under Contract DE-AC06-96RL13200

Fluor Hanford
P.O. Box 1000
Richland, Washington

Release Approval 4/1/02
Date



Total Pages 20

Printed in the United States of America

RECORD OF REVISION	(1) Document Number HNF-SD-WM-ASA-001	Page 1

Change Control Record

(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release (5) Cog. Engr.	(6) Cog. Mgr Date
0	7) Initial Release on EDT 612184 on 6/4/96	RT Meloy RT Meloy	SL Brey 5/22/96 SL Brey 5/22/96
1	Added new section 3.1 to address worker hazards. Revised list of references. Updated to reflect current facility operations per ECN 657210	RT Meloy RT Meloy 1/27/00 1/27/00	LL Curfman LL Curfman 1/27/00 1/27/00
2	Added to bullets under subsection 2.5 that the ESAF & MLSF provide heated storage for 55 gal. drums. Updated references per ECN 661279	RT Meloy 3/9/01	LL Curfman 3/9/01
RS 3	Added vapor to list of Analytical Inputs in section 2.6. Increased Catagory 3 limit for tritium from 1.0 E +3 to reflect new 1027-92 values. Revised references per ECN 668387	9/1/02	3/22/02 L Curfman

A-7320-005 (10/97)

EXECUTIVE SUMMARY

This document was prepared to analyze the Waste Sampling and Characterization Facility for safety consequences by:

- Determining radionuclide and highly hazardous chemical inventories
- Comparing these inventories to the appropriate regulatory limits
- Documenting the compliance status with respect to these limits
- Identifying the administrative controls necessary to maintain this status.

The primary purpose of the Waste Sampling and Characterization Facility (WSCF) is to perform low-level radiological and chemical analyses on various types of samples taken from the Hanford Site. These analyses will support the fulfillment of federal, Washington State, and Department of Energy requirements.

A Final Safety Analysis Report (FSAR) WHC-SD-W011H-SAR-001, "*Waste Sampling and Characterization Facility Final Safety Analysis Report* (McCullough 1995), was prepared for the WSCF. It shows that the operation of the WSCF is safe, it presents no unacceptable risk to workers, onsite personnel, or offsite personnel. The original categorization of the WSCF was as a low-hazard nuclear facility. Further

(1) *McCullough, K.S., 1995. Final Safety Analysis Report for the Waste Sampling and Characterization Facility Complex,* WHC-SD-WOllH-SAR-001, Westinghouse Hanford Company, Richland, Washington.

review showed that the operation of the facility can meet the guidelines in DOE Standard DOE-STD-1027-92, "'Hazard Categorization and Accident Analysis *Techniques* for *Compliance* with *DO€* Order *5480.23,* Nuclear Safety Analysis Reports (DOE 1992) and could qualify as non-nuclear, radiological facility. The following determinations were made:

- A review of the expected radionuclide inventories was performed against the DOE-STD-1027-92 requirements. It was determined that the facility can meet the requirements of a non-nuclear facility.

- A review of the facility chemical inventory was performed against the [3]29 CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals (CFR 1995) requirements for highly hazardous chemicals. The WSCF contains no highly hazardous chemicals at greater than threshold quantities.

---

(2) DOE, 1992, Hazard Categorization and Accident Analysis Techniques for Compliance with *DOE* Order *5480.23,* Nuclear Safety Analysis Reports, DOE-STD-1027-92, U.S. Department of Energy, Washington, D.C.

(3) 29 CFR 1910, 1995. "Process Safety Management of Highly Hazardous Chemicals Code of Federal Regulations, as amended,

- A review of the expected radionuclide inventories was performed against the [4]40 CFR 302, "EPA Designation, Reportable Quantities, and Notification Requirements for Hazardous Substances Under CERCLA" (CFR 1991) reportable quantity requirements. It was determined that the expected radionuclide inventories exceed these requirements.

Based upon the above three determinations the WSCF qualifies as a radiological facility as defined in DOE Limited Standard [5]DOE-EM-STD-5502-94, *Hazard Baseline Documentation* (DOE 1994). This document was prepared to comply with the administrative control requirements and provides an auditable safety analysis as required in [6]DOE Order 5481.1B, *Safety Analysis and Review System* (DOE 1986) and DOE-STO-1027-92. Applicable information has been extracted from the WSCF FSAR and other supporting documentation. The WSCF FSAR will be retained as a historical reference document only.

---

(4) 40 CFR 302, 1991. "EPA Designation. Reportable Quantities, and Notification Requirements for Hazardous Substances Under CERCLA", *Code of Federal Regulations.* as amended.

(5) DOE, 1994. *Hazard Baseline Documentation.* DOE-EM-STD-5502-94, U.S. Department of Energy, Washington. D.C.

(6) DOE, 1986, *Safety Analysis and Review System.* DOE-5481.16, U.S. Department of Energy, Washington, D.C.

CONTENTS

LIST OF FIGURES

LIST OF TABLES

WASTE SAMPLING AND CHARACTERIZATION FACILITY COMPLEX SAFETY ANALYSIS

1.0 INTRODUCTION

The Waste Sampling and Characterization Facility (WSCF) is an analytical laboratory complex on the Hanford Site that was constructed to perform chemical and low-level radiological analyses on a variety of sample media in support of Hanford Site customer needs. The complex is located in the 600 area of the Hanford Site, east of the 200 West Area and south of the Hanford Meteorology Station as shown in Figure 1. Customers include effluent treatment facilities, waste disposal and storage facilities, and remediation projects. Customers primarily need analysis results for process control and to comply with federal, Washington State, and Department of Energy environmental or industrial hygiene requirements.

This document was prepared to analyze the facility for safety consequences and includes the following steps:

- Determine radionuclide and highly hazardous chemical inventories
- Compare these inventories to the appropriate regulatory limits
- Document the compliance status with respect to these limits
- Identify the administrative controls necessary to maintain this status.

2.0 DESCRIPTION OF COMPLEX

The Waste Sampling and Characterization Facility (WSCF). Building 6266, and related support facilities provide the Hanford Site full analytical capabilities required by the Resource Conservation and Recovery Act *of 1976* (RCRA). Comprehensive Environmental Response, Compensation, and Liability Act of *1980* (CERCLA). Safe Drinking Water Act of *1974* (SDWA), Washington State Administrative Code (WAC) Chapter *246-247* Radiation Protection - Air Emissions. and U.S. Department of Energy (DOE) Order 5480.1B. These analyses are completed to satisfy subsequent sample site treatment and disposal activities.

The WSCF offers a wide range of process control, environmental, industrial hygiene, and radiological analytical services. These include counting room support for stack and room air monitoring and low-level environmental samples, process control and permit compliance support for liquid effluent treatment systems, RCRA ground water monitoring support and industrial hygiene analysis. Buildings located within the complex are described below.

2.1 THE WASTE SAMPLING AND CHARACTERIZATION FACILITY

The WSCF, which is the primary analytical facility within the complex, houses the Administrative Support Area, the Nuclear Spectroscopy Laboratory (NSL), and the Analytical Laboratory consisting of 33 modules. This facility was designed and constructed to process low level radioactive samples.

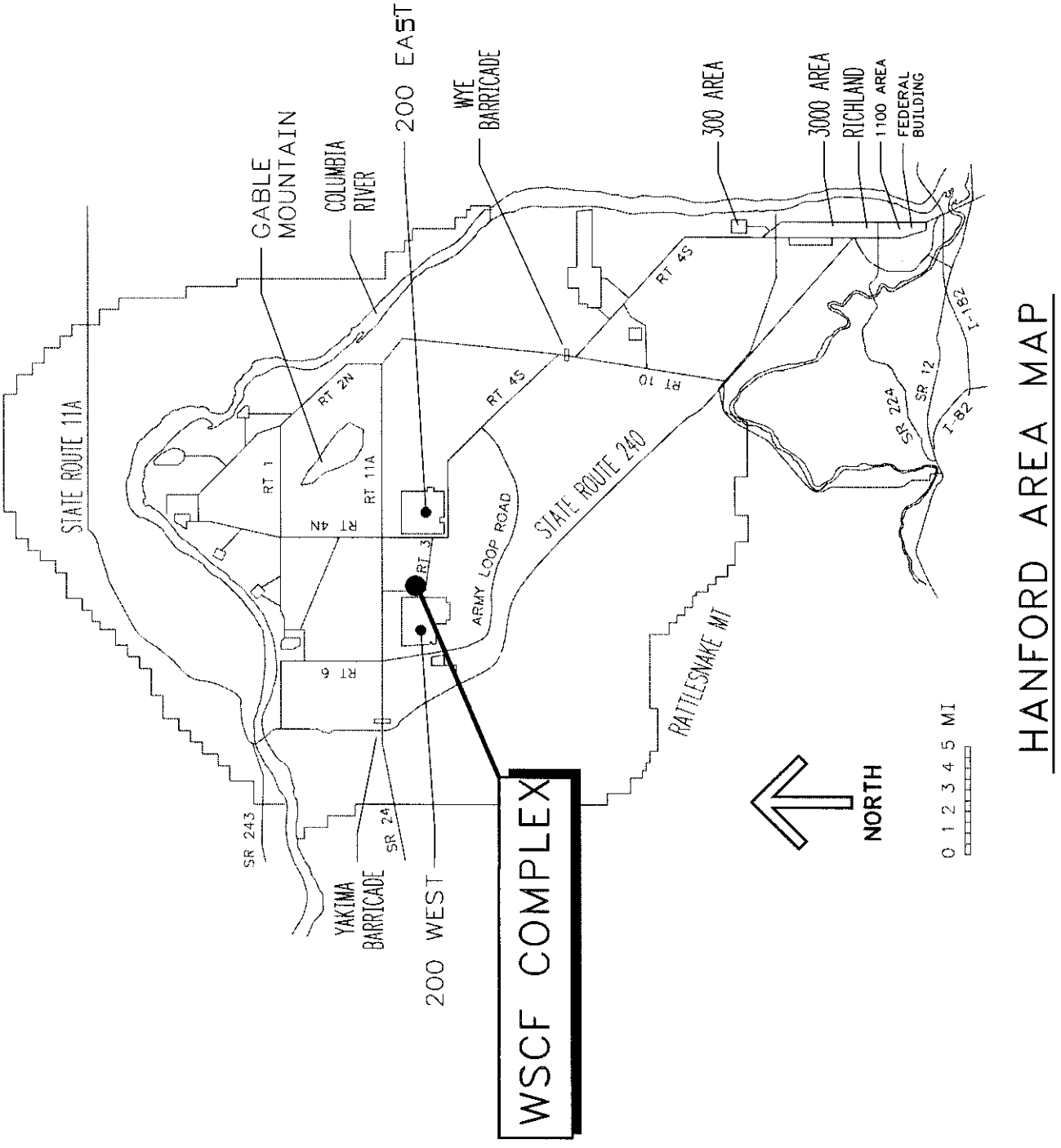


Figure 1 Location of the Waste Sampling and Characterization Facility Complex

2.2 THE ADMINISTRATIVE SUPPORT AREA

The Administrative Support Area provides facilities for support staff, records retention and storage, and computer and communications capabilities.

2.3 NUCLEAR SPECTROSCOPY LABORATORY (NSL)

The NSL is located in the basement beneath the Administrative Support area and provides a low background radiation area for sensitive analyses. The NSL provides the capability to perform radiological analysis on radioactive samples. Additional support rooms are in the basement including the heating, ventilating, and air conditioning (HVAC) room, shop, electrical room, utility room, and machine room.

2.4 ANALYTICAL LABORATORY

The Analytical Laboratory contains 22 rooms for analysis and sample preparation. The remaining 11 modules provide facilities for sample screening. sample storage, waste handling, data gathering, plant utilities and other support functions. This laboratory is used for organic chemical analyses, inorganic chemical analyses, and radionuclide separations.

2.5 SUPPORT FACILITIES

The surrounding support facilities to the WSCF include the following:

- The Environmental Sample Archive Facility (ESAF) (Building 6267) is used to store sample material that has been analyzed in the WSCF and that has not been returned to the customer or disposed of as waste into the Contaminated Liquid Waste Retention Vault or the Solid Waste Storage Facility. Storage is provided for 2,500 samples requiring refrigerated storage and 11,500 samples requiring ambient storage. The ESAF also provides heated storage for 55-gal waste drums.

- The Environmental Data Remedial Tracking System (EDRTS) Facility (Building 6270) orovides accommodations for computerized records data processing to retain records on sample inventories, tracking data, and sample analysis data.

- The Mobile Laboratory Storage Facility (MLSF) (Building 6269) is a facility used to house up to five mobile laboratories (sample trucks) providing protection for the instrumentation and computers inside the mobile laboratories from adverse weather conditions. It also contains a calibration laboratory for instrumentation used in the mobile laboratories. The MLSF also provides heated storage for 55-gal wastedrums.

- The Utility Building (Building 6265) is an open sided facility used for gas bottle storage and contains an area for unassigned storage. The gas bottle storage area has the capacity to store 150 bottles.

- The Solid Waste Storage Facility (SWSF) (Building 6265A) is an open sided facility used to temporarily store, <90 days, 55-gal drums containing solid hazardous and/or radioactive laboratory sample excess and laboratory wastes generated by the Analytical Laboratory and the NSL. The SWSF has the capacity to store 48 drums of solid waste.

- The Contaminated Liquid Waste Retention Vault (CLWRV) (Building 6266-A) consists of two 3.785-L (1,000-gal) polyethylene tanks contained in a common concrete vault. The tanks are designed to receive inorganic contaminated liquid waste or sample excess from the Analytical Laboratory.

- The Sample Equipment Cleaning Facility (SECF) (Building 6268) provides cleaning for the various tools used for collecting samples from the field. The tools are scrubbed and given solvent and acid baths to clean residual chemicals.

2.6 LABORATORY ANALYTICAL INPUTS

Samples being sent to WSCF for analysis include vapor, water, soil, fauna, flora, and filters from room and stack samples. Both organic and inorganic samples will be prepared and analyzed. Samples with a contact dose rate of ≤ 1 mrem/h beta/gama and ≤ 10 nci/g alpha will routinely be processed, with some samples being up to 10 mrem/h. Laboratory standards are also used in the lab to confirm analytical results. The chemical and radiological characteristics of samples and standards will vary significantly. Conservative assumptions of sample content can be made to bound the WSCF radioisotopic inventory. This sample is shown in Table 1.

2.7 LABORATORY PRODUCTS AND BYPRODUCTS

The WSCF's primary product is the data generated by the analytical process. Analyzed samples are either archived for future reference or disposed of as laboratory waste. Like the samples, waste may be organic, inorganic. radiological and/or nonradiological. Wastes are handled in accordance with Washington State and federal regulations.

2.8 FACILITY FUNCTIONS

Analysis is completed to satisfy environmental regulatory requirements and DOE Order 5480.1B as previously noted. Spectroscopy. spectrography chromatography, and atomic absorption are the most frequently used analytical methods. Evaporation and wet chemistry are used to prepare samples for analysis. Radioactive inorganic liquid wastes are generated in the Analytical Laboratory. Hazardous solid wastes and organic wastes also are generated in the Analytical Laboratory. These wastes are packaged into containers and temporarily stored, <90 days, in the SWSF. The solid wastes will be removed to a long-term disposal facility.

3.0 HAZARD CATEGORIZATION

3.1 FACILITY HAZARDS

The WSCF facility has radiological hazards, chemical hazards and standard industrial hazards that must be assessed. These hazards are addressed in the facility activities by the site wide programs developed to ensure adequate prevention or mitigation of the hazards. As indicated in the following sections, the determination of the facility hazard category using the guidance of DOE-STD-1027-92 and DOE-EM-STD-5502-94 establishes that the WSCF is a radiological facility with the only significant potential impact from activities in the facility being to the facility workers. Acceptance of the facility hazards is based on programs that are established on a site wide basis for all PHMC facilities to ensure worker safety and minimization of the impact from releases. Specific implementing procedures are established as necessary for the facility.

WSCF controls radiological hazards in accordance with the requirements of 10 CFR 835, "Occupational Radiation Protection." by compliance with DOE/RL-96-109, "Hanford Site Radiological Control Manual," and the use of PHMC implementing procedures. The radiological control program identifies the necessary controls and actions to minimize potential worker exposure and ensure safety.

The chemical hazards are controlled through commitments and controls identified in the "WSCF Laboratory Complex Chemical Hygiene Plan," ASP-315, Section 4.20. The chemical hygiene plan identifies the chemical hazards in WSCF and establishes the program requirements to ensure a safe and healthy workplace and to prevent uncontrolled releases of hazardous chemicals.

The other industrial hazards are controlled through the occupational safety and health program as provided by the PHMC implementing procedures. The WSCF is committed to conducting work in a safe and compliant manner and will continue to maintain the support functions appropriate to the form and magnitude of the identified hazards.

3.2 METHODOLOGY

Hazard categorization for WSCF requires evaluation of both radioactive material and hazardous chemical inventories. Inventories will be compared with threshold quantities to classify the facility as either a Nuclear, Radiological, Non-Nuclear, or Other Industrial facility. The ratios of each radioactive isotope to values tabulated in DOE-STD-1027-92 will be summed. The facility's category will be established by comparing this sum to unity. Further hazard classification will be made by comparing chemical inventories to 29 CFR Part 1910.119 and 40 CFR Part 302.4.

3.3 RADIOLOGICAL HAZARD CATEGORIZATION ANALYSIS

The WSCF hazard category is based on comparing its radiological inventory to DOE-STD-1027-92 threshold values using DDE-EM-STD-5502-94 methodology. The radionuclide threshold ratios are calculated (see Equation 1) for each isotope. The sum of these ratios determines the facility's category.

$$\sum_{i=1}^{J} \frac{\textit{Inventory Quantity of Isotope,}}{\textit{Category Threshold Quantity of Isotope,}} < 1 \qquad (1)$$

If the summation of the ratio for category 3 threshold quantities is less than 1, then the facility would be designated as a less than Category 3 Facility. By the definition in DOE-EM-STD-5502-94, Radiological Facilities are "those facilities that do not meet or exceed the hazard category 3 threshold quantity values published in DOE-STD-1027-92, but still contain some quantity of radioactive material (above those discussed in Appendix B to 40 CFR Part 302)."

3.4 RADIOLOGICAL INVENTORY CALCULATION

WSCF has chosen to limit sample dose rate to 10-mrem/h and 10 nCi/g. To simplify calculations, all samples will be assumed to contain the maximum inventory Calculations to determine the WSCF radiological inventory wi11 be based on the "typical" liquid sample taken from the Hanford Site K Basin and shown in Table 1. This sample produces a contact dose rate of 0.00259-mrem/h. For non-TRU, its content will be scaled by a factor of 3860 to yield the 10-mrem/h dose rate. For TRU the sample will be assigned a content of 10 nCi/ml (g) of ^{239}Pu. Filling the facility to its maximum of 33.000 liters yields quantities shown in Table 1.

A typical calculation using ^{60}Co follows:

$$Co_{60} = (1.6\,10^{-3}\,\mu\tfrac{Ci}{L}) \times 386 \times (10^{-6}\tfrac{Ci}{\mu Ci}) \times 33{,}000L \qquad (2)$$

For ^{239}Pu:

$$Pu_{239} = 10\tfrac{nCi}{mL} \times 10^{3}\tfrac{mL}{L} \times 10^{-9}\tfrac{Ci}{nCi} \times 33{,}000L \qquad (3)$$

Table 1 shows that WSCF is clearly less than category 3.

Table 1. WSCF Shown As Less Than Category 3.

ISOTOPE	Sample Content µCi/l	WSCF Sample µCi/l	WSCF Inventory Ci	Cat 3 Limit Ci	Cat 3 Ratio
^{3}H	1.10 E-02	4.25 E-05	1.40 E-00	1.60 E+04	8.75-E-05
^{52}Mn	1.10 E-03	4.25 E-06	1.40 E-01	3.40 E+02	4.12 E-04
^{60}Co	1.60 E-03	6.18 E-06	2.04 E-01	2.80 E+02	7.28 E-04
^{90}Sr	2.40 E-03	9.26 E-06	3.06 E-01	1.60 E+01	1.91 E-02
^{95}Zr	4.20 E-04	1.62 E-06	5.35 E-02	7.00 E+02	7.64 E-05
^{94}Nb	3.50 E-04	1.35 E-06	4.46 E-02	2.00 E+02	2.23 E-04
^{99}Tc	6.90 E-07	2.66 E-09	8.79 E-05	1.70 E+03	5.17 E-08
^{106}Ru	3.20 E-03	1.24 E-05	4.08 E-01	1.00 E+02	4.08 E-03
^{125}Sb	1.40 E-03	5.40 E-06	1.78 E-01	4.30 E+05	4.15 E-07
^{134}Cs	1.20 E-03	4.63 E-06	1.53 E-01	4.20 E+01	3.64 E-03
^{137}Cs	2.70 E-02	1.04 E-04	3.44 E-00	6.00 E+01	5.73 E-02
^{141}Ce	4.20 E-04	1.62 E-06	5.35 E-02	1.00 E+03	5.35 E-05
^{144}Ce	2.90 E-03	1.12 E-05	3.69 E-01	1.00 E+02	3.69 E-03
^{147}Pm	2.00 E-05	7.72 E-08	2.55 E-03	1.00E +03	2.55 E-06
^{239}Pu		1.00 E-05	3.30 E-01	5.20 E-01	6.35 E-01
Total					0.72

3.5 COMPARISON TO 40 CFR 302. APPENDIX B LEVELS

The next step in the final categorization is the comparison of the reportable quantity (RQ) values found in 40 CFR Part 302.4, Appendix B to the radiological inventory identified for the facility. From the above analyses, the facility will remain a "less than category 3" facility if it only handles samples with a 10 mrem/hr contact dose rate; therefore, only total inventory for 10 mrem/hr samples will be used in the comparison.

Table 2. Comparison of WSCF Radiological Inventory (10 mrem/hr Samples) to 40 CFR 302.4, Appendix B RQ Values.

Isotope	Inventory (Ci)	40 CFR 302.4 RQ (Ci)
Co-60	2.0 E-01	10
Sr-90	3.0 E-01	0.1
Cs-137	3.4 E-00	1
Pu-239	3.3 E-01	0.01

From the above analysis, the WSCF radiological inventory could exceed the reportable quantities of 40 CFR 302. The facility can therefore be designated as either a Radiological or Non-Nuclear Facility, depending on the potentially releasable hazardous material inventory.

3.6 COMPARISON TO 29 CFR 1910.119 LEVELS

The last step in the final categorization is the comparison of the WSCF chemical inventory to 29 CFR Part 1910.119, Appendix A or 40 CFR Part 355 threshold quantities (TQs). A list of reportable chemicals that are used in significant quantities at WSCF are shown below in Table 3. These chemicals are compared to 29 CFR Part 1910.119 threshold quantities. Other reportable chemicals that are used at WSCF are not listed as they are well below the threshold quantities.

Hazardous Material in WSCF complex	Quantity of chemical in WSCF complex (lbs)	29 CFR 1910 Threshold quantity (lb)
Hydrochloric Acid (HCl)	137	5,000
Hydrofluoric Acid (HF)	8	1,000
Hydrogen Peroxide (H_2O_2)	33	7,500
Nitric Acid (HNO_3)	186	500

Although the facility maintains chemical inventory, there are no hazardous materials of a type or magnitude capable of seriously exposing several facility occupants or causing serious exposures outside the facility. The hazardous materials are limited to typical quantities of maintenance, cleaning, and structural materials routinely encountered in offices, residences, workshops, and so forth. Table 3 shows that the amount of chemicals in the WSCF are below the CFR thresholds

and therefore the WSCF is categorized as a "Radiological Facility" and not a "Non Nuclear Facility" in accordance with the guidance of DOE-EM-STD-5502-94.

4.0 ADMINISTRATIVE CONTROLS

The safety analysis concludes that the WSCF presents low hazards to the public and onsite worker. This conclusion is based on the maximum potential radionuclide inventory being less than the Table A.l. Category 3 threshold quantities presented in DOE-STD-1027-92. The facility chemical inventories are below the threshold quantities as specified by DOE-EM-STD-5502-94 that would require further analysis per DOE 5481.1B. This results in the designation of the of the WSCF as a radiological facility. To maintain this classification. however, administrative controls must be in place to ensure the radionuclides inventory is maintained at these levels throughout the facility's operations. Programs must also be in place to protect facility workers from radiation and chemical hazards as well as conventional industrial hazards.

The PHMC has established the "Integrated Environment, Safety and Health Management System (ISMS) Plan" (HNF-MP-003) to provide a single, defined safety and environmental system that integrates environment, safety and health requirements into the work planning and execution processes to effectively protect the workers, public and environment. This objective is provided by coordination of the site programs that establish the administrative controls through implementing procedures for planning and conducting work. The ISMS safety management core functions to define the work, analyze hazards, develop and implement hazard controls, and provide feedback for continuous improvement are provided by the site program procedures and facility specific implementing procedures.

The followins administrative controls shall be maintained at the WSCF to ensure protection of worker health and safety in accordance with this safety analysis:

- An inventory control program shall ensure that radionuclide inventories at the WSCF are maintained below the DOE-STO-1027-92. Table A.l. Category 3 threshold quantities. This program consists of:

  - Sample Acceptance Criteria - Sample acceptance criteria are maintained to ensure compliance with DOE-STD-1027.92. Any changes or waivers to the acceptance criteria must be analyzed to ensure that the sum of the radionuclide threshold ratios remains less than one. No changes shall be made that would cause the facility inventory to exceed the DOE-STD-1027-92, Table A.1, Category 3 threshold quantities without appropriate safety analysis.

  - Sample Verification Program - Samples are screened to verify that they comply with the sample acceptance criteria before they are admitted for analysis. Samples that exceed the screening criteria shall be removed from the complex before additional samples are received.

- Worker health and safety will be protected through recognized facility and Hanford Site programs that identify, control and mitigate chemical and industrial hazards. These programs include the following at the WSCF.

  - Chemical Hygiene Program - Chemical hazards are controlled at the facility through implementation of the "WSCF Laboratory Complex Chemical Hygiene Plan" as documented in ASP-315, Section 4.20.

  - Radiological Control Program - Radiation hazards are minimized by the limited radionuclide concentrations allowed in samples received in the facilitv and controlled bv the applicable site radiation protection procedures that implement"the requirements of the "Hanford Site Radiological Control Manual" (DOE/RL-96-109).

  - Occupational Safety and Health Program - Industrial hazards are controlled through the site program provided by the PHMC implementing procedures.

Other site programs that will aid in preventing or mitigating any event that could affect the health and safety of a facility worker include the Fire Protection Program and the Emergency Management Program. All of these programs are developed to assure worker safety and the implementation of DOE orders and regulations. Changes to these programs are made using applicable change control procedures as necessary to ensure continued compliance.

5.0 REFERENCES

29 CFR 1910.119, *Code of Federal Regulations,* as amended.

40 CFR 302, 1991. "EPA Designation, Reportable Quantities, and Notification Requirements for Hazardous Substances Under CERCLA", *Code of Federal Regulations.* as amended.

Comprehensive Environmental Response. Compensation, and Liability Act of 1980, (CERCLA), 42 USC 9601, et seq.

DOE, 95-ASB-028, 1995, *Approval of Waste Sampling and Characterization Facility Hazard Class Recategorization,* 9503621, DOE, 1995

DOE, 1986, *Environment, Safety. and Health Program for Department of Energy Operations.* DOE 5480.1B, U.S. Department of Energy, Washington, D.C.

DOE, 1992, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports,* DOE-STD-1027-92, U.S Department of Energy, Washington, D.C.

DOE, 1994, *Hazard Baseline Documentation,* DOE-EM-STD-5502-94, U.S. Department of Energy, Washington, D.C.

Resource Conservation and Recovery Act of 1976 (RCRA), 42 USC 6901, et seq.

Safe Drinking Water Act of 1974, 42 USC 3007, et seq.

Hanford Site Radiological Control Manual, DOE/RL-96-109

WSCF Laboratory Complex Chemical Hygiene Plan, ASP-315, Section 4.20