Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

JAN 10 2013

13-EMD-0018

Mr. E. R. Skinnarland
Nuclear Waste Program
State of Washington
Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

Dear Mr. Skinnarland:

CLASS 1 MODIFICATIONS TO THE HANFORD FACILITY RESOURCE CONSERVATION AND RECOVERY ACT PERMIT (PERMIT), QUARTER ENDING DECEMBER 31, 2012

In accordance with the Permit Condition I.C.3, enclosed for your notification are the Class 1 modifications for the quarter ending December 31, 2012.

These modifications pertain to the following portions of the Permit: Issuance page; Introduction; Definitions; Acronyms; Section I.A.1; Section II.F.2.d; and Part III requirements for the 400 Area Waste Management Unit, Integrated Disposal Facility, and Waste Treatment Plant. The Class 1 modifications are being made to ensure that activities are conducted in compliance with the Permit. A record of these modifications is maintained in the Hanford Facility Operating Record.

If you have any questions, please contact me, or your staff may contact Ray J. Corey, Assistant Manager for Safety and Environment on (509) 376-0108.

Sincerely,

Matt McCormick
Manager

EMD:ACM

Enclosure

cc w/encl: See Page 2

cc w/encl:
P. G. Harrington, ORP (CD ROM)
Ecology NWP Library (Hardcopy)
Environmental Portal, LMSI, A3-95 (CD ROM)
Administrative Record, TSD: H-0-1, H-0-8, T-3-4, H6-08 (CD ROM)
HF Operating Record (J. K. Perry, MSA, H7-28) (CD ROM)

cc w/o encl:
F. W. Bond, Ecology
D. M. Busche, BNI
A. S. Carlson, Ecology
B. L. Curn, URS
S. L. Dahl, Ecology
L. L. Fritz, MSA
J. A. Hedges, Ecology
D. L. McDonald, Ecology
A. L. Prignano, Ecology
J. R. Seaver, CHPRC

ENCLOSURE

HANFORD FACILITY RCRA PERMIT MODIFICATION NOTIFICATION FORMS
CLASS 1 MODIFICATIONS FOR QUARTER ENDING DECEMBER 31, 2012
Mr. E. R. Skinnarland, Ecology

Consisting of 420 pages,
including this cover page

Hanford Facility RCRA Permit Modification Notification Forms

Permit Revision 8C

Part II, General Facility Conditions

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Page 3 of 8	Introduction
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Reviewed by RL Program Office: 12/21/12

Date

A.1

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Permit Revision 8C	**Permit Issuance Page (Page 1 of 42)**

Description of Modification:

ISSUED TO:

United States Department of Energy
Richland Operations Office
(Owner/Operator)
P.O. Box 550, MSIN A7-50
Richland, Washington 99352
Telephone: (509) 376-7395

United States Department of Energy
Office of River Protection
(Owner/Operator)
P.O. Box 450, MSIN H6-60
Richland, Washington 99352
Telephone: (509) 372-3062

~~Mission Support Alliance~~
~~2490 Garlick, MSIN H1-30~~
~~Richland, Washington 99354~~
~~Telephone: (509) 376-1310~~CH2MHILL Plateau Remediation Company
(Co-operator)
P.O. Box 1600, MSIN H7-30
Richland, Washington 99352
Telephone: (509) 376-0556

Bechtel National, Inc.
(Co-Operator)
2435 Stevens Center Place MSIN H4-02
Richland, Washington 99354
Telephone: (509) 371-2335

Washington Closure Hanford, LLC
(Co-operator)
2620 Fermi Avenue, MSIN H4-24
Richland, Washington 99354
Telephone: (509) 372-9951

Washington River Protection Solutions, LLC
(Co-operator)
P.O. Box 1500, MSIN H6-63
Richland, Washington 99352
Telephone: (509) 372-9138

Pacific Northwest National Laboratory
(Co-operator)
P.O. Box 999, MSIN K1-46
Richland, Washington 99352
Telephone: (509) 375-5911

~~CH2MHILL Plateau Remediation Company~~
~~(Co-operator)~~
~~P.O. Box 1600, MSIN H7-30~~
~~Richland, Washington 99352~~
~~Telephone: (509) 376-0556~~

WAC 173-303-830 Modification Class [1 2]	Class 1	Class '1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1
Enter wording of WAC 173-303-830, Appendix I Modification citation: The Mission Support Alliance contractor was mistakenly identified as a permittee. Mission Support Alliance is contracted by the DOE to provide infrastructure services to DOE and other Hanford contractors. Mission Support Alliance is not identified as an owner or operator on any of the Hanford Facility TSD unit Permit Application Part A Forms. Also, Mission Support Alliance contractual workscope does not include operation and/or management of Hanford TSD units.

Modification Approved: ☐ Yes ☐ No (state reason for denial)
Reason for denial:

Reviewed by Ecology:

R. R. Skinnarland Date

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **Permit Revision 8C**	Permit Part **Introduction (Page 5 of 42)**

Description of Modification:

Introduction

Where information regarding treatment, management, and disposal of the radioactive source, byproduct material, special nuclear material (as defined by the Atomic Energy Act of 1954, as amended) and/or the radionuclide component of mixed waste has been incorporated into this permit, it is not incorporated for the purpose of regulating the radiation hazards of such components under the authority of this permit or Chapter 70.105 RCW.

Pursuant to Chapter 70.105 RCW, the Hazardous Waste Management Act (HWMA) of 1976, as amended, Chapter 70.105D RCW, the Model Toxics Control Act (MTCA), and regulations promulgated there under by the Washington State Department of Ecology (hereafter called Ecology), codified in Chapter 173-303 Washington Administrative Code (WAC), Dangerous Waste Regulations, a Dangerous Waste Permit is issued to the United States Department of Energy (USDOE) - Richland Operations Office (RL) and Office of River Protection (ORP) [owner/operator], and its contractors [co-operators], Bechtel National, Incorporated (BNI), CH2MHILL Plateau Remediation Company (CHPRC), ~~Mission Support Alliance, LLC (MSA)],~~ Pacific Northwest National Laboratory (PNNL), Washington Closure Hanford, LLC (WCH), and Washington River Protection Solutions, LLC (WRPS) and hereafter called the Permittees, for the treatment, storage, and disposal of dangerous waste at the Hanford Facility.

WAC 173-303-830 Modification Class [1 2]	Class 1	Class 1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1
Enter wording of WAC 173-303-830, Appendix I Modification citation: The Mission Support Alliance contractor should not be listed among the entities to which the permit is issued. Mission Support Alliance is contracted by the DOE to provide infrastructure services to DOE and other Hanford contractors. The subject contractor does not meet the WAC 173-303 definition of an operator. The subject contractor is not identified as an owner or operator on any of the Hanford Facility TSD unit Permit Application Part A Forms. Also, Mission Support Alliance contractual workscope does not include operation and/or management of Hanford TSD units.

Modification Approved: ☐ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology: R. R. Skinnarland Date

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **Permit Revision 8C**	Permit Part **Definitions (Page 10 of 42)**

Description of Modification:

Definitions

The term "**Contractor(s)**" means, unless specifically identified otherwise in this Permit, or Attachments, Bechtel National, Inc. (BNI), CH2M HILL Plateau Remediation Company, Inc. (CHPRC), ~~Mission Support Alliance, LLC (MSA),~~ Pacific Northwest National Laboratory (PNNL), Washington Closure Hanford, LLC (WCH), and Washington River Protection Solutions, LLC (WRPS).

WAC 173-303-830 Modification Class [1 2]	Class 1	Class '1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1

Administrative and informational changes. Administrative and informational changes. The Mission Support Alliance contractor should not be identified as a Contractor. Within the permit, references to Contractors are generally intended to identify those contractors that are also Operators. Mission Support Alliance is contracted by the DOE to provide infrastructure services to DOE and other Hanford contractors. The subject contractor does not meet the WAC 173-303 definition of an operator and therefore should not be referred to as a permittee. Mission Support Alliance is not identified as an owner or operator on any of the Hanford Facility TSD unit Permit Application Part A Forms. Also, Mission Support Alliance contractual workscope does not include operation and/or management of Hanford TSD units.

Modification Approved: ☐ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology: R. R. Skinnarland Date

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **Permit Revision 8C**	Permit Part **Definitions (Page 11 of 42)**

Description of Modification:

Definitions

The term "**Permittees**" means the United States Department of Energy (owner/operator), Bechtel National, Inc. (Co-operator), CH2M HILL Plateau Remediation Company (Co-operator), ~~Mission Support Alliance, LLC (MSA),~~ Pacific Northwest National Laboratory (Co-operator), Washington Closure Hanford, LLC (Co-operator), Washington River Protection Solutions, LLC.

WAC 173-303-830 Modification Class [1 2]	Class 1	Class '1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1

Administrative and informational changes. Administrative and informational changes. The Mission Support Alliance contractor was mistakenly referred to as a permittee. Mission Support Alliance is contracted by the DOE to provide infrastructure services to DOE and other Hanford contractors. The subject contractor does not meet the WAC 173-303 definition of an operator and therefore should not be referred to as a permittee. Mission Support Alliance is not identified as an owner or operator on any of the Hanford Facility TSD unit Permit Application Part A Forms. Also, Mission Support Alliance contractual workscope does not include operation and/or management of Hanford TSD units.

Modification Approved: ☐ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology: R. R. Skinnarland Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Permit Revision 8C	**Acronyms (Page 13 of 42)**

Description of Modification:

Acronyms

LDR	Land Disposal Restrictions
LERF	Liquid Effluent Retention Facility
LSFF	105-DR Large Sodium Fire Facility
~~MSA~~	~~Mission Support Alliance, LLC~~
MTCA	Model Toxics Control Act

WAC 173-303-830 Modification Class [1 2]	Class 1	Class [1]1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1

Administrative and informational changes. Administrative and informational changes. Consistent with permit modifications to remove references to the Mission Support Alliance contractor, the MSA acronym is not needed.

Modification Approved: ☐ Yes ☐ No (state reason for denial)

Reason for denial:

Reviewed by Ecology:

R. R. Skinnarland Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Permit Revision 8C	**Part I, Standard Conditions**

Description of Modification:
Section I.A.1:

I.A.1 USDOE is responsible for activities which include, but are not limited to, the overall management and operation of the Facility.

BNI is identified as a Permittee for activities subject to the Conditions of this Permit where its agents, employees, or subcontractors have operational and/or management responsibilities and control.

CHPRC is identified as a Permittee for activities subject to the Conditions of this Permit where its agents, employees, or subcontractors have operational and/or management responsibilities and control.

~~MSA is identified as a Permittee for activities subject to the Conditions of this Permit where its agents, employees, or subcontractors have operational and/or management responsibilities and control.~~

PNNL is identified as a Permittee for activities subject to the Conditions of this Permit where its agents, employees, or subcontractors have operational and/or management responsibilities and control.

WCH is identified as a Permittee for activities subject to the Conditions of this Permit where its agents, employees, or subcontractors have operational and/or management responsibilities and control.

WRPS is identified as a Permittee for activities subject to the Conditions of this Permit where its agents, employees, or subcontractors have operational and/or management responsibilities and control.

WAC 173-303-830 Modification Class [1 2]	Class 1	Class 1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1
Enter wording of WAC 173-303-830, Appendix I Modification citation: The Mission Support Alliance contractor was mistakenly referred to as a permittee. Mission Support Alliance is contracted by the DOE to provide infrastructure services to DOE and other Hanford contractors. The subject contractor does not meet the WAC 173-303 definition of an operator and therefore should not be referred to as a permittee. Mission Support Alliance is not identified as an owner or operator on any of the Hanford Facility TSD unit Permit Application Part A Forms. Also, Mission Support Alliance contractual workscope does not include operation and/or management of Hanford TSD units.

Modification Approved: ☐ Yes ☐ No (state reason for denial)
Reason for denial:

Reviewed by Ecology:

R. R. Skinnarland Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Permit Revision 8C	**Part II, General Facility Conditions**

Description of Modification:
Section II.F.2.d:

II.F.2.d For wells subject to this Permit, the Permittees will achieve full compliance with Chapter 173-160 WAC and Chapter 18.104 RCW by replacing non-compliant wells subject to the permit with new wells under the schedule in HFFACO Milestone M-24. ~~consistent with a rolling five (5) year schedule agreed to by Ecology and the Permittees. This process will be completed by the year 2012.~~

WAC 173-303-830 Modification Class [1 2]	Class 1	Class '1	Class 2	Class 3
Please mark the Modification Class:		X		

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.5.a
Enter wording of WAC 173-303-830, Appendix I Modification citation: Changes in interim compliance dates, with prior approval of the director. These changes are needed to maintain consistency between the permit and the HFFACO M-24 milestone.

Modification Approved: ☐ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology: R. R. Skinnarland Date

Remove and Replace the Following Sections:

Remove Permit Revision 8C, dated September 30, 2010 and replace with Permit Revision 8C, dated December 31, 2012.

Hanford Facility
Resource Conservation and Recovery Act Permit, Dangerous Waste Portion

Revision 8C

For the Treatment, Storage, and Disposal of Dangerous Waste

Washington State Department of Ecology
Nuclear Waste Program

December 31, 2012

For additional copies of this permit contact:

Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354-1670
509-372-7950

The Department of Ecology is an equal-opportunity agency and does not discriminate on the basis of race, creed, color disability, age, religion, national origin, sex, marital status, disabled-veteran status, Vietnam-era veteran status or sexual orientation.

For more information or if you have special accommodation needs, please contact the Nuclear Waste Program at (509) 372-7950.

Department of Ecology Headquarters telecommunications device for the deaf (TDD) number is: (360) 407-6006

DANGEROUS WASTE PORTION OF THE RESOURCE CONSERVATION AND RECOVERY ACT PERMIT FOR THE TREATMENT, STORAGE, AND DISPOSAL OF DANGEROUS WASTE

Washington State Department of Ecology
Nuclear Waste Program
3100 Port of Benton Boulevard
Richland, Washington 99354
Telephone: 509-372-7950

Issued in accordance with the applicable provisions of the Hazardous Waste Management Act, Chapter 70.105 Revised Code of Washington (RCW), and the regulations promulgated there under in Chapter 173-303 Washington Administrative Code (WAC).

ISSUED TO:

United States Department of Energy
Richland Operations Office
(Owner/Operator)
P.O. Box 550, MSIN A7-50
Richland, Washington 99352
Telephone: (509) 376-7395

CH2MHILL Plateau Remediation Company
(Co-operator)
P.O. Box 1600, MSIN H7-30
Richland, Washington 99352
Telephone: (509) 376-0556

Washington Closure Hanford, LLC
(Co-operator)
2620 Fermi Avenue, MSIN H4-24
Richland, Washington 99354
Telephone: (509) 372-9951

Pacific Northwest National Laboratory
(Co-operator)
P.O. Box 999, MSIN K1-46
Richland, Washington 99352
Telephone: (509) 375-5911

United States Department of Energy
Office of River Protection
(Owner/Operator)
P.O. Box 450, MSIN H6-60
Richland, Washington 99352
Telephone: (509) 372-3062

Bechtel National, Inc.
(Co-Operator)
2435 Stevens Center Place MSIN H4-02
Richland, Washington 99354
Telephone: (509) 371-2335

Washington River Protection Solutions, LLC
(Co-operator)
P.O. Box 1500, MSIN H6-63
Richland, Washington 99352
Telephone: (509) 372-9138

This Permit as modified on October 22, 2007, will remain in effect until reissuance of the September 27, 2004 Permit, unless revoked and reissued under WAC 173-303-830(3), terminated under WAC 173-303-830(5), or continued in accordance with WAC 173-303-806(7).

ISSUED BY:
WASHINGTON STATE DEPARTMENT OF ECOLOGY

_____ Date: 10/17/07

Jane A. Hedges, Program Manager
Nuclear Waste Program, Department of Ecology

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List of Attachments

The following listed documents are attached in their entirety. However, only those portions of the attachments specified in Parts I through VI are enforceable conditions of this Permit and subject to the permit modification requirements of Permit Condition I.C.3. Changes to portions of the attachments, which are not subject to the permit modification process, will be addressed in accordance with Permit Conditions I.E.8, I.E.11, I.E.13, I.E.15, through I.E.20, and I.E.22. Ecology has, as deemed necessary, modified specific language in these attachments. These modifications are described in the conditions (Parts I through VI), and thereby supersede the language of the attachment.

Attachment 1	Hanford Federal Facility Agreement and Consent Order, (as amended) http://www.hanford.gov/tpa/coverpg.htm
Attachment 2	Hanford Facility Legal Description, from Class [1]1 modification, dated January 7, 1999
Attachment 3	Security, dated September 30, 2010
Attachment 4	*Hanford Emergency Management Plan*, DOE/RL-94-02 Revision 2, as amended and approved modifications
Attachment 5	Hanford Facility Personnel Training Program, dated September 30, 2010
Attachment 6	Reports and Records, dated September 30, 2010
Attachment 7	Policy on Remediation of Existing Wells and Acceptance Criteria for RCRA and CERCLA, June 1990
Attachment 8	Hanford Well Maintenance and Inspection Plan, BHI-01265, Revision 0, May 1999
Attachment 9	Permit Applicability Matrix, dated September 30, 2010
Attachment 10	Purgewater Management Plan, July 1990

Introduction

Where information regarding treatment, management, and disposal of the radioactive source, byproduct material, special nuclear material (as defined by the Atomic Energy Act of 1954, as amended) and/or the radionuclide component of mixed waste has been incorporated into this permit, it is not incorporated for the purpose of regulating the radiation hazards of such components under the authority of this permit or Chapter 70.105 RCW.

Pursuant to Chapter 70.105 RCW, the Hazardous Waste Management Act (HWMA) of 1976, as amended, Chapter 70.105D RCW, the Model Toxics Control Act (MTCA), and regulations promulgated there under by the Washington State Department of Ecology (hereafter called Ecology), codified in Chapter 173-303 Washington Administrative Code (WAC), Dangerous Waste Regulations, a Dangerous Waste Permit is issued to the United States Department of Energy (USDOE) - Richland Operations Office (RL) and Office of River Protection (ORP) [owner/operator], and its contractors [co-operators], Bechtel National, Incorporated (BNI), CH2MHILL Plateau Remediation Company (CHPRC), Pacific Northwest National Laboratory (PNNL), Washington Closure Hanford, LLC (WCH), and Washington River Protection Solutions, LLC (WRPS) and hereafter called the Permittees, for the treatment, storage, and disposal of dangerous waste at the Hanford Facility.

This Dangerous Waste Permit, issued in conjunction with the United States Environmental Protection Agency's (hereafter called EPA) Hazardous and Solid Waste Amendments Portion of the Resource Conservation and Recovery Act (RCRA) Permit for the Treatment, Storage, and Disposal (TSD) of Hazardous Waste (HSWA Permit), constitutes the RCRA Permit for the Hanford Facility. Use of the term "Permit" within the Dangerous Waste Permit will refer to the Dangerous Waste Permit, while use of the term "Permit" within the HSWA Permit, will refer to the HSWA Permit. Use of the same term in both the Dangerous Waste Permit and the HSWA Permit, will have the standard meaning associated with the activities addressed by the permit in which the term is used. Such meanings will prevail, except where specifically stated otherwise.

The Permittees will comply with all terms and conditions set forth in this Permit and those portions of the Attachments that have been specifically incorporated into this Permit. When the Permit and the Attachments (except Permit Attachment 1) conflict, the wording of the Permit will prevail. The Permit is intended to be consistent with the terms and conditions of the Hanford Federal Facility Agreement and Consent Order (HFFACO, Permit Attachment 1). The Permittees will also comply with all applicable state regulations, including Chapter 173-303 WAC.

Applicable state regulations are those which are in effect on the date of issuance, or as specified in subsequent modifications of this Permit. In addition, applicable state regulations include any self-implementing statutory provisions and related regulations which, according to the requirements of the HWMA, as amended, or other law(s), are automatically applicable to the Permittees' dangerous waste management activities, notwithstanding the conditions of this Permit.

This Permit is based upon the Administrative Record, as required by WAC 173-303-840. The Permittees' failure in the application, or during the Permit issuance process, to fully disclose all relevant facts, or the Permittees' misrepresentation of any relevant facts at any time, will be grounds for the termination or modification of this Permit and/or initiation of an enforcement action, including criminal proceedings. The Permittees will inform Ecology of any deviation from the Permit conditions, or changes in the information on which the application is based, which would affect either the Permittees' ability to comply, or actual compliance with the applicable regulations or the Permit conditions, or which alters any condition of this Permit in any way.

Ecology will enforce all conditions of this Permit for which the State of Washington is authorized, or which are "state-only" provisions (i.e., conditions broader in scope or more stringent than the federal RCRA program). Any challenges of any Permit condition may be appealed in accordance with WAC 173-303-845. In the event that any Permit condition is challenged by any Permittee under WAC 173-303-845, Ecology may stay any such Permit condition as it pertains to all Permittees, in accordance with the same terms of any stay it grants to the challenging Permittee. If such a stay is granted, it will constitute a "stay by the issuing agency" within the meaning of RCW 43.21B.320(1).

This Permit has been developed to allow a step-wise permitting process of the Hanford Facility to ensure the proper implementation of the HFFACO. In order to accomplish this, this Permit consists of six (6) parts.

Part I, Standard Conditions, contains conditions which are similar to those appearing in all dangerous waste permits.

Part II, General Facility Conditions, combines typical dangerous waste permit conditions with those conditions intended to address issues specific to the Hanford Facility. Where appropriate, the general facility conditions apply to all final status dangerous waste management activities at the Facility. Where appropriate, the general facility conditions also address dangerous waste management activities which may not be directly associated with distinct TSD units, or which may be associated with many TSD units (i.e., spill reporting, training, contingency planning, etc.). Part II also includes conditions that address corrective action at solid waste management units and areas of concern.

Part III, Unit-Specific Conditions for Operating Units, contains those Permit requirements that apply to each individual TSD unit operating under final status. Conditions for each TSD unit are found in a chapter dedicated to that TSD unit. These unit-specific chapters contain references to Standard Conditions (Part I) and General Conditions (Part II), as well as additional requirements which are intended to ensure that each TSD unit is operated in an efficient and environmentally protective manner. Additional requirements may also be added when an operating unit ceases operations and undergoes closure.

Part IV, Unit-Specific Conditions for Corrective Action, contains those permit requirements which apply to specific RPP units that are undergoing corrective action under the HFFACO. RPP units may include solid waste management units and other areas of concern (i.e., releases that are not at solid waste management units and do not constitute a solid waste management unit) that are undergoing corrective action. For The Comprehensive Environmental Response, Conservation, and Liability Act (CERCLA) and RCRA past practice (RPP) units identified in the HFFACO, the corrective action conditions are structured around continued coordination with, and reliance on, the investigation and cleanup requirements established under the HFFACO. For TSD units identified in the HFFACO, the corrective action conditions contemplate use of closure and post-closure processes to satisfy corrective action.

Part V, Unit-Specific Conditions for Units Undergoing Closure, contains those requirements which apply to those specific TSD units, included in this part, that are undergoing closure. In accordance with Section 5.3 of the Action Plan of the HFFACO, all TSD units that undergo closure, irrespective of permit status, will be closed pursuant to the authorized State Dangerous Waste Program in accordance with WAC 173-303-610. Requirements for each TSD unit undergoing closure are found in a chapter dedicated to that TSD unit. These unit-specific chapters contain references to Standard Conditions (Part I) and General Conditions (Part II), as well as additional requirements which are intended to ensure that each TSD unit is closed in an efficient and environmentally protective manner.

Part VI, Unit-Specific Conditions for Units in Post-Closure, contains those requirements which apply to those specific units in this part that have completed modified or landfill closure requirements, and now only need to meet Post-Closure Standards. As set forth in Section 5.3 of the Action Plan of the HFFACO, certain TSD units will be permitted for post-closure care pursuant to the authorized State Dangerous Waste Program (173-303 WAC) and the Hazardous and Solid Waste Amendments. Requirements for each unit undergoing post-closure care are found in a chapter, within this part, dedicated to that unit. These unit specific chapters may contain references to Standard Conditions (Part I) and General Conditions (Part II), as well as the unit specific conditions, all of which are intended to ensure the unit is managed in an efficient, environmentally protective manner.

Unit Status Table

PERMIT REVISION	REVISION DATE	UNITS INCORPORATED
Permit Revision 0	8/29/94	616 NDWSF, 305-B Storage Facility, 183-H SEB, 300 ASE, 2727-S, NRDWSF
Permit Revision 1	4/28/95	Simulated High-Level Waste Slurry, 218-E-9 Borrow Pit Demo Site, 200 W Area Ash Pit Demo Site, 2101-M Pond, 216-B-3 Expansion Ponds
Permit Revision 2	8/29/95	Hanford Patrol Academy Demolition Site, 105-DR Large Sodium Fire Facility, 304 Concretion Facility
Permit Revision 3	11/25/96	PUREX Storage Tunnels, 4843 Alkali Metal Storage Facility, 3718-F Alkali Metal Treatment & Storage Facility, 303-K Storage Facility, 300 APT
Permit Revision 4	1/28/98	LERF & 200 Area ETF, 242-A Evaporator, 325 HWTUs
Permit Revision 5	5/18/99	100 D Ponds, 1301-N & 1325-Liquid Waste Disposal Facility, 1324-N Surface Impoundment, 1324-NA Percolation Pond
Permit Revision 6	3/28/00	Permit Condition II.Y, Corrective Action
Permit Revision 7	2/27/01	Waste Treatment & Immobilization Plant, 300 Area WATS
Permit Revision 8	9/23/04	No new units, modification updates
Permit Revision 8A	3/6/06	Integrated Disposal Facility
Permit Revision 8B	1/2007	331-C Storage Unit, PFP Treatment Unit, 241-Z Treatment & Storage Tanks, 303-M Oxide Facility
Permit Revision 8C	8/2007	400 Area Waste Management Unit, 224-T TRUSAF

UNIT	Permit Revision		Comments/History
	Incorporated	Retired	
PART III, OPERATING UNITS			
616 Non-Radioactive Dangerous Waste Storage Facility	Rev. 6	Rev. 7	Closed, 9/5/01
242-A Evaporator	Rev. 4		
305-B Storage Facility	Rev. 0		Closed, 7/2/07
325 Hazardous Waste Treatment Units	Rev. 4		RLWT procedural closure, 9/04
LERF & 200 Area ETF	Rev. 4		
PUREX Storage Tunnels	Rev. 3		
Waste Treatment and Immobilization Plant	Rev. 7		Permitted unit under construction
Integrated Disposal Facility	Rev. 8A		
331-C Storage Unit	Rev. 8B		
400 Area Waste Management Unit	Rev. 8C		
PART IV, CORRECTIVE ACTION			
100-NR-1 Operable Unit	Rev. 6		
100-NR-2 Operable Unit	Rev. 6	Rev. 8C	Retired, 9/30/09
PART V, UNDERGOING CLOSURE UNITS			
100-D Ponds	Rev. 5	Rev. 6	Closed, 8/9/99
105 DR Large Sodium Fire Facility	Rev. 2	Rev. 6	Closed, 7/1/04
1301-N Liquid Waste Disposal Facility	Rev. 5		
1324-N Surface Impoundment	Rev. 5		
1324-NA Percolation Pond	Rev. 5		
1325-N Liquid Waste Disposal Facility	Rev. 5		
200 West Area Ash Pit Demo Site	Rev. 1	Rev. 6	Closed, 11/28/95
2101-M Pond	Rev. 1	Rev. 6	Closed, 11/28/95
216-B-3 Expansion Ponds	Rev. 1	Rev. 6	Closed, 7/31/95
218-E-8 Borrow Demolition Site	Rev. 1	Rev. 6	Closed, 11/28/95
2727-S Storage Facility	Rev. 0	Rev. 6	Closed, 7/31/95
300 Area Solvent Evaporator	Rev. 0	Rev. 6	Closed, 7/31/95
300 Area Waste Acid Treatment System	Rev. 6	Rev. 8B	Closed, 1/21/05
303-K Storage Facility	Rev. 4	Rev. 6	Closed, 7/22/02
304 Concretion Facility	Rev. 2	Rev. 6	Closed, 1/21/96
311 Tanks (includes 300 Area WATS)	Rev. 6	Rev. 7	Closed, 5/20/02
3718-F Alkali Metal Treatment /Storage	Rev. 3	Rev. 6	Closed, 8/4/98
4843 Alkali Metal Storage Facility	Rev. 3	Rev. 6	Closed, 4/14/97
Hanford Patrol Academy Demo Site	Rev. 2	Rev. 6	Closed, 11/28/95
Simulated High Level Waste Slurry	Rev. 1	Rev. 6	Closed, 9/6/95

UNIT	Permit Revision		Comments/History
	Incorporated	Retired	
PFP Treatment Unit (HA-20MB)	Rev. 8B	Rev. 8B	Closed 2/8/05
241-Z Treatment and Storage Tanks	Rev. 8B	Rev. 8B	Closed 2/22/07
303-M Oxide Facility	Rev. 8B	Rev. 8B	Closed 6/15/06
224-T Transuranic Waste Storage and Assay Facility	Rev. 8C	Rev. 8C	Closed 11/12/08
PART VI, POSTCLOSURE UNITS			
183-H Solar Evaporation Basin	Rev 4		
300 Area Process Trenches	Rev 3		
PROCEDURALLY CLOSED			
216-U-12 Crib	N/A	N/A	Closed 7/19/07
221-T Test Facility	N/A	N/A	Closed 2/22/99
2727-WA SRE Sodium Storage Bldg	N/A	N/A	Closed 2/22/99
324 Pilot Plant	N/A	N/A	Closed 6/9/97
332 Storage Facility	N/A	N/A	Closed 4/21/97
437 Maintenance and Storage Facility	N/A	N/A	Closed 9/11/03
Biological Treatment Test Facilities	N/A	N/A	Closed12/10/96
Physical/Chemical Treatment Test Facilities	N/A	N/A	Closed 5/13/96
Sodium Storage/Sodium Reaction	N/A	N/A	Closed 9/17/03
Thermal Treatment Test Facilities	N/A	N/A	Closed 5/13/96
TO BE INCORPORATED			
1706-KE Waste Treatment System			
207-A South Retention Basin			
216-A-10 Crib			
216-A-29 Ditch			
216-A-36B Crib			
216-A-37-1 Crib			
216-B-3 Main Pond			
216-B-63 Trench			
216-S-10 Pond & Ditch			
222-S Dangerous & Mixed Waste TSD Unit			
241-CX Tank System			
600 Area Purgewater Storage and Treatment Facility			
Central Waste Complex			
Contact Handled Transuranic Mixed Waste Packaging and Interim Storage Facility			
DST System/204-AR Waste Unloading Station			
Grout Treatment Facility			
Hexone Storage & Treatment Facility			
IHLW Interim Storage/Canister Storage Building			
Low-Level Burial Grounds			
Nonradioactive Dangerous Waste Landfill			
Single-Shell Tank System			
T Plant Complex			
Waste Encapsulation and Storage Facility			
Waste Receiving and Processing Facility			
TRANSITION UNDER HFFACO ACTION PLAN, SECTION 8 (Will not be incorporated into Permit)			
B Plant Complex			
PUREX Plant			

Definitions

Except with respect to those terms specifically defined below, all definitions contained in the HFFACO, May 1989, as amended, and in WAC 173-303-040 and other portions of Chapter 173-303 WAC are hereby incorporated, in their entirety, by reference into this Permit. For terms defined in both Chapter 173-303 WAC and the HFFACO, the definitions contained in Chapter 173-303 WAC will control within this Permit. Nonetheless, this Permit is intended to be consistent with the HFFACO.

Where terms are not defined in the regulations, the Permit, or the HFFACO, a standard dictionary reference, or the generally accepted scientific or industrial meaning of the terms will define the meaning associated with such terms.

As used in this Permit, words in the masculine gender also include the feminine and neuter genders, words in the singular include the plural, and words in the plural include the singular.

The following definitions apply throughout this Permit:

The term "**Area of Concern**" means any area of the Facility where a release of dangerous waste or dangerous constituents has occurred, is occurring, is suspected to have occurred, or threatens to occur.

The term "**Contractor(s)**" means, unless specifically identified otherwise in this Permit, or Attachments, Bechtel National, Inc. (BNI), CH2M HILL Plateau Remediation Company, Inc. (CHPRC), Pacific Northwest National Laboratory (PNNL), Washington Closure Hanford, LLC (WCH), and Washington River Protection Solutions, LLC (WRPS).

The term "**Critical Systems**" as applied to determining whether a Permit modification is required, means those specific portions of a TSD unit's structure, or equipment, whose failure could lead to the release of dangerous waste into the environment, and/or systems which include processes which treat, transfer, store, or dispose of regulated wastes. A list identifying the critical systems of a specific TSD unit may be developed and included in Part III, V, and/or VI of this Permit. In developing a critical system list, or in the absence of a critical system list, WAC 173-303-830 Modifications will be considered.

The term "**Dangerous Constituent**" means any constituent identified in WAC 173-303-9905 or 40 CFR Part 264 Appendix IX, any constituent which caused a waste to be listed or designated as dangerous under Chapter 173-303 WAC, and any constituents within the meaning of hazardous substance at RCW 70.105D.020(7).

The term "**Dangerous Waste**" means those solid wastes designated under Chapter 173-303 WAC as dangerous or extremely hazardous waste. As used in the Permit, the phrase "dangerous waste" will refer to the full universe of wastes regulated by Chapter 70.105 RCW and Chapter 173-303 WAC (including dangerous waste, hazardous waste, extremely hazardous waste, mixed waste, and acutely hazardous waste).

The term "**Days**" means calendar days, unless specifically identified otherwise. Any submittal, notification, or recordkeeping requirement that would be due, under the Conditions of this Permit, on a Saturday, Sunday, or federal, or state holiday, will be due on the following business day, unless specifically stated otherwise in the Permit.

The term "**Director**" means the Director of the Washington State Department of Ecology, or a designated representative. The Program Manager of the Nuclear Waste Program (with the address as specified on page one [1] of this Permit) is a duly authorized and designated representative of the Director for purposes of this Permit.

The term "**Ecology**" means the Washington State Department of Ecology (with the address as specified on page one [1] of this Permit).

The term "**Facility**" means all contiguous land, structures, other appurtenances, and improvements on the land used for recycling, reusing, reclaiming, transferring, storing, treating, or disposing of dangerous waste. The legal and physical description of the Facility is set forth in Permit Attachment 2.

The term "**Facility**" for the purposes of corrective action under Permit Condition II.Y, means all contiguous property under the control of the Permittees and all property within the meaning of "facility" at RCW 70.105D.020(3) as set forth in Permit Attachment 2.

The term "**HFFACO**" means the Hanford Federal Facility Agreement and Consent Order, as amended (Commonly referred to as Tri-Party Agreement [TPA]).

The term "**Permittees**" means the United States Department of Energy (owner/operator), Bechtel National, Inc. (Co-operator), CH2M HILL Plateau Remediation Company (Co-operator), Pacific Northwest National Laboratory (Co-operator), Washington Closure Hanford, LLC (Co-operator), Washington River Protection Solutions, LLC.

The term "**Permittees**" for purposes of corrective action under Permit Condition II.Y means only the United States Department of Energy (owner/operator).

The term "**Raw Data**" means the initial value of analog or digital instrument output, and/or manually recorded values obtained from measurement tools or personal observation. These values are converted into reportable data (e.g., concentration, percent moisture) via automated procedures and/or manual calculations.

The term "**RCRA Permit**" means the Dangerous Waste Portion of the RCRA Permit for the Treatment, Storage, and Disposal of Dangerous Waste (Dangerous Waste Permit) issued by the Washington State Department of Ecology, pursuant to Chapter 70.105 RCW and Chapter 173-303 WAC, coupled with the HSWA Portion of the RCRA Permit for the Treatment, Storage, and Disposal of Hazardous Waste (HSWA Permit) issued by EPA, Region 10, pursuant to 42 U.S.C. 6901 et seq. and 40 CFR Parts 124 and 270.

The term "**Reasonable Times**" means normal business hours; hours during which production, treatment, storage, construction, disposal, or discharge occurs, or times when Ecology suspects a violation requiring immediate inspection.

The term "**Release**" means any intentional or unintentional spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of dangerous constituents into the environment and includes the abandonment or discarding of barrels, containers, and other receptacles containing dangerous waste or dangerous constituents, and includes any releases within the meaning of release at RCW 70.105D.020(20).

The term "**Significant Discrepancy**" in regard to a manifest or shipping paper, means a discrepancy between the quantity or type of dangerous waste designated on the manifest, or shipping paper, and the quantity or type of dangerous waste a TSD unit actually receives. A significant discrepancy in quantity is a variation greater than ten (10) percent in weight for bulk quantities (e.g., tanker trucks, railroad tank cars, etc.), or any variation in piece count for nonbulk quantities (i.e., any missing container or package would be a significant discrepancy). A significant discrepancy in type is an obvious physical or chemical difference which can be discovered by inspection or waste analysis (e.g., waste solvent substituted for waste acid).

The term "**Solid Waste Management Unit (SWMU)**" means any discernible location at the Facility where solid wastes have been placed at any time, irrespective of whether the location was intended for the management of solid or dangerous waste, and includes any area at the Facility at which solid wastes have been routinely and systematically released (for example through spills), and includes dangerous waste treatment, storage, and disposal units.

The term "**Unit**" **or** "**TSD unit**", as used in Parts I through VI of this Permit, means the contiguous area of land on or in which dangerous waste is placed, or the largest area in which there is a significant likelihood of mixing dangerous waste constituents in the same area. A TSD unit, for purposes of this Permit, is a subgroup of the Facility which has been identified in a Hanford Facility Dangerous Waste Part A Form.

Acronyms

ALARA	As Low As Reasonably Achievable
AMSF	Alkali Metal Storage Facility
APDS	Ash Pit Demolition Site
APP	Used to Denote Appendix Page Numbers
APT	Area Process Trenches
ARAR	Applicable, Relevant, and Appropriate Requirements
BNI	Bechtel National, Inc
BPDS	Borrow Pit Demolition Site
CD/RR	Chemical Disposal/Recycle Request
CERCLA	Comprehensive Environmental Response Compensation and Liability Act of 1980 (as Amended by the Superfund Reauthorization Act of 1986)
CFR	Code of Federal Regulations
CHPRC	CH2M HILL Plateau Remediation Company
CIP	Construction Inspection Plan
CLARC	Cleanup Levels and Risk Calculations
CLP	Contract Laboratory Program
COC	Chemical Contaminants of Concern
CPP	CERCLA Past Practice
USDOE-RL	U.S. Department of Energy, Richland Operations Office
USDOE-ORP	U.S. Department of Energy, Office of River Protection
DQO	Data Quality Objective
DSC	Differential Scanning Colorimetry
EC	Emergency Coordinator
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
ERA	Expedited Response Action
ETF	200 Area Effluent Treatment Facility
HFFACO	Hanford Federal Facility Agreement and Consent Order
GW	Ground Water
HPADS	Hanford Patrol Academy Demolition Site
HSWA	Hazardous and Solid Waste Amendments of 1984
HWMA	Hazardous Waste Management Act
ID	Identification
IRM	Interim Remedial Measure
LDR	Land Disposal Restrictions
LERF	Liquid Effluent Retention Facility
LSFF	105-DR Large Sodium Fire Facility
MTCA	Model Toxics Control Act

OSWER	Office of Solid Waste and Emergency Response
PNNL	Pacific Northwest National Laboratory
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RCRA	Resource Conservation and Recovery Act of 1976
RCW	Revised Code of Washington
ROD	Record of Decision
RPD	Relative Percent Difference
RPP	RCRA Past Practice
SAP	Sampling and Analysis Plan
SARA	Superfund Amendments and Reauthorization Act of 1986
SCD	Security Control Devices
SHLWS	Simulated High Level Waste Slurry
SOP	Standard Operating Procedure
SWMU	Solid Waste Management Unit
TCLP	Toxicity Characteristic Leaching Procedure
TSD	Treatment, Storage, and/or Disposal
USDOE	United States Department of Energy
U.S.C.	United States Code
WAC	Washington Administrative Code
WAP	Waste Analysis Plan
WCH	Washington Closure Hanford, LLC
WRPS	Washington River Protection Solutions, LLC
WTP	Waste Treatment and Immobilization Plant
183-H	183-H Solar Evaporation Basins
242-A	242-A Evaporator
300 APT	300 Area Process Trenches
300 ASE	300 Area Solar Evaporator
303-K	303-K Storage Facility
305-B	305-B Storage Facility
325 HWTUs	325 Hazardous Waste Treatment Units
616-NRDWSF	616 Nonradioactive Dangerous Waste Storage Facility

PART I STANDARD CONDITIONS

I.A EFFECT OF PERMIT

The Permittees are authorized to treat, store, and dispose of dangerous waste in accordance with the Conditions of this Permit and in accordance with the applicable provisions of Chapter 173-303 WAC (including provisions of the Chapter as they have been applied in the HFFACO). Any treatment, storage, or disposal of dangerous waste by the Permittees at the Facility that is not authorized by this Permit, or by WAC 173-303-400 (including provisions of this regulation as they have been applied in the HFFACO), for those TSD units not subject to this Permit, and for which a Permit is required by Chapter 173-303 WAC, is prohibited.

TSD units operating or closing under interim status will maintain interim status until that TSD unit is incorporated into Part III, V, and/or VI of this Permit, or until interim status is terminated under WAC 173-303-805(8). Interim status units will be incorporated into this Permit through the Permit modification process.

The Conditions of this Permit will be applied to the Facility as defined by the Permit Applicability Matrix (Permit Attachment 9).

I.A.1 USDOE is responsible for activities which include, but are not limited to, the overall management and operation of the Facility.

BNI is identified as a Permittee for activities subject to the Conditions of this Permit where its agents, employees, or subcontractors have operational and/or management responsibilities and control.

CHPRC is identified as a Permittee for activities subject to the Conditions of this Permit where its agents, employees, or subcontractors have operational and/or management responsibilities and control.

PNNL is identified as a Permittee for activities subject to the Conditions of this Permit where its agents, employees, or subcontractors have operational and/or management responsibilities and control.

WCH is identified as a Permittee for activities subject to the Conditions of this Permit where its agents, employees, or subcontractors have operational and/or management responsibilities and control.

WRPS is identified as a Permittee for activities subject to the Conditions of this Permit where its agents, employees, or subcontractors have operational and/or management responsibilities and control.

I.A.2 Coordination with the HFFACO

Each TSD unit will have an application for a final status Permit or closure/post-closure plan submitted to Ecology in accordance with the schedules identified in the HFFACO Milestone M-20-00 or in accordance with WAC 173-303-830. After completion of the Permit application or closure/post-closure plan review, a final Permit decision will be made pursuant to WAC 173-303-840. Specific Conditions for each TSD unit will be incorporated into this Permit in accordance with the Class 3 Permit modification procedure identified in Permit Condition I.C.3.

I.B PERSONAL AND PROPERTY RIGHTS

This Permit does not convey property rights of any sort, or any exclusive privilege; nor does it authorize any injury to persons or property, or any invasion of other private rights, or any violation of federal, state, or local laws or regulations.

I.C PERMIT ACTIONS

I.C.1 Modification, Revocation, Reissuance, or Termination

This Permit may be modified, revoked and reissued, or terminated by Ecology for cause per WAC 173-303-810(7) as specified in WAC 173-303-830(3), (4), and (5).

I.C.2 Filing of a Request

The filing of a request for a Permit modification, or revocation and reissuance, or termination, or a notification of planned changes, or anticipated noncompliance on the part of the Permittees, will not stay any Permit condition [WAC 173-303-810(7)]except as provided in WAC 173-303-810(2) under an emergency permit.

I.C.3 Modifications

I.C.3.a Except as provided otherwise by specific language in this Permit, the Permit modification procedures of WAC 173-303-830(2), (3), and (4) will apply to modifications or changes in design or operation of the Facility, or any modification or change in dangerous waste management practices covered by this Permit.

I.C.3.b As an exception, the Permittees will provide notifications to Ecology required by WAC 173-303-830(4)(a)(i)(A) on a quarterly basis. Each quarterly notification will be submitted within ten (10) days of the end of the quarter, and provide the required information for all such modification s put into effect during that reporting period.

I.C.3.c Quarterly reporting periods will be based upon the state Fiscal Year. For notifications required by the Permittees to persons on the facility mailing list described in WAC 173-303-830(4)(a)(i)(B), -830(4)(b)(ii), -830(4)(c)(ii), and -830(4)(e)(ii)(C), use of appropriate HFFACO Community Relations Plan publications and/or list servers for public involvement satisfy the notification requirements.

I.D SEVERABILITY

I.D.1 Effect of Invalidation

The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance is contested and/or held invalid, the application of such provision to other circumstances and the remainder of this Permit will not be affected thereby. Invalidation of any state statutory or regulatory provision which forms the basis for any Condition of this Permit does not affect the validity of any other state statutory or regulatory basis for said Condition.

I.D.2 Final Resolution

In the event that a Condition of this Permit is stayed for any reason, the Permittees will continue to comply with the related applicable and relevant interim status standards in WAC 173-303-400 until final resolution of the stayed Condition, unless Ecology determines compliance with the related applicable and relevant interim status standards would be technologically incompatible with compliance with other Conditions of this Permit, which have not been stayed, or unless the HFFACO authorizes an alternative action, in which case the Permittees will comply with the HFFACO.

I.E DUTIES AND REQUIREMENTS

I.E.1 Duty to Comply

The Permittees will comply with all Conditions of this Permit, except to the extent and for the duration such noncompliance is authorized by an emergency Permit issued under WAC 173-303-804. Any Permit noncompliance other than noncompliance authorized by

an emergency Permit constitutes a violation of Chapter 70.105 RCW, as amended, and is grounds for enforcement action, Permit termination, modification or revocation and reissuance of the Permit, and/or denial of a Permit renewal application.

I.E.2 Compliance Not Constituting Defense

Compliance with the terms of this Permit does not constitute a defense to any order issued or any action brought under Section 3007, 3008, 3013, or 7003 of RCRA (42 U.S.C. Sections 6927, 6928, 6934, and 6973), Section 104, 106(a) or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) [42 U.S.C. Sections 9604, 9606(a), and 9607], as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. 9601 et seq.), or any other federal, state, or local law governing protection of public health, or the environment; provided, however, that compliance with this Permit during its term constitutes compliance at those areas subject to this Permit for the purpose of enforcement with WAC 173-303-140, WAC 173-303-180, WAC 173-303-280 through -395, WAC 173-303-600 through -680, WAC 173-303-810, and WAC 173-303-830, except for Permit modification s and those requirements not included in the Permit that become effective by statute, or that are promulgated under 40 CFR Part 268 restricting the placement of dangerous waste in or on the land.

I.E.3 Duty to Reapply

If the Permittees wish to continue an activity regulated by this Permit after the expiration date of this Permit, the Permittees must apply for, and obtain a new Permit, in accordance with WAC 173-303-806(6).

I.E.4 Permit Expiration and Continuation

This Permit, and all Conditions herein, will remain in effect beyond the Permit's expiration date until the effective date of the new Permit, if the Permittees have submitted a timely, complete application for renewal per WAC 173-303-806 and, through no fault of the Permittees, Ecology has not made a final Permit determination as set forth in WAC 173-303-840.

I.E.5 Need to Halt or Reduce Activity Not a Defense

It will not be a defense in the case of an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the Conditions of this Permit.

I.E.6 Duty to Mitigate

In the event of noncompliance with the Permit, the Permittees will take all reasonable steps to minimize releases to the environment, and will carry out such measures as are reasonable to minimize or correct adverse impacts on human health and the environment.

I.E.7 Proper Operation and Maintenance

The Permittees will at all times properly operate and maintain all facilities and systems of treatment and control, which are installed or used by the Permittees, to achieve compliance with the Conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance/quality control procedures. This provision requires the operation of backup or auxiliary facilities, or similar systems only when necessary to achieve compliance with the Conditions of the Permit.

I.E.8 Duty to Provide Information

The Permittees will furnish to Ecology, within a reasonable time, any relevant information which Ecology may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittees will also furnish to Ecology, upon request, copies of records required to be kept by this Permit.

I.E.9 Inspection and Entry

The Permittees will allow Ecology, or authorized representatives, upon the presentation of Ecology credentials, to:

I.E.9.a During operating hours, and at all other reasonable times, enter and inspect the Facility or any unit or area within the Facility, where regulated activities are located or conducted, or where records must be kept under the Conditions of this Permit;

I.E.9.b Have access to, and copy, at reasonable times, any records that must be kept under the Conditions of this Permit;

I.E.9.c Inspect at reasonable times any portion of the Facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and,

I.E.9.d Sample or monitor, at reasonable times, for the purposes of assuring Permit compliance, or as otherwise authorized by state law, as amended, for substances or parameters at any location.

I.E.10 Monitoring and Records

I.E.10.a Samples and measurements taken by the Permittees for the purpose of monitoring required by this Permit will be representative of the monitored activity. Sampling methods will be in accordance with WAC 173-303-110 or 40 CFR 261, unless otherwise specified in this Permit, or agreed to in writing by Ecology. Analytical methods will be as specified in the most recently published test procedure of the documents cited in WAC 173-303-110(3)(a) through (h), unless otherwise specified in this Permit, or agreed to in writing by Ecology.

I.E.10.b The Permittees will retain at the TSD unit(s), or other locations approved by Ecology, as specified in Parts III, V, and/or VI of this Permit, records of monitoring information required for compliance with this Permit, including calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of reports and records required by this Permit, and records of data used to complete the application for this Permit for a period of at least ten (10) years from the date of the sample, measurement, report, or application, unless otherwise required for certain information by other Conditions of this Permit. This information may be retained on electronic media.

I.E.10.c The Permittees will retain at the Facility, or other approved location, records of all monitoring and maintenance records, copies of all reports and records required by this Permit, and records of all data used to complete the application for this Permit, which are not associated with a particular TSD unit, for a period of at least ten (10) years from the date of certification of completion of post-closure care, or corrective action for the Facility, whichever is later. This information may be retained on electronic media.

I.E.10.d The record retention period may be extended by request of Ecology at any time by notification, in writing, to the Permittees, and is automatically extended during the course of any unresolved enforcement action regarding this Facility to ten (10) years beyond the conclusion of the enforcement action.

I.E.10.e Records of monitoring information shall include:

I.E.10.e.i The date, exact place and time of sampling or measurements;

I.E.10.e.ii The individual who performed the sampling or measurements and their affiliation;

I.E.10.e.iii The dates the analyses were performed;

I.E.10.e.iv The individual(s) who performed the analyses and their affiliation;

I.E.10.e.v The analytical techniques or methods used; and,

I.E.10.e.vi The results of such analyses

I.E.11 Reporting Planned Changes

The Permittees will give notice to Ecology, as soon as possible, of any planned physical alterations, or additions to the Facility subject to this Permit. Such notice does not authorize any noncompliance with, or modification of, this Permit.

I.E.12 Certification of Construction or Modification

I.E.12.a The Permittees may not commence treatment, storage, or disposal of dangerous wastes in a new or modified portion of TSD units subject to this Permit until:

I.E.12.b The Permittees have submitted to Ecology, by certified mail, overnight express mail, or hand delivery, a letter signed by the Permittees, and a registered professional engineer, stating that the TSD unit has been constructed or modified in compliance with the Conditions of this Permit; and,

I.E.12.c Ecology has inspected the modified or newly constructed TSD unit, and finds that it is in compliance with the Conditions of this Permit; or

I.E.12.d Within fifteen (15) days of the date of receipt of the Permittees' letter, the Permittees have not received notice from Ecology of its intent to inspect, prior inspection is waived, and the Permittees may commence treatment, storage, and disposal of dangerous waste.

I.E.13 Anticipated Noncompliance

The Permittees will give at least thirty (30) days advance notice to Ecology of any planned changes in the Facility subject to this Permit, or planned activity which might result in noncompliance with Permit requirements.

If thirty (30) days advance notice is not possible, then the Permittees will give notice immediately after the Permittees become aware of the anticipated noncompliance. Such notice does not authorize any noncompliance with, or modification of, this Permit.

I.E.14 Transfer of Permits

I.E.14.a This Permit may be transferred to a new owner/operator only if it is modified, or revoked and reissued, pursuant to WAC 173-303-830(3)(b). Unit-specific portion may be transferred to a new Co-operator as a Class [1]1 modification with prior approval of the Department's director.

I.E.14.b Before transferring ownership or operation of the Facility during its operating life, the owner/operator will notify the new owner/operator in writing, of the requirements of WAC 173-303-290(2), -600 and -806, and this Permit.

I.E.15 Immediate Reporting

I.E.15.a The Permittees will verbally report to Ecology any release of dangerous waste or hazardous substances, or any noncompliance with the Permit which may endanger human

health or the environment. Any such information will be reported immediately after the Permittees become aware of the circumstances.

I.E.15.b The immediate verbal report will contain all the information needed to determine the nature and extent of any threat to human health and the environment, including the following:

I.E.15.b.i Name, address, and telephone number of the Permittee responsible for the release or noncompliant activity;

I.E.15.b.ii Name, location, and telephone number of the unit at which the release occurred;

I.E.15.b.iii Date, time, and type of incident;

I.E.15.b.iv Name and quantity of material(s) involved;

I.E.15.b.v The extent of injuries, if any;

I.E.15.b.vi An assessment of actual or potential hazard to the environment and human health, where this is applicable;

I.E.15.b.vii Estimated quantity of released material that resulted from the incident; and,

I.E.15.b.viii Actions which have been undertaken to mitigate the occurrence.

I.E.15.c The Permittees will report, in accordance with Permit Conditions I.E.15.a and I.E.15.b, any information concerning the release, or unpermitted discharge, of any dangerous waste or hazardous substances that may cause an endangerment to drinking water supplies, or ground or surface waters, or of a release, or discharge of dangerous waste, or hazardous substances, or of a fire or explosion at the Facility, which may threaten human health or the environment. The description of the occurrence and its cause will include all information necessary to fully evaluate the situation and to develop an appropriate course of action.

I.E.15.d For any release or noncompliance not required to be reported to Ecology immediately, a brief account must be entered within two (2) working days, into the TSD Operating Record, for a TSD unit, or into the Facility Operating Record, inspection log, or separate spill log, for non-TSD units. This account must include: the time and date of the release, the location and cause of the release, the type and quantity of material released, and a brief description of any response actions taken or planned.

I.E.15.e All releases, regardless of location of release, or quantity of release, will be controlled and mitigated, if necessary, as required by WAC 173-303-145(3).

I.E.16 Written Reporting

Within fifteen (15) days after the time the Permittees become aware of the circumstances of any noncompliance with this Permit, which may endanger human health or the environment, the Permittees will provide to Ecology a written report. The written report will contain a description of the noncompliance and its cause (including the information provided in the verbal notification); the period of noncompliance including exact dates and times; the anticipated time noncompliance is expected to continue, if the noncompliance has not been corrected; corrective measures being undertaken to mitigate the situation, and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

I.E.17 Manifest Discrepancy Report

I.E.17.a For dangerous waste received from outside the Facility, whenever a significant discrepancy in a manifest is discovered, the Permittees will attempt to reconcile the

discrepancy. If not reconciled within fifteen (15) days of discovery, the Permittees will submit a letter report in accordance with WAC 173-303-370(4), including a copy of the applicable manifest or shipping paper, to Ecology.

I.E.17.b For dangerous waste which is being transported within the Facility (i.e., shipment of on-site generated dangerous waste), whenever a significant discrepancy in the shipping papers (see Permit Condition II.Q.1) is discovered, the Permittees will attempt to reconcile the discrepancy. If not reconciled within fifteen (15) days of discovery, the Permittees will note the discrepancy in the receiving unit's Operating Record.

I.E.18 Unmanifested Waste Report

The Permittees will follow the provisions of WAC 173-303-370 for the receipt of any dangerous waste shipment from off-site. The Permittees will also submit a report in accordance with WAC 173-303-390(1) to Ecology within fifteen (15) days of receipt of any unmanifested dangerous waste shipment received from off-site sources.

I.E.19 Other Noncompliance

The Permittees will report to Ecology all instances of noncompliance, not otherwise required to be reported elsewhere in this Permit, at the time the Annual Dangerous Waste Report is submitted.

I.E.20 Other Information

Whenever the Permittees become aware that they have failed to submit any relevant facts in a Permit application, closure plan, or post-closure plan, or submitted incorrect information in a Permit application, closure plan, or post-closure plan, or in any report to Ecology, the Permittees will promptly submit such facts or corrected information.

I.E.21 Reports, Notifications, and Submissions

All written reports, notifications or other submissions, which are required by this Permit to be sent, or given to the Director or Ecology, should be sent certified mail, overnight express mail, or hand delivered, to the current address and telephone number shown below. This address and telephone number may be subject to change.

Washington State Department of Ecology
Nuclear Waste Program
3100 Port of Benton Blvd
Richland, Washington 99354
Telephone: (509) 372-7950

Telephonic and oral reports/notifications also need to be provided to Ecology's Richland Office.

Ecology will give the Permittees written notice of a change in address or telephone number. It is the responsibility of the Permittees to ensure any required reports, notifications, or other submissions are transmitted to the addressee listed in this Condition. However, the Permittees will not be responsible for ensuring verbal and written correspondence reaches a new address or telephone number until after their receipt of Ecology's written notification.

I.E.22 Annual Report

The Permittees will comply with the annual reporting requirements of WAC 173-303-390(2)(a) through (e), and (g).

I.F SIGNATORY REQUIREMENT

All applications, reports, or information submitted to Ecology, which require certification, will be signed and certified in accordance with WAC 173-303-810(12) and (13). All other reports required by this Permit and other information requested by Ecology will be signed in accordance with WAC 173-303-810(12).

I.G CONFIDENTIAL INFORMATION

The Permittees may declare as confidential any information required to be submitted by this Permit, at the time of submission, in accordance with WAC 173-303-810(15).

I.H DOCUMENTS TO BE MAINTAINED AT FACILITY SITE

The Permittees will maintain at the Facility, or some other location approved by Ecology, the following documents and amendments, revisions, and modifications to these documents: (1) This Permit and all Attachments; and (2) The Hanford Facility Operating Record.

All dangerous waste Part B permit applications, post closure permit applications, and closure plan applications are maintained in the Administrative Record located at 2440 Stevens, Room 1101, Richland, WA.

Other approved locations: (1) 700 Area, (2) Locations within the City of Richland under control of one or more of the Permittees, (3) Administrative Record locations within the Stevens Center complex, (4) Consolidated Information Center at Washington State University, Tri-Cities. (5) Archived records at the National Archives and Records Administration (NARA), Pacific Alaska Region, 6125 Sand Point Way NE, Seattle, Washington, 98115-7999.

These documents will be maintained for ten (10) years after post-closure care or corrective action for the Facility, whichever is later, has been completed and certified as complete.

PART II GENERAL FACILITY CONDITIONS

II.A FACILITY CONTINGENCY PLAN

II.A.1 The Permittees will immediately carry out applicable provisions of the *Hanford Emergency Management Plan* as provided in Permit Attachment 4, pursuant to WAC 173-303-360(2), whenever there is an incident meeting the criteria of Permit Attachment 4, Section 4.2. Enforceable portions of Permit Attachment 4, *Hanford Emergency Management Plan* (DOE/RL-94-02) are identified in Permit Attachment 4, Appendix A.

II.A.2 The Permittees will comply with the requirements of WAC 173-303-350(4), as provided in the *Hanford Emergency Management Plan* (Permit Attachment 4). The *Hanford Emergency Management Plan* provides reference to the need for unit-specific contingency documentation. Unit-specific contingency documentation for Part III TSD units is included in Part III of this Permit. Unit-specific contingency documentation for Part V and VI TSD units required by this Permit condition is maintained in the Hanford Facility Operating Record, Unit-Specific files.

II.A.3 The *Permittees* will review and amend, if necessary, the applicable portions of the *Hanford Emergency Management Plan*, as provided in Permit Attachment 4, pursuant to WAC 173-303-350(5), and in accordance with the provisions of WAC 173-303-830(4). The Permittees will be able to demonstrate how Amendments to the applicable portions are controlled. The plan will be amended within a period of time agreed upon by Ecology.

II.A.4 The Permittees will comply with the requirements of WAC 173-303-350(3) and –360(1) concerning the emergency coordinator, except the names and home telephone numbers will be on file with the single point-of-contact, phone number (509) 373-3800 or 375-2400 (for PNNL units) as described in the *Hanford Emergency Management Plan*.

II.B PREPAREDNESS AND PREVENTION

II.B.1 The Permittees will equip the Facility with the equipment specified in WAC 173-303-340(1) as specified in the *Hanford Emergency Management Plan* (Permit Attachment 4). Unit-specific preparedness and prevention provisions are included in Parts III, V, and/or VI of this Permit.

II.B.2 The Permittees will test and maintain the equipment specified in Permit Condition II.B.1 as necessary to assure proper operation in the event of emergency.

II.B.3 The Permittees will maintain access to communications or alarms pursuant to WAC 173-303-340(2), as provided in the *Hanford Emergency Management Plan* (Permit Attachment 4) and unit-specific contingency plans.

II.B.4 The Permittees will comply with WAC 173-303-340(4) and WAC 173-303-355(1) pertaining to arrangements with local authorities.

II.B.5 Based on the arrangements with local authorities required by WAC 173-303-340(4) documented in Permit Attachment 4, Table 3-1, the Permittees will maintain the Memorandums of Understanding to comply with WAC 173-303-350(4)(b). The Hanford Facility Memorandums of Understanding with local authorities provides emergency planning and coordination equivalent to submittal of the contingency plan to local authorities

II.C PERSONNEL TRAINING

II.C.1 The Permittees will conduct personnel training as required by WAC 173-303-330. The Permittees will maintain documents in accordance with WAC 173-303-330(2) and (3). Training records may be maintained in the Hanford Facility Operating Record, or on electronic data storage.

II.C.2 All Hanford Facility personnel will receive general Facility training within six (6) months of hire. This training will provide personnel with orientation of dangerous waste management activities being conducted at the Hanford Facility. This training will include:

II.C.2.a Description of emergency signals and appropriate personnel response;

II.C.2.b Identification of contacts for information regarding dangerous waste management activities;

II.C.2.c Introduction to waste minimization concepts;

II.C.2.d Identification of contact(s) for emergencies involving dangerous waste; and

II.C.2.e Familiarization with the applicable portions of the *Hanford Emergency Management Plan*.

II.C.3 Description of training plans for personnel assigned to TSD units subject to this Permit are delineated in the unit-specific Chapters in Parts III, V, and/or VI of this Permit.

II.C.4 The Permittees will provide the necessary training to non-Facility personnel (i.e., visitors, sub-contractors), as appropriate, for the locations of such personnel, and the activities that will be undertaken. At a minimum, this training will describe dangerous waste management hazards at the Facility.

II.D WASTE ANALYSIS

II.D.1 All waste analyses required by this Permit will be conducted in accordance with a written waste analysis plan (WAP), or sampling and analysis plan (SAP). Operating TSD units will have a WAP, which will be approved through incorporation of the TSD unit into Part III of this Permit. Closing TSD units, and units in post-closure, should have a SAP and, if necessary, a WAP, which will be approved through incorporation of the TSD unit into Part V and/or VI of this Permit.

II.D.2 Until a WAP is implemented in accordance with Permit Condition II.D.1., any unit(s) identified in Parts III, V, and/or VI of this Permit, without a unit-specific WAP approved by Ecology, will not treat, store, or dispose of dangerous waste, unless specified otherwise by Ecology in writing.

II.D.3 Each TSD unit WAP will include:

II.D.3.a The parameters for which each dangerous waste will be analyzed, and the rationale for selecting these parameters; (i.e., how analysis for these parameters will provide sufficient information on the waste properties to comply with WAC 173-303-300(1), (2), (3), and (4);

II.D.3.b The methods of obtaining or testing for these parameters;

II.D.3.c The methods for obtaining representative samples of wastes for analysis (representative sampling methods are discussed in WAC 173-303-110(2);

II.D.3.d The frequency with which analysis of a waste will be reviewed, or repeated, to ensure that the analysis is accurate and current;

II.D.3.e The waste analyses which generators have agreed to supply;

II.D.3.f Where applicable, the methods for meeting the additional waste analysis requirements for specific waste management methods, as specified in WAC 173-303-140(4)(b), 173-303-395(1), 173-303-630 through 173-303-670, and 40 CFR 264.1034, 264.1063, 284(a), and 268.7, for final status facilities;

II.D.3.f.i For off-site facilities, the procedures for confirming that each dangerous waste received matches the identity of the waste specified on the accompanying manifest, or shipping paper. This includes at least:

II.D.3.f.i.a The procedure for identifying each waste movement at the Facility; and,

II.D.3.f.i.b The method for obtaining a representative sample of the waste to be identified, if the identification method includes sampling.

II.D.3.f.ii For surface impoundments exempted from Land Disposal Restrictions (LDR) under 40 CFR 268.4(a), incorporated by reference in WAC 173-303-140(2), the procedures and schedules for:

II.D.3.f.iii The sampling of impoundment contents;

II.D.3.f.iv The analysis of test data; and

II.D.3.f.v The annual removal of residues that are not delisted under 40 CFR 260.22, or which exhibit a characteristic of hazardous waste and either;

II.D.3.f.v.a Do not meet applicable treatment standards of 40 CFR Part 268, Subpart D; or

II.D.3.f.v.b Where no treatment standards have been established:

II.D.3.f.v.b.1 Such residues are prohibited from land disposal under 40 CFR 268.32, or RCRA Section 3004(d); or

II.D.3.f.v.b.2 Such residues are prohibited from land disposal under 40 CFR 268.33(f); and

II.D.4 Should waste analysis be required by this Permit at a location on the Facility, other than at a TSD unit, a SAP will be maintained by the Permittees, and made available upon request from Ecology. Any SAP required by this Permit, not associated with a particular TSD unit, will include the elements of Permit Conditions II.D.3.a.

II.E QUALITY ASSURANCE/QUALITY CONTROL

II.E.1 All WAPs and SAPs required by this Permit will include a quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented in accordance with HFFACO Action Plan §6.5, Quality Assurance, and reported/made available in accordance with HFFACO Action Plan §9.6, Data Access and Delivery Requirements.

II.E.2 The level of QA/QC for the collection, preservation, transportation, and analysis of each sample required for implementation of this Permit may be based upon an Ecology-approved DQO for the sample. These DQOs will be approved by Ecology in writing or through incorporation of unit plans and Permits into Parts III, V, and/or VI of this Permit.

II.F GROUND WATER AND VADOSE ZONE MONITORING

The Permittees will comply with the ground water monitoring requirements of WAC 173-303-645. This Condition will apply only to those wells the Permittees use for the ground water monitoring programs applicable to the TSD units incorporated into Parts III, V, and/or VI of this Permit. Where releases from TSD units subject to this Permit have been documented or confirmed by investigation, or where vadose zone monitoring is proposed for integration with ground water monitoring, the Permittees will evaluate the applicability of vadose zone monitoring. The Permittees will consult with Ecology regarding the implementation of these requirements. If agreed to by Ecology, integration of ground water and vadose zone monitoring, for reasons other than this Permit, may be accommodated by this Permit. Results from other investigation activities will be used whenever possible to supplement and/or replace sampling required by this Permit.

II.F.1 Purgewater Management

Purgewater will be handled in accordance with the requirements set forth in Permit Attachment 10, *Purgewater Management Plan*.

II.F.2 Well Remediation and Abandonment

II.F.2.a The Permittees will inspect the integrity of active resource protection wells as defined by WAC 173-160-030, subject to this Permit, at least once every five (5) years. These inspections will be recorded in the Operating Record. The Permittees will prepare and maintain a plan and schedule by January 26, 1995, specifying the schedule and technical standards for this program. The Permittees will provide a copy of this plan upon the request of Ecology.

II.F.2.b The Permittees will evaluate resource protection wells subject to this Permit according to Sections 4.0 and 5.0 of the *Hanford Well Maintenance Inspection Plan* (Permit Attachment 8) and the *Policy on Remediation of Existing Wells and Acceptance Criteria for RCRA and CERCLA*, June 1990 (Permit Attachment 7), to determine if a well has a potential use as a qualified well. The Permittees will abandon or remediate unusable wells according to the requirements of Chapter 18.104 RCW, Chapter 173-160 WAC, and Chapter 173-162 WAC to ensure that the integrity of wells subject to this Permit is maintained. The time for this remediation will be specified in Parts III, V, and/or VI of this Permit.

II.F.2.c Ecology will receive notice in writing at least seventy-two (72) hours before the Permittees remediate (excluding maintenance activities), or abandon any well subject to this Permit.

II.F.2.d For wells subject to this Permit, the Permittees will achieve full compliance with Chapter 173-160 WAC and Chapter 18.104 RCW by replacing non-compliant wells subject to the permit with new wells under the schedule in HFFACO Milestone M-24.

II.F.3 Well Construction

All wells constructed pursuant to this Permit will be constructed in compliance with Chapter 173-160 WAC.

II.G SITING CRITERIA

The Permittees will comply with the applicable notice of intent and siting criteria of WAC 173-303-281 and WAC 173-303-282, respectively.

II.H RECORDKEEPING AND REPORTING

The provisions of WAC 173-303-620 are not applicable to the Hanford Facility because the USDOE is both owner and operator of the Hanford Facility. WAC 173-303-620(1)(c).

II.I FACILITY OPERATING RECORD

II.I.1 The Permittees will maintain a written Facility Operating Record until ten (10) years after post-closure, or corrective action is complete and certified for the Facility, whichever is later. Except as specifically provided otherwise in this Permit, the Permittees will also record all information referenced in this Permit in the Facility Operating Record within seven (7) working days after the information becomes available. A TSD unit-specific Operating Record will be maintained for each TSD unit at a location identified in Parts III, V, and VI of this Permit. This information may be maintained on electronic media. Each TSD unit-specific Operating Record will be included by reference in the Facility Operating Record. Information required in each TSD unit-specific Operating Record is identified on a unit-by-unit basis in Part III, V, or VI of this Permit. The Facility Operating Record will include, but not be limited to, the following information.

II.I.1.a A description of the system(s) currently utilized to identify and map solid waste management units and their locations. The description of the system(s) is required to include an identification of on-site access to the system's data, and an on-site contact name and telephone number. In addition to, or as part of, this system(s), the Permittees will also maintain a list identifying active ninety (90)-day waste storage areas, and dangerous waste satellite accumulation areas and their locations. The list will identify the location, the predominant waste types managed at the area, and a date identifying when the list was compiled. Maps will be provided by the Permittees upon request by Ecology;

II.I.1.b Records and results of waste analyses required by WAC 173-303-300;

II.I.1.c An identification of the system(s) currently utilized to generate Occurrence Reports. The identification of the system(s) is required to include a description, an identification of an on-site location of hard-copy Occurrence Reports, an identification of on-site access to the system's data, and an on-site contact name and telephone number;

II.I.1.d Copies of all unmanifested waste reports;

II.I.1.e The *Hanford Emergency Management Plan*, as well as summary reports, and details of all incidents that require implementing the contingency plan, as specified in WAC 173-303-360(2)(k);

II.I.1.f An identification of the system(s) currently utilized and being developed to record personnel training records and to develop training plans. The identification of the system(s) is required to include a description, an identification of on-site access to the system's data, and an on-site contact name and telephone number;

II.I.1.g Preparedness and prevention arrangements made pursuant to WAC 173-303-340(4) and documentation of refusal by state or local authorities that have declined to enter into agreements in accordance with WAC 173-303-340(5);

II.I.1.h Reserved Condition;

II.I.1.i Reserved Condition;

II.I.1.j Documentation (e.g., waste profile sheets) of all dangerous waste transported to or from any TSD unit subject to this Permit. This documentation will be maintained in the receiving unit's Operating Record from the time the waste is received;

II.I.1.k An identification of the system(s) currently utilized to cross-reference waste locations to specific manifest document numbers. The identification of the system(s) is required to include a thorough description, an identification of an on-site location of a hard-copy data report, an identification of on-site access to the system's data, and an on-site contact name and telephone number;

II.I.1.l Reserved Condition;

II.I.1.m Annual Reports required by this Permit;

II.I.1.n An identification of all systems currently utilized to record monitoring information, including all calibration and maintenance records, and all original strip chart recordings for continuous monitoring instrumentation. The identification of systems will include a description of the systems. The descriptions will include a confirmation that the criteria of Permit Condition I.E.10 is provided by the utilization of the system. The identification of the systems will also include an identification of on-site access to the system's data, an on-site contact name and telephone number;

II.I.1.o Reserved Condition;

II.I.1.p Summaries of all records of ground water corrective action required by WAC 173-303-645;

II.I.1.q An identification of the system(s) currently being utilized and being developed to evaluate compliance with the Conditions of this Permit and with Chapter 173-303 WAC. The identification of the system(s) will include a description of the system(s), an identification of on-site access to the system's data, and an on-site contact name and telephone number. The description of the system(s) will also include a definition of which portion(s) of the system(s) is accessible to Ecology;

II.I.1.r All deed notifications required by this Permit (to be included by reference);

II.I.1.s All inspection reports required by this Permit; and

II.I.1.t All other reports as required by this Permit, including design change documentation and nonconformance documentation.

II.J FACILITY CLOSURE

II.J.1 Final closure of the Hanford Facility will be achieved when closure activities for all TSD units have been completed, as specified in Parts III, IV, V, or VI of this Permit. Completion of these activities will be documented using either certifications of closure, in accordance with WAC 173-303-610(6), or certifications of completion of post-closure care, in accordance with WAC 173-303-610(11).

II.J.2 The Permittees will close all TSD units as specified in Parts III, V, and/or VI of this Permit.

II.J.3 The Permittees will submit a written notification of, or request for, a Permit modification in accordance with the provisions of WAC 173-303-610(3)(b), whenever there is a change in operating plans, facility design, or the approved closure plan. The written notification or request must include a copy of the amended closure plan for review, or approval, by Ecology.

II.J.4 The Permittees will close the Facility in a manner that:

II.J.4.a Minimizes the need for further maintenance;

II.J.4.b Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of dangerous waste, dangerous constituents, leachate, contaminated run-off, or dangerous waste decomposition products, to the ground, surface water, ground water, or the atmosphere; and

II.J.4.c Returns the land to the appearance and use of surrounding land areas to the degree possible, given the nature of the previous dangerous waste activity.

II.J.4.d Meets the requirements of WAC 173-303-610(2)(b).

II.K SOIL/GROUND WATER CLOSURE PERFORMANCE STANDARDS

II.K.1 For purposes of Permit Condition II.K, the term "clean closure" shall mean the status of a TSD unit at the Facility which has been closed to the cleanup levels prescribed by WAC 173-303-610(2)(b), provided certification of such closure has been accepted by Ecology.

II.K.2 The Permittees may close a TSD unit to background levels as defined in Ecology approved Hanford Site Background Documents, if background concentrations exceed the levels prescribed by Permit Condition II.K.1. Closure to these levels, provided the Permittees comply with all other closure requirements for a TSD unit as identified in Parts III, V, and/or VI of this Permit, shall be deemed as "clean closure".

II.K.3 Except for those TSD units identified in Permit Conditions II.K.1, II.K.2, or II.K.4, the Permittees may close a TSD unit to a cleanup level specified under Method C of Chapter 173-340 WAC. Closure of a TSD unit to these levels, provided the Permittees comply with all other closure requirements for the TSD unit as specified in Parts III, V, and/or VI of the Permit, and provided the Permittees comply with Permit Conditions II.K.3.a through II.K.3.c, shall be deemed as a "modified closure".

II.K.3.a For "modified closures", the Permittees shall provide institutional controls in accordance with WAC 173-340-440 which restricts access to the TSD unit for a minimum of five (5) years following completion of closure. The specific details and duration of institutional controls shall be specified in Parts III, V, and/or VI of this Permit for a particular TSD unit.

II.K.3.b For "modified closures", the Permittees shall provide periodic assessments of the TSD unit to determine the effectiveness of the closure. The specific details of the periodic assessments shall be specified in Parts III, V, and/or VI of this Permit. The periodic assessments shall include, as a minimum, a compliance monitoring plan in accordance with WAC 173-340-410 that will address the assessment requirements on a unit-by-unit basis. At least one (1) assessment activity shall take place after a period of five (5) years from the completion of closure, which will demonstrate whether the soils and ground water have been maintained at or below the allowed concentrations as specified in Parts III, V, or VI of this Permit. Should the required assessment activities identify contamination above the allowable limits as specified in Parts III, V, and/or VI, the TSD unit must be further remediated, or the requirements of II.K.4 must be followed. Should the required assessment activities demonstrate that contamination has diminished, or remained the same, the Permittees may request that Ecology reduce, or eliminate the assessment activities and/or institutional controls.

II.K.3.c For "modified closures", the Permittees shall specify the particular activities required by this Condition in a Post-Closure Permit application.

II.K.4 Any TSD unit for which Permit Conditions II.K.1, II.K.2, or II.K.3, are not chosen as the closure option, closing the TSD unit as a landfill may be selected. Closure and post-closure of the TSD unit as a landfill, must follow the procedures and requirements specified in WAC 173-303-610.

II.K.5 The cleanup option selected shall be specified in Parts III, V, and/or VI of this Permit, and shall be chosen with consideration of the potential future site use for that TSD unit/area. Definitions contained within Chapter 173-340 WAC shall apply to Permit Condition II.K. Where definitions are not otherwise provided by this Permit, the HFFACO, or Chapter 173-303 WAC.

II.K.6 Deviations from a TSD unit closure plan required by unforeseen circumstances encountered during closure activities, which do not impact the overall closure strategy, but provide equivalent results, shall be documented in the TSD unit-specific Operating Record and made available to Ecology upon request, or during the course of an inspection.

II.K.7 Where agreed to by Ecology, integration of other statutorily or regulatory mandated cleanups may be accommodated by this Permit. Results from other cleanup investigation activities shall be used whenever possible to supplement and/or replace TSD unit closure investigation activities. All, or appropriate parts of, multipurpose cleanup and closure documents can be incorporated into this Permit through the Permit modification process. Cleanup and closures conducted under any statutory authority, with oversight by either Ecology or the EPA, which meet the equivalent of the technical requirements of Permit Conditions II.K.1 through II.K.4, may be considered as satisfying the requirements of this Permit.

II.L DESIGN AND OPERATION OF THE FACILITY

II.L.1 Proper Design and Construction

The Permittees will design, construct, maintain, and operate the Facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous substances to air, soil, ground water, or surface water, which could threaten human health, or the environment.

II.L.2 Design Changes, Nonconformance, and As-Built Drawings

II.L.2.a After completing the Permit modification process in Permit Condition I.C.3, the Permittees will conduct all construction subject to this Permit in accordance with the approved designs, plans and specifications that are required by this Permit, unless authorized otherwise in Permit Conditions II.L.2.b or II.L.2.c. For purposes of Permit Conditions II.L.2.b and II.L.2.c, an Ecology construction inspector, or TSD unit manager, are designated representatives of Ecology.

II.L.2.b During construction of a project subject to this Permit, changes to the approved designs, plans and specifications will be formally documented. All design change documentation will be maintained in the TSD unit-specific Operating Record and will be made available to Ecology upon request or during the course of an inspection. The Permittees will provide copies of design change documentation affecting any critical system to Ecology within five (5) working days of initiating the design change documentation. Identification of critical systems will be included by the Permittees in each TSD unit-specific dangerous waste Permit application, closure plan or Permit modification, as appropriate. Ecology will review a design change documentation modifying a critical system, and inform the Permittees in writing within two (2) working days, whether the proposed design change documentation, when issued, will require a Class 1, 2, or 3

Permit modification. If after two (2) working days Ecology has not responded, it will be deemed as acceptance of the design change documentation by Ecology.

II.L.2.c During construction of a project subject to this Permit, any work completed which does not meet or exceed the standards of the approved design, plans and specifications will be formally documented with nonconformance documentation. All nonconformance documentation will be maintained in the TSD unit-specific Operating Record and will be made available to Ecology upon request, or during the course of an inspection. The Permittees will provide copies of nonconformance documentation affecting any critical system to Ecology within five (5) working days after identification of the nonconformance. Ecology will review nonconformance documentation affecting a critical system and inform the Permittees in writing, within two (2) working days, whether a Permit modification is required for any nonconformance, and whether prior approval is required from Ecology before work proceeds, which affects the nonconforming item. If Ecology does not respond within two (2) working days, it will be deemed as acceptance and no Permit modification will be required.

II.L.2.d Upon completion of a construction project subject to this Permit, the Permittees will produce as-built drawings of the project which incorporate the design and construction modifications resulting from all project design change documentation and nonconformance documentation, as well as modifications made pursuant to WAC 173-303-830. The Permittees will place the drawings into the Operating Record within twelve (12) months of completing construction, or within an alternate period of time specified in a unit-specific Permit Condition in Part III or V of this Permit.

II.L.2.e Facility Compliance

The Permittees in receiving, storing, transferring, handling, treating, processing, and disposing of dangerous waste, will design, operate, and/or maintain the Facility in compliance with all applicable federal, state, and local laws and regulations.

II.M SECURITY

The Permittees will comply with the security provisions of WAC 173-303-310. The Permittees may comply with the requirements of WAC 173-303-310(2) on a unit-by-unit basis.

II.N RECEIPT OF DANGEROUS WASTES GENERATED OFF-SITE

II.N.1 Receipt of Off-Site Waste

The Permittees will comply with Permit Conditions II.N.2 and II.N.3 for any dangerous wastes which are received from sources outside the United States, or from off-site generators.

II.N.2 Waste from Sources Outside the United States

The Permittees will meet the requirements of WAC 173-303-290(1) for waste received from outside the United States.

II.N.3 Notice to Generator

For waste received from off-site sources (except where the owner/operator is also the generator), the Permittees will inform the generator in writing that they have the appropriate Permits for, and will accept, the waste the generator is shipping, as required by WAC 173-303-290(3). The Permittees will keep a copy of this written notice as part of the TSD unit-specific Operating Record.

II.O GENERAL INSPECTION REQUIREMENTS

II.O.1 The Permittees will inspect the Facility to prevent malfunctions and deterioration, operator errors, and discharges, which may cause or lead to the release of dangerous waste constituents to the environment, or threaten human health. Inspections must be conducted in accordance with the provisions of WAC 173-303-320(2). In addition to the TSD unit inspections specified in Parts III, V, and/or VI, the following inspections will also be conducted:

II.O.1.a The 100, 200 East, 200 West, 300, and 400 areas will be inspected annually.

II.O.1.b The Permittees will inspect the banks of the Columbia River, contained within the Facility boundary, once a year. The inspection will be performed from the river, by boat, and the inspectors will follow the criteria in Permit Condition II.O.1.c.

II.O.1.c The Permittees will visually inspect the areas identified in Permit Conditions II.O.1.a and II.O.1.b for malfunctions, deterioration, operator errors, and discharges which may cause or lead to the release of dangerous waste constituents to the environment, or that threaten human health. Specific items to be noted are as follows:

II.O.1.c.i Remains of waste containers, labels, or other waste management equipment;

II.O.1.c.ii Solid waste disposal sites not previously identified for remedial action;

II.O.1.c.iii Uncontrolled waste containers (e.g., orphan drums);

II.O.1.c.iv Temporary or permanent activities that could generate an uncontrolled waste form; and

II.O.1.c.v Unpermitted waste discharges.

II.O.1.d The Permittees will notify Ecology at least seven (7) days prior to conducting these inspections in order to allow representatives of Ecology to be present during the inspections.

II.O.2 If the inspection by the Permittees, conducted pursuant to Permit Condition II.O.1, reveals any problems, the Permittees will take remedial action on a schedule agreed to by Ecology.

II.O.3 The inspection of high radiation areas will be addressed on a case-by-case basis in either Part III of this Permit, or prior to the inspections required in Permit Condition II.O.1.

II.P MANIFEST SYSTEM

II.P.1 The Permittees will comply with the manifest requirements of WAC 173-303-370 for waste received from off-site and WAC 173-303-180 for waste shipped off-site.

II.P.2 Transportation of dangerous wastes along roadways, if such routes are not closed to general public access at the time of transport, can be manifested pursuant to an alternate tracking system as allowed by WAC 173-303-180(6). The alternate tracking system can be a paper system or an electronic system. The roadways addressed by this condition are a public or private right-of-way within or along the border of contiguous property where the movement is under control of the USDOE. The alternate tracking system will consist of documentation between the offering Hanford Facility location and the receiving Hanford Facility location containing the following information:

II.P.2.a Hanford Facility offeror name, location, and telephone number;

II.P.2.b Hanford Facility receiver name, location, and telephone number;

II.P.2.c Description of waste;

II.P.2.d Number and type of containers;

II.P.2.e Total quantity of waste;

II.P.2.f Unit volume/weight;

II.P.2.g Dangerous waste number(s) or U.S. Department of Transportation hazard class; and

II.P.2.h Special handling instructions including emergency contacts.

II.P.3 The Hanford Facility offeror and receiver will resolve any discrepancies of information found related to Permit Conditions II.P.2.a through II.P.2.h.

II.P.4 If the discrepancies cannot be resolved at the Hanford Facility receiving location, a new Hanford Facility receiver location will be agreed upon, or the dangerous waste will be returned to the offeror location. The documentation accompanying the movement of dangerous waste will be updated to reflect the new receiving location.

II.Q ON-SITE TRANSPORTATION

II.Q.1 Documentation must accompany any on-site dangerous waste which is transported to or from any TSD unit subject to this Permit, through or within the 600 Area, unless the roadway is closed to general public access at the time of shipment. Waste transported by rail or by pipeline is exempt from this Condition. This documentation will include the following information, unless other unit-specified provisions are designated in Part III or V of this Permit:

II.Q.1.a Generator's name, location, and telephone number;

II.Q.1.b Receiving TSD unit's name, location, and telephone number;

II.Q.1.c Description of waste;

II.Q.1.d Number and type of containers;

II.Q.1.e Total quantity of waste;

II.Q.1.f Unit volume/weight;

II.Q.1.g Dangerous waste number(s); and

II.Q.1.h Any special handling instructions.

II.Q.2 All non-containerized solid, dangerous waste transported to or from TSD units, subject to this Permit, will be covered to minimize the potential for material to escape during transport.

II.R EQUIVALENT MATERIALS

II.R.1 The Permittees may substitute an equivalent or superior product for any equipment or materials specified in this Permit. Use of equivalent or superior products will not be considered a modification of this Permit. A substitution will not be considered equivalent unless it is at least as effective as the original equipment or materials in protecting human health and the environment.

II.R.2 The Permittees will place in the Operating Record (within seven [7] days after the change is put into effect) the substitution documentation, accompanied by a narrative explanation, and the date the substitution became effective. Ecology may judge the soundness of the substitution.

II.R.3 If Ecology determines that a substitution was not equivalent to the original, it will notify the Permittees that the Permittees' claim of equivalency has been denied, of the reasons for the denial, and that the original material or equipment must be used. If the product substitution is denied, the Permittees will comply with the original approved product specification, or find an acceptable substitution.

II.S LAND DISPOSAL RESTRICTIONS (LDR)

Unless specifically identified otherwise in the HFFACO, the Permittees will comply with all LDR requirements as set forth in WAC 173-303-140.

II.T ACCESS AND INFORMATION

To the extent that work required by this Permit must be done on property not owned or controlled by the Permittees, the Permittees must utilize their best efforts to obtain access and information at these locations.

II.U MAPPING OF UNDERGROUND PIPING

II.U.1 Reserved.

II.U.2 Reserved.

II.U.3 The Permittees will maintain piping maps for existing, newly identified, and/or new dangerous waste underground pipelines (including active, inactive, and abandoned pipelines, which contain or contained dangerous waste subject to the provisions of Chapter 173-303 WAC) at the Hanford Facility. The maps will identify the origin, destination, direction of flow, size, depth and type (i.e., reinforced concrete, stainless steel, cast iron, etc.), of each pipe, and the location of their diversion boxes, valve pits, seal pots, catch tanks, receiver tanks, and pumps, and utilize Washington State Plane Coordinates, NAD 83(91), meters. If the type of pipe material is not documented on existing drawings, the most probable material type will be provided. The maps will also identify whether the pipe is active, inactive, or abandoned. The age of all pipes requiring identification pursuant to this Condition will be documented in an Attachment to the submittal. If the age cannot be documented, an estimate of the age of the pipe will be provided based upon best engineering judgment. These maps need not include the pipes within a fenced tank farm or within a building/structure. These maps will be compiled using documented QA/QC control methods and procedures outlined in DOE/RL-96-50, *Hanford Facility RCRA Permit Mapping and Marking of Dangerous Waste Underground Pipelines Report*, September 1996. These maps and any Attachments will be maintained in the Facility Operating Record and be updated annually as required by Permit Condition II.U.4.

II.U.4 Permittees will maintain current all maps required by Permit Condition II.U.3. These maps will be updated to incorporate new or revised information available by March 30th of each year. By September 30th of each year, the Permittees will submit to Ecology a list of maps that have been updated. The updated maps (including any Attachments) and the annual list submitted to Ecology will be maintained in the Facility Operating Record.

II.V MARKING OF UNDERGROUND PIPING

The Permittees will maintain marking of underground pipelines located outside the 200 East, 200 West, 300, 400, 100N, and 100K Areas. These pipelines will be marked at the point they pass beneath an area fence, at their origin and destination, at any point they cross an improved road, and every 100 meters along the pipeline corridor where practicable. The markers will be labeled with a sign that reads "Buried Dangerous Waste Pipe" and will be visible from a distance of fifteen (15) meters.

II.W OTHER PERMITS AND/OR APPROVALS

II.W.1 The Permittees will be responsible for obtaining all other applicable federal, state, and local permits authorizing the development and operation of the Facility. To the extent that work required by this Permit must be done under a permit and/or approval pursuant to other regulatory authority, the Permittees will use their best efforts to obtain such permits.

II.W.2 All other permits related to dangerous waste management activities are severable and enforceable through the permitting authority under which they are issued.

II.W.3 All air emissions from units subject to this Permit will comply with all applicable state and federal regulations pertaining to air emission controls, including but not limited to, Chapter 173-400 WAC, General Regulations for Air Pollution Sources; Chapter 173-460 WAC, Controls for New Sources of Toxic Air Pollutants; and Chapter 173-480 WAC, Ambient Air Quality Standards and Emission Limits for Radionuclides.

II.X SCHEDULE EXTENSIONS

II.X.1 The Permittees will notify Ecology in writing, as soon as possible, of any deviations or expected deviations, from the schedules of this Permit. The Permittees will include with the notification all information supporting their claim that they have used best efforts to meet the required schedules. If Ecology determines that the Permittees have made best efforts to meet the schedules of this Permit, Ecology will notify the Permittees in writing by certified mail, that the Permittees have been granted an extension. Such an extension will not require a Permit modification under Permit Condition I.C.3. Should Ecology determine that the Permittees have not made best efforts to meet the schedules of this Permit, Ecology may take such action as deemed necessary.

Copies of all correspondence regarding schedule extensions will be kept in the Operating Record.

II.X.2 Any schedule extension granted through the approved change control process identified in the HFFACO will be incorporated into this Permit. Such a revision will not require a Permit modification under Permit Condition I.C.3.

II.Y CORRECTIVE ACTION

In accordance with WAC 173-303-646 and WAC 173-303-815(2)(b)(ii), the Permittee must conduct corrective action, as necessary to protect human health and the environment, for releases of dangerous waste and dangerous constituents from solid waste management units and areas of concern at the facility, including releases that have migrated beyond the facility boundary. The Permittee may be required to implement measures within the facility to address releases, which have migrated beyond the facility's boundary. As specified in Permit Conditions II.Y.1.g, II.Y.2.a.iii, and II.Y.2.a.ii, the Permittee's right to challenge Ecology's authority to impose corrective action with respect to radionuclides, CERCLA Past Practice (CPP) Units (as identified under Permit Condition II.Y.2.a.) and selected solid waste management units not covered by the HFFACO at property currently subleased to US Ecology, Inc. (as identified under Permit Condition II.Y.3.a.i), is reserved until such time as Ecology chooses to impose corrective action in accordance with the Permit modification procedures of WAC 173-303-830.

II.Y.1 Compliance with Chapter 173-340 WAC

In accordance with WAC 173-303-646, the Permittee must conduct corrective action "as necessary to protect human health and the environment". To ensure that corrective action will be conducted as necessary to protect human health and the environment, except as provided in Permit Condition II.Y.2, the Permittee must conduct corrective action in a manner that complies with the following provisions of Chapter 173-340 WAC:

II.Y.1.a As necessary to select a cleanup action in accordance with WAC 173-340-360 and WAC 173-340-350 State Remedial Investigation and Feasibility Study;

II.Y.1.b WAC 173-340-360 Selection of Cleanup Actions;

II.Y.1.c WAC 173-340-400 Cleanup Actions;

II.Y.1.d WAC 173-340-410 Compliance Monitoring Requirements;

II.Y.1.e WAC 173-340-420 Periodic Site Reviews;

II.Y.1.f WAC 173-340-440 Institutional Controls; and

II.Y.1.g WAC 173-340-700 through -760 Cleanup Standards, except that to the extent that Ecology seeks to impose corrective action with respect to radionuclides regulated under the provisions of the Atomic Energy Act, as amended, 42 U.S.C. § 2011 et.seq. (AEA), the Permittee may challenge Ecology's authority to impose such corrective action through a timely appeal of the permit modification issued by Ecology without argument from Ecology that such right has been waived by a failure to fully litigate that issue through an appeal taken within thirty (30) days of the issuance of this permit, and without argument from the Permittee that such requirement fails to satisfy a cause for Permit modification under WAC 173-303-830(3)(a).

II.Y.2 Acceptance of Work under Other Authorities or Programs and Integration with the HFFACO.

Corrective action is necessary to protect human health and the environment for all units identified in Appendix B and Appendix C of the HFFACO. Notwithstanding Permit Condition II.Y.1, work under other cleanup authorities or programs, including work under the HFFACO, may be used to satisfy corrective action requirements, provided it protects human health and the environment.

II.Y.2.a For units identified in Appendix C of the HFFACO, as amended, as CERCLA Past Practice (CPP) Units, Ecology accepts work under the HFFACO, as amended, and under the CERCLA program, as satisfying corrective action requirements to the extent provided for in, and subject to the reservations and requirements of, Permit Conditions II.Y.2.a.i through II.Y.2.a.iv.

II.Y.2.a.i For any unit identified in Appendix C of the HFFACO as a CPP unit, the Permittee must comply with the requirements and schedules related to investigation and cleanup of the CPP unit(s) developed and approved under the HFFACO, as amended. The requirements and schedules related to investigation and cleanup of CPP units currently in place under the HFFACO, as amended, and in the future developed and approved under the FFAOC, as amended, are incorporated into this Permit by this reference and apply under this Permit as if they were fully set forth herein. If the Permittee is not in compliance with requirements of the HFFACO, as amended, that relate to investigation or cleanup of CPP unit(s), Ecology may take action to independently enforce the requirements as corrective action requirements under this Permit.

II.Y.2.a.ii For any unit identified in Appendix C of the HFFACO as a CPP unit, in the case of an interim ROD, a final decision about satisfaction of corrective action requirements will be made in the context of issuance of a final ROD.

II.Y.2.a.iii If EPA and Ecology, after exhausting the dispute resolution process under Section XXVI of the HFFACO, cannot agree on requirements related to investigation or cleanup of CPP unit(s), Ecology will notify the Permittee, in writing, of the disagreement and impose, in accordance with the Permit Modification Procedures of WAC 173-303-830, a requirement for the Permittee to conduct corrective action for the subject units(s) in accordance with Permit Condition II.Y.1. The Permittee may challenge Ecology's authority to impose such corrective action requirements through a timely appeal of such permit modification, without argument from Ecology that the Permittee's right to raise such challenge has been waived by a failure to fully litigate that issue through an appeal taken within thirty (30) days of the issuance of this permit, and without argument from the Permittee that such requirement fails to satisfy a cause for Permit modification under WAC 173-303-830(3)(a). Within sixty (60) days of receipt of the above permit modification, or within some other reasonable period of time agreed to by Ecology and the Permittee, the Permittee must submit for Ecology review and approval, a plan to conduct corrective action in accordance with Permit Condition II.Y.1 for the subject unit(s). The Permittee's plan may include a request that Ecology evaluate work under another authority or program. Approved corrective action plans under this Condition will be incorporated into this Permit in accordance with the Permit Modification Procedures of WAC 173-303-830.

II.Y.2.a.iv The Permittee must maintain information on corrective action for CPP units covered by the HFFACO in accordance with the HFFACO Action Plan §9.0 and §10.0. In addition, the Permittee must maintain all reports and other information developed in whole, or in part, to implement the requirements of Permit Condition II.Y.2.a, including reports of investigations and all raw data, in the Facility Operating Record in accordance with Permit Condition II.I. Information that is maintained in the Hanford Site Administrative Record may be incorporated by reference into the Facility Operating Record.

II.Y.2.b For units identified in Appendix C of the HFFACO, as amended, as RPP units, Ecology accepts work under the HFFACO, as amended, as satisfying corrective action requirements to the extent provided for, and subject to the reservations and requirements of, Permit Conditions II.Y.2.b.i through II.Y.2.b.iv.

II.Y.2.b.i For any unit identified in Appendix C of the HFFACO, as amended, as RPP unit, until a Permit modification is complete under Permit Condition II.Y.2.b.iii., the Permittee must comply with the requirements and schedules related to investigation and cleanup of RPP units developed and approved under the HFFACO, as amended. The requirements and schedules related to investigation and cleanup of RPP units currently in place under the HFFACO, as amended, and in the future developed and approved under the HFFACO, as amended, are incorporated into this Permit by this reference and apply under this Permit as if they were fully set forth herein. Until a permit modification is complete under Permit Condition II.Y.2.b.iii, if the Permittee is not in compliance with requirements and schedules related to investigation and cleanup of RPP units developed and approved under the HFFACO, as amended, Ecology may take action to independently enforce the requirements as corrective action requirements under this Permit.

II.Y.2.b.ii When the Permittee submits a corrective measures study for an individual RPP unit or a group of RPP units, the Permittee must, at the same time, recommend a remedy for the unit(s). The remedy recommendation must contain all the elements of a draft cleanup action plan under WAC 173-340-360(10).

II.Y.2.b.iii After considering the Permittees' corrective measures study and remedy recommendation, Ecology will make a tentative remedy selection decision and publish the decision for public review and comment. Public review and comment may be accomplished by publishing the tentative decision as a draft Permit under WAC 173-303-840(10), or by a method that provides an equivalent opportunity for public review and participation. Following public review and comment, Ecology will make a final remedy selection decision. Final remedy decisions will be incorporated into the Permit using the Permit Modification Procedures of WAC 173-303-830.

II.Y.2.b.iv The Permittee must maintain information on corrective action for RPP units covered by the HFFACO, as amended, in accordance with HFFACO Action Plan §9.0 and §10.0. In addition, the Permittee must maintain all reports and other information developed in whole, or in part, to implement the requirements of Permit Condition II.Y.2.b, including reports of investigations and all raw data, in the Facility Operating Record in accordance with Permit Condition II.I. Information that is maintained in the Hanford Site Administrative Record may be incorporated into the Facility Operating Record by reference.

II.Y.2.c For each TSD unit or group of units, when the Permittee submits a certification of closure or a certification of completion of post-closure care, or at an earlier time agreed to by Ecology and the Permittee, the Permittee must, at the same time, either:

II.Y.2.c.i Document that the activities completed under closure and/or post-closure satisfy the requirements for corrective action; or

II.Y.2.c.ii If the activities completed under closure and/or post-closure care do not satisfy corrective action requirements, identify the remaining corrective action requirements and the schedule under which they will be satisfied, if remaining corrective action requirements will be satisfied by work developed and carried out under the HFFACO provisions for RPP units or CPP units, a reference to the appropriate RPP or CPP process and schedule will suffice.

II.Y.2.c.iii Ecology will make final decisions as to whether the work completed under closure and/or post-closure care satisfies corrective action, specify any unit-specific corrective action requirements, and incorporate the decision into this Permit in accordance with the Permit Modification Procedures of WAC 173-303-830.

II.Y.2.d Notwithstanding any other condition in this Permit, Ecology may directly exercise any administrative or judicial remedy under the following circumstances:

II.Y.2.d.i Any discharge or release of dangerous waste, or dangerous constituents, which are not addressed by the HFFACO, as amended;

II.Y.2.d.ii Discovery of new information regarding dangerous constituents or dangerous waste management, including but not limited to, information about releases of dangerous waste or dangerous constituents which are not addressed under the HFFACO, as amended; or

II.Y.2.d.iii A determination that action beyond the terms of the HFFACO, as amended, is necessary to abate an imminent and substantial endangerment to the public health, or welfare, or to the environment.

II.Y.3 Releases of Dangerous Waste or Dangerous Constituents Not Covered By the HFFACO

II.Y.3.a US Ecology

II.Y.3.a.i The following solid waste management units are not covered by the HFFACO:

II.Y.3.a.i.a US Ecology, Inc., SWMU 1: Chemical Trench;

II.Y.3.a.i.b US Ecology, Inc., SWMU 2-13: Low-level radioactive waste trenches 1 through 11A; and

II.Y.3.a.i.c US Ecology, Inc., SWMU 17: Underground resin tank.

II.Y.3.a.ii Selected solid waste management units identified in Permit Condition II.Y.3.a.i are currently being investigated by US Ecology in accordance with the Comprehensive Investigation US Ecology – Hanford Operations Workplan. Following completion of this investigation and any closure required of such solid waste management unit under the authority of the Washington State Department of Health, or within one (1) year of the effective date of this Permit Condition, whichever is earlier, Ecology will make a tentative decision as to whether additional investigation or cleanup is necessary to protect human health or the environment for the solid waste management units identified in Permit Condition II.Y.3.a.i, and publish that decision as a draft permit in accordance with WAC 173-303-840(10). Following the associated public comment period, and consideration of any public comments received during the public comment period, Ecology will publish as final permit conditions under WAC 173-303-840(8) either:

II.Y.3.a.ii.a A decision that corrective action is not necessary to protect human health or the environment;

II.Y.3.a.ii.b An extension to the schedule established under Permit Condition II.l.Y.3.a.ii; or

II.Y.3.a.ii.c A decision that corrective action in accordance with Permit Condition II.Y.1 is necessary to protect human health or the environment.

II.Y.3.a.iii If Ecology decides under Permit Condition II.Y.3.a.ii that corrective action is necessary to protect human health or the environment, the Permittee may challenge Ecology's authority to impose such corrective action requirements through a timely appeal of such permit modification, without argument from Ecology that the right to raise such challenge has been waived by a failure to fully litigate that issue through an appeal taken within thirty (30) days of the issuance of this permit, and with argument from the Permittee that such requirement fails to satisfy a cause for permit modification under WAC 173-303-830(3)(a). Within one hundred and eighty (180) days of receipt of the above Permit modification, the Permittee must submit, for Ecology review and approval, a plan to conduct corrective action in accordance with Permit Condition II.Y.1. Approved corrective action plans under this condition will be incorporated into this Permit in accordance with the Permit Modification Procedures of WAC 173-303-830.

II.Y.3.b Newly Identified Solid Waste Management Units and Newly Identified Releases of Dangerous Waste or Dangerous Constituents.

The Permittee must notify Ecology of all newly-identified solid waste management units and all newly-identified areas of concern at the Facility. For purposes of this condition, a 'newly-identified' solid waste management unit or a 'newly-identified' area of concern is a unit or area not identified in the HFFACO, as amended, on the effective date of this condition and not identified by Permit Condition II.Y.3.a. Notification to Ecology must be in writing and must include, for each newly-identified unit or area, the information required by WAC 173-303-806(4)(a)(xxiii) and WAC 173-303-806(4)(a)(xxiv). Notification to Ecology must occur at least once every calendar year, in January, and must include all units and areas newly identified since the last notification, except that if a newly identified unit or area may present an imminent and substantial endangerment to human health or the environment, notification must occur within five (5) days of identification of the unit or area. If information required by WAC 173-303-806(4)(a)(xxiii) or WAC 173-303-806(4)(a)(xxiv) is already included in

the Waste Information Data System, it may be incorporated by reference into the required notification.

II.Z WASTE MINIMIZATION

In accordance with WAC 173-303-380(1)(q), and Section 3005(h) of RCRA, 42 U.S.C. 6925(h), the Permittee must place a certification in the Hanford Facility Operating Record, Unit-Specific Files on an annual basis that:

II.Z.1.a A program is in place to reduce the volume and toxicity of hazardous waste generated to the degree determined by the Permittee to be economically practicable; and,

II.Z.1.b The proposed method of treatment, storage or disposal is that practicable method currently available to the Permittee, which minimizes the present and future threat to human health and the environment.

II.Z.2 The Permittee will maintain each such certification of waste minimization in the operating record as required by Permit Condition II.I.1.

II.AA AIR EMISSION STANDARDS FOR PROCESS VENTS

The Permittees will comply with applicable requirements of WAC 173-303-690 for process vents associated with Part III units performing specific separations processes unless exempted by WAC 173-303-690(1)(d). Threshold limits applied to process vents potentially requiring emission controls subject to WAC 173-303-690 are evaluated based on the summation of applicable emission sources for the entire Hanford Facility. When the summed emissions fall below threshold limits in 40 CFR 264.1032(a)(1), no emission control devices are required. If threshold limits in 40 CFR 264.1032(a)(1) are predicted to be exceeded, the Permittees will notify Ecology to determine the appropriate course of action. Unit-specific information is contained in Part III of the Permit for applicable units.

II.BB AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS

The Permittees will comply with applicable requirements of WAC 173-303-691 for certain equipment leaks associated with Part III units unless exempted by WAC 173-303-691(1)(e) or (f). Air emission standards apply to equipment that contacts or contains hazardous wastes with organic concentrations of at least 10 percent by weight. Unit-specific information is contained in Part III of the Permit for applicable units.

II.CC AIR EMISSION STANDARDS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS

The Permittees shall comply with applicable requirements of WAC 173-303-692 for containers, tanks, and surface impoundment areas associated with Part III units unless exempted by WAC 173-303-692(1)(b). Unit-specific information is contained in Part III of the Permit for applicable units.

PART III UNIT-SPECIFIC CONDITIONS FOR FINAL STATUS OPERATIONS

Operating Unit 2, PUREX Storage Tunnels
Operating Unit 3, Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility
Operating Unit 4, 242-A Evaporator
Operating Unit 5, 325 Hazardous Waste Treatment Units
Operating Unit 10, Waste Treatment and Immobilization Plant
Operating Unit 11, Integrated Disposal Facility
Operating Unit 15, 331-C Storage Unit
Operating Unit 16, 400 Area Waste Management Unit

PART IV UNIT SPECIFIC CONDITIONS FOR CORRECTIVE ACTION

Corrective Action Unit 1, 100-NR-1

PART V UNIT-SPECIFIC CONDITIONS FOR UNITS UNDERGOING CLOSURE

Closure Unit 1, 1325-N Liquid Waste Disposal Facility
Closure Unit 2, 1301-N Liquid Waste Disposal Facility
Closure Unit 3, 1324-N Surface Impoundment and 1324-NA Percolation Pond

PART VI UNIT-SPECIFIC CONDITIONS FOR UNITS IN POST-CLOSURE

Post Closure Unit 1, 300 Area Process Trenches
Post Closure Unit 2, 183-H Solar Evaporation Basins

UNITS RETIRED FROM THE PERMIT

100 D Ponds (Closed 8/9/99)
105-DR Large Sodium Fire Facility (Closed 7/1/04)
100-NR-2 Operable Unit (9/30/09)
200 West Area Ash Pit Demolition Site (Closed 11/28/95)
2101-M Pond (Closed 11/28/95)
216-B-3 Expansion Ponds (Closed 7/31/95)
218-E-8 Borrow Pit Demolition Site (Closed 11/28/95)
224-T Transuranic Waste Storage and Assay Facility (Closed 11/12/08)
241-Z Treatment and Storage Tanks (Closed 2/22/07)
2727-S Nonradioactive Dangerous Waste Storage Facility (Closed 7/31/95)
300 Area Solvent Evaporator (Closed 7/31/95)
300 Area Waste Acid Treatment System (Closed 10/30/2005)
303-K Storage Facility (Closed 7/22/02)
303-M Oxide Facility (Closed 6/15/06)
304 Concretion Facility (Closed 1/21/96)
305-B Storage Facility (Closed 7/2/07)
3718-F Alkali Metal Treatment and Storage Facility Closure Plan (Closed 8/4/98)
4843 Alkali Metal Storage Facility Closure Plan (Closed 4/14/97)
Hanford Patrol Academy Demolition Site (Closed 11/28/95)
Plutonium Finishing Plant Treatment Unit (Closed 2/8/05)
Simulated High Level Waste Slurry Treatment and Storage Unit (Closed 10/23/95)

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Hanford Facility RCRA Permit Modification Notification Forms

Attachment 4
Hanford Emergency Management Plan, DOE/RL-94-02

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Reviewed by RL Program Office:

L. A. Iracono 11/19/12

Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Hanford Emergency Management Plan, DOE/RL-94-02	**Attachment 4**

Description of Modification:
DOE/RL-94-02, Section 1.3.4:

1.3.4 Hanford Site Emergency Response

This section provides an overview of how the Hanford Site responds to events. It covers the actions to be taken for an event by the event discoverer, the facility staff, and by agencies such as the Hanford Fire Department and/or Hanford Patrol.

Since the Hanford Site has a diverse array of facilities and processes, a graded approach is used to respond to an event depending upon the nature of a facility and/or the severity of the event. There are a number of events to which the site has to be ready to respond, including releases, spills, operational events, fires, natural phenomenon, and security events.

The discoverer of an event (e.g., fire, release, spill, transportation incident, etc.) initiates response to the event that should include implementation of SWIM (**Stop** activities at the scene; **Warn** personnel; **Isolate** the area; **Minimize** exposure to the hazards) to the extent possible. For some events, specific response actions to mitigate the event by the discoverer and/or facility staff may be appropriate. In such cases, actions may include shutting down systems, isolating materials, or performing other facility specific response actions when appropriate. Facility procedures may also direct protective actions for personnel.

In other events, resources outside the facility may be required. In these cases, the general response approach is outlined in Figure 1-3 and requires the discoverer to call the 911 emergency number (or 373-0911 for cellular telephones). Upon being contacted, the 911 emergency center assesses the situation and notifies the primary response agencies – the Hanford Fire Department and Hanford Patrol – that respond and ensure implementation of the Hanford Incident Command System.

NOTE: Fire alarm pull boxes and fire sprinkler flow monitoring devices, which are connected to a system monitored by the Hanford Fire Department, and Hanford's general operation two-way radio system (hand-held and vehicle mounted), which is monitored in the 911 emergency center, are also available for summoning emergency response agencies.

The Hanford Incident Command System provides for coordination of all responders including the facility emergency response organization (i.e., Building Emergency Director, Building Warden, etc.). The senior Hanford Fire Department official becomes the Incident Commander (IC), unless the event is determined to primarily be a security event, in which case the Hanford Fire Department and Hanford Patrol will operate under a unified command system with Hanford Patrol making all decisions pertaining to security.

When the Hanford Incident Command System is established, a coordinated effort to plan and implement additional mitigative activities commences. In addition, the consequences of the event are further analyzed and additional protective actions are implemented through the use of Hanford Site Emergency Alerting System components and barricades if determined necessary.

WAC 173-303-830 Modification Class [1 2]	Class 1	Class '1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1
Enter wording of WAC 173-303-830, Appendix I Modification citation:

Administrative and informational changes. Change was made to describe the implementation and definition of the term SWIM. SWIM is being used in the Hanford emergency management program and needs to be included in DOE/RL-94-02 to maintain consist definition of the acronym with emergency management implementing procedures and Hanford General Employee Training.

Modification Approved: [X] Yes [ ] No (state reason for denial)
Reason for denial:

Reviewed by Ecology: EK Skeriniard 11/14/12.
Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Hanford Emergency Management Plan, DOE/RL-94-02	**Attachment 4**

Description of Modification:
DOE/RL-94-02, Section 1.3.4:

1.3.4 Hanford Site Emergency Response

This section provides an overview of how the Hanford Site responds to events. It covers the actions to be taken for an event by the event discoverer, the facility staff, and by agencies such as the Hanford Fire Department and/or Hanford Patrol.

Since the Hanford Site has a diverse array of facilities and processes, a graded approach is used to respond to an event depending upon the nature of a facility and/or the severity of the event. There are a number of events to which the site has to be ready to respond, including releases, spills, operational events, fires, natural phenomenon, and security events.

The discoverer of an event (e.g., fire, release, spill, transportation incident, etc.) initiates response to the event. For some events, specific response actions to mitigate the event by the discoverer and/or facility staff may be appropriate. In such cases, actions may include shutting down systems, isolating materials, or performing other facility specific response actions when appropriate. Facility procedures may also direct protective actions for personnel.

In other events, resources outside the facility may be required. In these cases, the general response approach is outlined in Figure 1-3 and requires the discoverer to call the 911 emergency number (or 373-0911 for cellular telephones). Upon being contacted, the 911 emergency center assesses the situation and notifies the primary response agencies – the Hanford Fire Department and Hanford Patrol – that respond and ensure implementation of the Hanford Incident Command System (ICS).

NOTE: Fire alarm pull boxes and fire sprinkler flow monitoring devices, which are connected to a system monitored by the Hanford Fire Department, and Hanford's general operation two-way radio system (hand-held and vehicle mounted), which is monitored in the 911 emergency center, are also available for summoning emergency response agencies.

~~The Hanford Incident Command System provides for coordination of all responders including the facility emergency response organization (i.e., Building Emergency Director, Building Warden, etc.).~~ The Hanford ICS is an integrated emergency management system with clearly defined responsibilities and communications pathways consistent with the National Incident Management System (NIMS) that provides a graded approach for emergency management based upon the needs of the event. Additionally, the Hanford ICS is designed to support predesignated and trained facility emergency response organization (ERO) members (i.e., Building Emergency Director, Building Warden, etc.) to complete required emergency response activities and to support emergency response agencies in the implementation of incident mitigation strategies.

The senior Hanford Fire Department official becomes the Incident Commander (IC), unless the event is determined to primarily be a security event, in which case the Hanford Fire Department and Hanford Patrol will operate under a unified command system with Hanford Patrol making all decisions pertaining to security.

When the Hanford ~~Incident Command System~~ ICS is established, a coordinated effort to plan and implement additional mitigative activities commences. In addition, the consequences of the event are further analyzed and additional protective actions are implemented through the use of Hanford Site Emergency Alerting System components and barricades if determined necessary.

WAC 173-303-830 Modification Class [1 2]	Class 1	Class [1]1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1
Enter wording of WAC 173-303-830, Appendix I Modification citation:

Administrative and informational changes. The deleted sentence was replaced with wording moved from section 2.2 (with minor editorial revision) to better define the Hanford ICS to ensure readers understand this is a key aspect of emergency response; to better explain the correlation of the Hanford ICS to NIMS; and to include examples of on-scene mitigation. The wording also better aligns with this section in describing the Hanford emergency response.

The use of the acronym ICS was also introduced.

Modification Approved: ☒ Yes ☐ No (state reason for denial)
Reason for denial:

Reviewed by Ecology: EK Skinnalan 11/14/12.
Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Hanford Emergency Management Plan, DOE/RL-94-02	**Attachment 4**

Description of Modification:
DOE/RL-94-02, Section 1.3.4:

1.3.4 Hanford Site Emergency Response

……Whenever there is an event at Hanford, certain notifications are required depending upon the type and severity of the event. These notifications would include management notifications, activation of emergency response personnel, and offsite agency notifications as necessary. These notifications are performed primarily by the ~~ONC~~ Hanford EOC Shift Office and site contractor environmental single points-of-contact. For events that do not meet emergency criteria but could cause public concern or media interest, local and state emergency management agencies are notified as well as state regulatory agencies for information purposes. If the event exceeds regulatory criteria, the appropriate regulatory agencies are notified immediately…….

WAC 173-303-830 Modification Class [1 2]	Class 1	Class 1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: B.6.d
Enter wording of WAC 173-303-830, Appendix I Modification citation:

Changes in name, address, or phone number of coordinators or other persons or agencies identified in the plan. The ONC (Occurrence Notification Center) name was changed on 11/08/12 to Hanford EOC Shift Office. In addition to occurrence reporting duties, the ONC has long been the 24-hour communication center in the Hanford EOC responsible for emergency notifications and activating the emergency alerting system. The new name better reflects these responsibilities and will be more easily recognized by both onsite and offsite organizations. Reference to the Hanford EOC Shift Office (from ONC) has been changed in other sections throughout DOE/RL-94-02 and needs to be changed in this section to maintain consistency.

Modification Approved: ☒ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology: E K Shumilas 11/19/12 Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Hanford Emergency Management Plan, DOE/RL-94-02	**Attachment 4**

Description of Modification:

DOE/RL-94-02, Section 2.2:

2.2 EMERGENCY RESPONSE ORGANIZATION STRUCTURE

.....~~Emergency response on the Hanford Site is modeled after the National Incident Management System. As such, the Hanford Incident Command System is an integrated emergency management system with clearly defined responsibilities and communication pathways that allows predesignated and trained individuals to jointly determine and implement incident mitigation strategies.~~

The Hanford Site ERO has two distinct components – the Incident Command Organization and the Hanford EOC – each with emergency direction and control responsibilities.

~~The Incident Command Organization consists of the facility/building ERO with responsibility for implementing emergency response activities at the event facility, and site contractor emergency response personnel (i.e., Hanford Fire Department, Hanford Patrol) with the responsibility for on-scene mitigation.~~ The Incident Command Organization consists of the NIMS ICS positions made up of site contractor emergency response personnel (i.e., Hanford Fire Department, Hanford Patrol) with the responsibility for on-scene mitigation (including emergency medical response, search and rescue operations, fire operations, hazardous material emergency response operations, and security related activities); and the facility/building ERO with responsibility for implementing emergency response activities at the event facility.....

WAC 173-303-830 Modification Class [1 2]	Class 1	Class 1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1

Enter wording of WAC 173-303-830, Appendix I Modification citation:

Administrative and informational changes. Wording in the deleted first paragraph was moved to section 1.3.4 (with minor editorial revision) as it better aligns with section 1.3.4, and to better explain Hanford ICS and the correlation of the Hanford ICS to NIMS.

Deleted wording in the third paragraph was replaced with same wording but in different order. Additional wording was also added to include examples of on-scene mitigation and explain the correlation of the Hanford ICS to NIMS.

Modification Approved: [X] Yes [ ] No (state reason for denial)

Reason for denial:

Reviewed by Ecology: [signature] 11/19/12

Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Hanford Emergency Management Plan, DOE/RL-94-02	**Attachment 4**

Description of Modification:

DOE/RL-94-02, Section 2.2:

2.2 EMERGENCY RESPONSE ORGANIZATION STRUCTURE

.....The facility/building ERO is responsible for completing specific emergency response activities associated with facility emergencies. For low-hazards and hazardous facilities with a Building Emergency Director (BED) or Building Warden (BW) on the premise at the time of the incident, the BED/BW shall be responsible for implementing emergency mitigation activities identified in appropriate emergency response procedures (e.g., protective actions, event classification, notification) ~~until arrival of the IC~~.....

WAC 173-303-830 Modification Class [1 2]	Class 1	Class 1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1

Enter wording of WAC 173-303-830, Appendix I Modification citation:

Administrative and informational changes. The first sentence was added to ensure that the facility/building ERO understands its responsibility for completing specific emergency response activities associated with facility emergencies.

The wording "until arrival of the IC" in the last sentence was deleted from this paragraph for two reasons: 1) The wording made it sound as though the facility/building ERO halted their response activities upon arrival of the IC. Under the Hanford ICS, the facility/building ERO retains responsibility for direct configuration control over facility systems and components, while the IC assumes the overall management associated with the incident and ensures that appropriate ICS positions are staffed. 2) The wording made it sound as though an IC is present for all events. For some events, specific response actions to mitigate the event by the facility/building ERO may be appropriate and not require resources from outside the facility (i.e., Hanford Fire Department, Hanford Patrol).

A subsequent paragraph in section 2.2 currently uses the wording "Upon arrival of the IC" to denote that the facility ERO then becomes part of a consolidated Incident Command Organization.

Modification Approved: [X] Yes [ ] No (state reason for denial) Reason for denial:	Reviewed by Ecology: [signature] 11/19/12. Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Hanford Emergency Management Plan, DOE/RL-94-02	**Attachment 4**

Description of Modification:
DOE/RL-94-02, Section 2.2:

2.2 EMERGENCY RESPONSE ORGANIZATION STRUCTURE

.....However, if events require actions performed by Hanford Site emergency response agencies (i.e., Hanford Fire Department, Hanford Patrol), the Hanford Incident Command System is activated. Upon arrival of the IC, the BED/BW, with support from the facility/building ERO, becomes part of a consolidated Incident Command Organization. The BED/BW shall retain responsibility for direct configuration control over facility systems and components, while the IC assumes the overall management strategy associated with the incident and ensures that ~~all functional areas~~ appropriate ICS positions are appropriately staffed and working cohesively towards mitigation of the incident.

If the BED/BW is not present at the low-hazards or hazardous facility at the time of an incident (e.g., during off shift hours), the IC shall perform the duties of the BED/BW in addition to his/her own duties. The respective on-call BED/BW shall be summoned to the scene based upon the BED/BW listing located in the POC or PNNL Control Room. If necessary, the BED/BW will make the classification decision (i.e., Alert, Site Area Emergency, or General Emergency) and determine if the RCRA contingency plan implementation requirements have been met prior to responding to the scene. If the on-call BED/BW is not available and timely classification is necessary, the IC may direct the ONC Duty Officer to make the classification decision and determine if the RCRA contingency plan implementation requirements have been met. Upon arrival of the BED/BW at the scene, the IC will turn over the remaining BED/BW duties.

The Hanford EOC fills the role identified in the NIMS as the Multiagency Coordination (MAC) group to coordinate activities above the event scene and to prioritize the incident demands for critical or competing resources, thereby assisting the coordination of the operations at the event scene. Responsibilities include ~~has the responsibility to~~ monitoring and provideing support for the onsite response, assisting with issue resolution, assessing the offsite impacts, and interfaceing with offsite agencies and the public.....

WAC 173-303-830 Modification Class [1 2]	Class 1	Class 1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1
Enter wording of WAC 173-303-830, Appendix I Modification citation:

Administrative and informational changes. In the first paragraph, the first sentence was added to explain when the Hanford ICS is activated. In the second sentence, the wording "the BED/BW, with support from" was added for clarity. In the third sentence, the wording "all functional areas" was replaced with "appropriate ICS positions" to better track with NIMS.

In the third paragraph, wording was added to identify the role of the Hanford EOC as it relates to NIMS. Minor editorial changes were made in the sentence identifying Hanford EOC responsibilities.

Modification Approved: [X] Yes [ ] No (state reason for denial) Reason for denial:	Reviewed by Ecology: EK Skrinde 11/14/12. Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Hanford Emergency Management Plan, DOE/RL-94-02	**Attachment 4**

Description of Modification:

DOE/RL-94-02, Section 2.2:

2.2 EMERGENCY RESPONSE ORGANIZATION STRUCTURE

.....The Hanford EOC is depicted in Figure 2-1 and the Incident Command Organization is depicted in Figure 2-2. Both components of the Hanford ERO are ~~depicted on Figure 2-1 and~~ further delineated in the respective subsections below.....

WAC 173-303-830 Modification Class [1 2]	Class 1	Class [1]1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1

Enter wording of WAC 173-303-830, Appendix I Modification citation:

Administrative and informational changes. Figure 2-1 previously included both Hanford ERO components -- the Hanford EOC and the Incident Command Organization. The figure was difficult to read due to its compressed size and, as such, the components were separated into two figures -- Figure 2-1 for the Hanford EOC and Figure 2-2 for the Incident Command Organization) -- for legibility. Minor changes were also made. In Figure 2-1, the News Writer duties were merged with the Web Page Coordinator duties allowing the News Writer box to be deleted. In Figure 2-2, a box was drawn around the Facility Emergency Response Organization positions for clarity, a new Resource Staging Area Manager box was created by separating the former Facility Staging Area Manager/Resource Staging Area Manager box, and a Finance/Admin. Section Chief box was added to be consistent with the NIMS model.

Modification Approved: [X] Yes [ ] No (state reason for denial)

Reason for denial:

Reviewed by Ecology: EK Shrivastava 11/14/12

Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Hanford Emergency Management Plan, DOE/RL-94-02	**Attachment 4**

Description of Modification:
DOE/RL-94-02, Section 2.2:

2.2 EMERGENCY RESPONSE ORGANIZATION STRUCTURE

.....For nonfacility events (e.g., onsite transportation incidents, wildland fires), the IC shall be responsible for coordinating and performing the response activities. The ~~ONC~~ Hanford EOC Shift Office shall have the responsibility for further classifying the event (i.e., as an Alert, Site Area Emergency, or General Emergency) and ensuring that the RCRA contingency plan implementation requirements have been met in accordance with subsection 4.2, if warranted. After the immediate threat of a release has been stabilized or eliminated, remaining duties will be delegated from the IC to the organization that offered the hazardous substance for transportation.....

WAC 173-303-830 Modification Class [1,2]	Class 1	Class 1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: B.6.d
Enter wording of WAC 173-303-830, Appendix I Modification citation:

Changes in name, address, or phone number of coordinators or other persons or agencies identified in the plan. The ONC (Occurrence Notification Center) name was changed on 11/08/12 to Hanford EOC Shift Office. In addition to occurrence reporting duties, the ONC has long been the 24-hour communication center in the Hanford EOC responsible for emergency notifications and activating the emergency alerting system. The new name better reflects these responsibilities and will be more easily recognized by both onsite and offsite organizations. Reference to the Hanford EOC Shift Office (from ONC) has been changed in other sections throughout DOE/RL-94-02 and needs to be changed in this section to maintain consistency.

Modification Approved: [X] Yes [ ] No (state reason for denial)
Reason for denial:

Reviewed by Ecology: EK Skeinaland 11/14/12
Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Hanford Emergency Management Plan, DOE/RL-94-02	**Attachment 4**

Description of Modification:
DOE/RL-94-02, Section 3.2.3:

3.2.3 U.S. Coast Guard

The U.S. Coast Guard (USCG) (through the Thirteenth District Commander in Seattle, Washington and the Captain of the Port in Portland, Oregon) may regulate activities on navigable waters within the Hanford Site, when necessary, to prevent harm to persons, property, and the environment in or on those waters.

The USCG will close the appropriate portion of the Columbia River and make a broadcast to mariners, as requested by Benton or Franklin County.

In the event of an emergency, the ~~ONC~~ Hanford EOC Shift Office will make notifications and provide information to the USCG in Portland, Oregon.

WAC 173-303-830 Modification Class [1 2]	Class 1	Class 1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: B.6.d
Enter wording of WAC 173-303-830, Appendix I Modification citation:

Changes in name, address, or phone number of coordinators or other persons or agencies identified in the plan. The ONC (Occurrence Notification Center) name was changed on 11/08/12 to Hanford EOC Shift Office. In addition to occurrence reporting duties, the ONC has long been the 24-hour communication center in the Hanford EOC responsible for emergency notifications and activating the emergency alerting system. The new name better reflects these responsibilities and will be more easily recognized by both onsite and offsite organizations. Reference to the Hanford EOC Shift Office (from ONC) has been changed in other sections throughout DOE/RL-94-02 and needs to be changed in this section to maintain consistency.

Modification Approved: ☒ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology: [signature] 11/14/12 Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Hanford Emergency Management Plan, DOE/RL-94-02	**Attachment 4**

Description of Modification:
DOE/RL-94-02, Section 3.4.1.2:

3.4.1.2 Fire and Emergency Medical. The Hanford Fire Department is signatory to the Tri-County Mutual Aid Agreement for fire agencies. The agreement provides mutual aid for fire or medical emergencies.

The Hanford Fire Department meets regularly with local fire agencies. The Hanford Fire Department and ~~AMH~~ HPMC representatives meet routinely with emergency medical service agencies to coordinate and share information.

WAC 173-303-830 Modification Class [1 2]	Class 1	Class 1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: B.6.d
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Changes in name, address, or phone number of coordinators or other persons or agencies identified in the plan. Change was made in order change contractor name. The occupational health services contact was awarded to HPMC (HPM Corporation Occupational Medical Services) that began 10/01/12. Reference to HPMC has been changed in other sections throughout DOE/RL-94-02 and needs to be changed in this section to maintain consistency.

Modification Approved: ☒ Yes ☐ No (state reason for denial)
Reason for denial:

Reviewed by Ecology:
E K Shrimpel 11/19/12.
Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Hanford Emergency Management Plan, DOE/RL-94-02	**Attachment 4**

Description of Modification:
DOE/RL-94-02, Section 5.1.2.1:

5.1.2.1 Initial/Verbal Notifications. For any incident which involves a spill, release, fire, explosion, or environmental permit exceedence, the respective site contractor environmental single point-of-contact shall be notified to determine applicability of requirements and perform appropriate environmental notifications. The respective site contractor environmental single point-of-contact shall notify the appropriate Federal, state and/or local agencies. Additionally, the ~~ONC~~ Hanford EOC Shift Office shall be notified in order to determine if an Abnormal Event notification is also required as delineated in subsection 5.1.3.

WAC 173-303-830 Modification Class [1 2]	Class 1	Class [1]1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: B.6.d
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Changes in name, address, or phone number of coordinators or other persons or agencies identified in the plan.
The ONC (Occurrence Notification Center) name was changed on 11/08/12 to Hanford EOC Shift Office. In addition to occurrence reporting duties, the ONC has long been the 24-hour communication center in the Hanford EOC responsible for emergency notifications and activating the emergency alerting system. The new name better reflects these responsibilities and will be more easily recognized by both onsite and offsite organizations. Reference to the Hanford EOC Shift Office (from ONC) has been changed in other sections throughout DOE/RL-94-02 and needs to be changed in this section to maintain consistency.

Modification Approved: [X] Yes [ ] No (state reason for denial) Reason for denial:	Reviewed by Ecology: EK Shrimlin 11/14/12. Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Hanford Emergency Management Plan, DOE/RL-94-02	**Attachment 4**

Description of Modification:

DOE/RL-94-02, Table 3-1:

Table 3-1. Memorandums of Understanding

PARTIES	SERVICES/AREAS OF COOPERATION	POINTS OF CONTACT	CONSTRAINTS	DATE	EXPIRATION DATE	WHERE ON FILE
...	...	...	...	...	...	...
Benton County	Document areas of cooperation between the parties in the planning for and response to emergencies at the Hanford Site.	Benton County Emergency Management	None	~~12/10/08~~ 11/28/11	Continue until canceled by either party by written notice to the other.	RL SES
Franklin County	Document areas of cooperation between the parties in the planning for and response to emergencies at the Hanford Site.	Franklin County Emergency Management	None	~~10/08/08~~ 12/28/11	Continue until canceled by either party by written notice to the other.	RL SES
Grant County	Document areas of cooperation between the parties in the planning for and response to emergencies at the Hanford Site.	Grant County Emergency Management	None	~~02/11/09~~ 12/28/11	Continue until canceled by either party by written notice to the other.	RL SES
Energy Northwest	Document areas of cooperation between the parties in the planning for and response to emergencies at the Hanford Site.	Energy Northwest Emergency Preparedness	The specific areas of assistance will be provided based upon availability, and are limited to those emergency actions necessary to protect onsite personnel, the public health and safety, and the environment in the event of a major emergency at the Hanford Site or Energy Northwest.	05/07/07	Continue until canceled by either of the parties upon 60 days written notice to the other party.	RL SES

WAC 173-303-830 Modification Class [1 2]	Class 1	Class 1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1

Enter wording of WAC 173-303-830, Appendix I Modification citation:

Administrative and informational changes. Change was made due to revision of the Benton, Franklin, and Grant County MOUs. The MOUs were revised to add the provision for DOE to warn boaters on the Columbia River with DOE's own resources.

Modification Approved: [X] Yes [ ] No (state reason for denial)

Reason for denial:

Reviewed by Ecology: 12/14/12

Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Hanford Emergency Management Plan, DOE/RL-94-02	**Attachment 4**

Description of Modification:
DOE/RL-94-02, Table 3-1:

Table 3-1. Memorandums of Understanding (cont.)

PARTIES	SERVICES/AREAS OF COOPERATION	POINTS OF CONTACT	CONSTRAINTS	DATE	EXPIRATION DATE	WHERE ON FILE
AREVA NP, Inc.	Establishes means by which RL can assist AREVA NP through use of RL facilities during an emergency at the AREVA NP plant in Richland, Washington	AREVA NP	Emergencies affecting the Hanford Site or Hanford facilities takes precedence over all other uses of the RL facilities.	~~01/19/07~~ 05/06/11	Continue until canceled by either of the parties upon 30 days written notice to the other party.	RL SES
...	...	...	...	...	...	...
Pasco Police Department	Mutual law enforcement assistance.	Pasco Police Department	Assistance will be provided subject to the provision of the agreement and any other conditions as the parties may agree.	04/03/09	Indefinite duration.	RL SES
U.S. Fish and Wildlife Service (FWS) and Mid-Columbia River National Wildlife Refuge Complex (NWRC)	Mutual law enforcement assistance.	FWS and NWRC	Agreement strictly for internal management purposes. It is not legally enforceable and not to create legal obligation.	07/28/09	Indefinite unless terminated upon 30 days written notice by either party to the other party.	RL SES
Washington Department of Fish and Wildlife (WDFW)	Mutual law enforcement assistance.	WDFW	Agreement strictly for internal management purposes. It is not legally enforceable and not to create legal obligation.	04/28/09	Indefinite unless terminated upon 30 days written notice by either party to the other party.	RL SES

WAC 173-303-830 Modification Class [1 2]	Class 1	Class 1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Administrative and informational changes. Change was made due to revision of the AREVA MOU, and inclusion of the US Fish and Wildlife/National Wildlife Refuge Complex and Washington Department of Fish and Wildlife MOUs. The AREVA MOU was revised at their request for new AREVA manager's signature. No other changes to the MOU were made. The two added MOUs, regarding mutual law enforcement assistance, have been in existence but not previously included in DOE/RL-94-02.

Modification Approved: [X] Yes [ ] No (state reason for denial)
Reason for denial:

Reviewed by Ecology:
E K Skrivanek 6/14/12
Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Hanford Emergency Management Plan, DOE/RL-94-02	**Attachment 4**

Description of Modification:
DOE/RL-94-02, Section 14.3.7:

14.3.7 Plan Locations

Copies of this plan are maintained at:

- RL and ORP Emergency Preparedness program offices;
- each contractor Emergency Preparedness office and other locations as specified by the respective contractor;
- Hanford Fire Department (area fire stations);
- ~~Occurrence Notification Center~~ Hanford EOC Shift Office;
- Hanford Emergency Operations Center (primary and alternate); and
- the Patrol Operations Center.....

WAC 173-303-830 Modification Class [1 2]	Class 1	Class 1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: B.6.d
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Changes in name, address, or phone number of coordinators or other persons or agencies identified in the plan.
The ONC (Occurrence Notification Center) name was changed on 11/08/12 to Hanford EOC Shift Office. In addition to occurrence reporting duties, the ONC has long been the 24-hour communication center in the Hanford EOC responsible for emergency notifications and activating the emergency alerting system. The new name better reflects these responsibilities and will be more easily recognized by both onsite and offsite organizations. Reference to the Hanford EOC Shift Office (from ONC) has been changed in other sections throughout DOE/RL-94-02 and needs to be changed in this section to maintain consistency.

Modification Approved: ☒ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology: EA Shumaker 11/19/12 Date

Remove and Replace the Following Sections:

Remove Permit Attachment 4, and replace with Permit Attachment 4, dated December 2012.

DOE/RL-94-02
Revision 5
Copy No. _____

Hanford Emergency Management Plan

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

U.S. DEPARTMENT OF ENERGY | Richland Operations Office
P.O. Box 550
Richland, Washington 99352

Approved for Public Release;
Further Dissemination Unlimited

DOE/RL-94-02
Revision 5

Copy No. ___

Hanford Emergency Management Plan

Date Published
December 2012

Approved by:

Matt McCormick, Manager
DOE Richland Operations Office

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

U.S. DEPARTMENT OF ENERGY | Richland Operations Office

P.O. Box 550
Richland, Washington 99352

APPROVED
By Janis D. Aardal at 2:13 pm, Dec 20, 2012

Release Approval Date

Approved for Public Release;
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ACRONYMS/ABBREVIATIONS

AEGL	Acute Exposure Guideline Level
ATL	Advanced Technologies and Laboratories, Inc.
BED	Building Emergency Director
BNI	Bechtel National, Inc.
BW	Building Warden
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHPRC	CH2M HILL Plateau Remediation Company
CPR	cardiopulmonary resuscitation
DOE	U.S. Department of Energy
DOE-HQ	U.S. Department of Energy, Headquarters
DOT	U.S. Department of Transportation
EAL	emergency action level
EAS	Emergency Alert System
Ecology	Washington State Department of Ecology
EDO	Emergency Duty Officer
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
EPHA	Emergency Planning Hazards Assessment
EPZ	emergency planning zone
ERAP	Emergency Readiness Assurance Plan
ERDF	Environmental Restoration Disposal Facility
ERG	Emergency Response Guidebook
ERO	emergency response organization
FAA	Federal Aviation Administration
FBI	Federal Bureau of Investigation
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
HPMC	HPM Corporation Occupational Medical Services
HQ	DOE-Headquarters
IC	Incident Commander
ICP	Incident Command Post
ICS	Incident Command System
JIC	Joint Information Center
MOU	memoranda of understanding
MSA	Mission Support Alliance, LLC.
NARAC	National Atmospheric Release Advisory Capability
NFPA	National Fire Protection Association
NIMS	National Incident Management System
ORP	U.S. Department of Energy, Office of River Protection
OSHA	Occupational Safety and Health Administration

ACRONYMS/ABBREVIATIONS (cont)

PAC	Protective Action Criteria
PAG	Protective Action Guideline
PAR	protective action recommendation
PCB	Polychlorinated biphenyl
PNNL	Pacific Northwest National Laboratory
PNSO	Pacific Northwest Site Office
POC	Patrol Operations Center
RAP	Radiological Assistance Program
RCRA	Resource Conservation and Recovery Act
RL	U.S. Department of Energy, Richland Operations Office
SCBA	self-contained breathing apparatus
SES	Office of Security and Emergency Services
SMT	Site Management Team
SRG	Scenario Review Group
TEDE	total effective dose equivalent
TEEL	Temporary Emergency Exposure Limit
TSD	treatment, storage, and disposal
UDAC	Unified Dose Assessment Center
USCG	U. S. Coast Guard
WAC	Washington Administrative Code
WCH	Washington Closure Hanford, Inc.
WRPS	Washington River Protection *Solutions*, LLC

1.0 INTRODUCTION

1.1 PURPOSE

The *Hanford Emergency Management Plan* incorporates into one document an overview of the Hanford Site emergency management program for the U.S. Department of Energy (DOE) Richland Operations Office (RL), Office of River Protection (ORP), Pacific Northwest Site Office (PNSO), and their respective site contractors. The program has been developed in accordance with DOE Orders as well as Federal and state regulations to protect worker and public health and safety and the environment in the event of an emergency at or affecting the Hanford Site.

This plan provides a description of how the Hanford Site will implement the provisions of DOE O 151.1C and other applicable DOE Orders in terms of overall policies and concept of operations. The plan should be used as the basis, along with DOE Orders, for the development of specific RL/ORP/PNSO and site contractor implementing procedures.

Additionally, portions of this plan, together with Hanford Site location/activity-specific documentation established to meet contingency plan requirements, meet the Washington Administrative Code (WAC) 173-303 requirements for the Hanford Site contingency plan. Many documents comprise the Hanford Site contingency plan. Applicability of this plan to Hanford Site activities is described in the Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit, Dangerous Waste Portion, General Condition II.A. General Condition II.A applies to Hanford Site activities at operating treatment, storage, and disposal (TSD) units, TSD units undergoing closure and/or post-closure activities, and to transportation incidents on the site in accordance with the applicability matrix delineated in Attachment 3 of the Hanford Facility RCRA Permit. For interim status TSD units and 90-day accumulation areas, these activities will be consistent with emergency preparedness policy and implementation techniques required by the Hanford Facility RCRA Permit, General Conditions II.A and II.B. Contingency plan requirements from WAC 173-303-350 met in this plan are identified in the crosswalk matrix in Appendix A.

This plan, together with each Polychlorinated biphenyl (PCB) temporary accumulation area location/activity-specific documentation, also meets the requirements for a Spill Prevention Countermeasures and Control (SPCC) Plan and the notifications required by 40 CFR 761.[1]

1.2 SCOPE

Event response is governed by an emergency preparedness documentation hierarchy that is shown in Figure 1-1. This hierarchy generally follows an integrated contingency plan approach. In such an approach, one set of documentation responds to a number of requirements (e.g., environmental regulations and DOE Orders). The crosswalk contained in Appendix A illustrates portions of this plan that address the specified requirements.

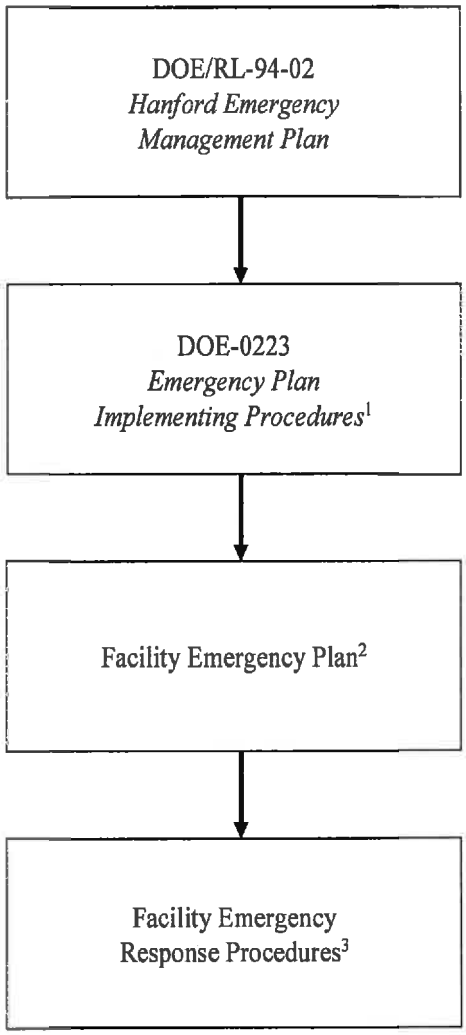
This plan describes the overall emergency organization, authorities, and responsibilities for response to and mitigation of emergency events involving facilities and activities on the Hanford Site. These events include the full spectrum of operational emergencies, natural phenomena, transportation events, and safeguard and security emergencies. This plan also describes the authorities, responsibilities, and agreements for response to offsite and near-site facility emergencies that have the potential for detrimentally affecting the health of personnel and safety of operations at the Hanford Site.

---

[1] Permit requirement: Subsection 1.1 (fourth paragraph), Class 1 Modification 9/30/99

Figure 1-1

Emergency Preparedness Documentation Hierarchy



[1] Some site contractors may implement DOE-0223 actions through contractor-specific emergency management documentation.

[2] Facility emergency plans can include building emergency plans, facility response plans, or facility emergency information boards.

[3] In some facilities, the facility emergency plan and emergency response procedures are integrated.

RL/ORP/PNSO and site contractors shall develop and maintain procedures or other documents necessary to implement the emergency management program described in this plan.

For the Hanford Site, these procedures shall include, but not be limited to, the following.

- Site-wide emergency procedures used by RL/ORP/PNSO and site contractors that delineate:
  - the operation of the Hanford Incident Command System and responsibilities of the Incident Command Organization;
  - the responsibilities for the Hanford Emergency Operations Center (EOC);
  - recognition, categorization/classification, and notification of emergencies and other incidents;
  - protective action recommendations (PARs);
  - response to nonradiological hazardous substance spills or releases during transportation incidents occurring on the site not covered by TSD unit-specific contingency plans or building emergency plans;

    NOTE: The term hazardous substances is defined in WAC 173-303-040 as: "any liquid, solid, gas, or sludge, including any material, substance, product, commodity, or waste, regardless of quantity, that exhibits any of the physical, chemical or biological properties described in WAC 173-303-090 or 173-303-100." Whenever the term "hazardous substances" is used in this document to denote the WAC 173-303 definition, the term will be referred to as "WAC hazardous substance." Otherwise, a hazardous substance will mean those regulated by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).
  - response to PCB spills or releases in accordance with 40 CFR 761;[2]
  - termination, reentry, and recovery for DOE Order emergencies and events that meet RCRA contingency plan implementation criteria; and
  - response to onsite and offsite shipments of DOE-owned radiological and nonradiological hazardous materials.
- Site contractor emergency procedures that:
  - enable the implementation of the responsibilities of the site contractors;
  - supplement, as necessary, implementation of RL/ORP/PNSO emergency procedures;
  - include facility and organizational plans and procedures for response to, and recovery and restoration from, specific emergency conditions, to include bomb threats, at Hanford Site facilities; and

[2] Permit requirement: Subsection 1.2 (first bullet, sixth dash), Class 1 Modification 9/30/99

- include building emergency plans and/or procedures which are required for buildings, facilities, and structures defined as a nuclear or reactor facility, regulated by the Washington State Department of Ecology (Ecology) Dangerous Waste Regulations, or regulated by the U.S. Environmental Protection Agency (EPA) Toxic Substances Control Act.[3]

In addition to the program for response to and mitigation of emergencies, this plan also provides direction on the activities necessary to ensure emergency preparedness on the Hanford Site such as training, drills, exercises, and evaluations. The authority and responsibility for interfaces with offsite organizations responsible for protecting the public and the environment, including those agencies that may provide or request support in the event of an emergency, is also delineated.

The RL responsibility to provide, upon request, radiological advice and assistance to other Federal, tribal, state, or local governments under the Radiological Assistance Program (RAP) is defined in DOE/RL-92-49, *U.S. Department of Energy Radiological Assistance Program Response Plan Region 8*.

1.3 CONCEPT OF OPERATION

An integrated and comprehensive Hanford Site emergency management program has been developed to ensure that:

- the site can respond effectively and efficiently to emergencies so that appropriate response measures are taken to protect workers, the public, the environment, and the national security;
- emergencies are promptly recognized, categorized, and classified, and parameters associated with the emergency are monitored to detect changed or degraded conditions;
- emergencies are reported and notifications are made; and
- reentry activities are properly and safely accomplished, and recovery and post-emergency activities commence properly.

1.3.1 Hanford Site Emergency Management Program Elements

There are five elements of the Hanford Site emergency management program. These elements are:

- emergency **planning** which includes identification of hazards and threats, hazard mitigation, development and preparation of emergency plans and procedures, and identification of personnel and resources needed for an effective response;
- emergency **preparedness** which includes acquisition and maintenance of resources, training, drills, and exercises;
- emergency **response** which includes the application of resources to mitigate consequences to workers, the public, the environment, and the national security, and the initiation of recovery from an emergency;
- **recovery** which includes planning for and taking actions following termination of the emergency to return the facility/operations to normal; and

[3] Permit requirement: Subsection 1.2 (second bullet, fourth dash), Class 1 Modification 9/30/99

- **readiness assurance** which includes assessments and documentation to ensure that stated emergency capabilities are sufficient to implement emergency plans.

1.3.2 Hanford Site Emergency Management Program Basis

The comprehensive Hanford Site emergency management program is based on and commensurate with the hazards and consequences associated with facilities and activities on the site (i.e., developed consistent with a graded approach); offsite facilities that may impact the site; and onsite and offsite RL/ORP/PNSO transportation emergency preparedness activities involving radiological and nonradiological hazardous materials.

1.3.2.1 Operational Emergency Base Program. Each site facility (general purpose, low-hazards, and hazardous) shall have an Operational Emergency Base Program that establishes a minimum set of generic requirements and provides the framework for response to serious events involving health and safety, the environment, safeguards, and security. These events are not unique to DOE operations.

The Operational Emergency Base Program shall provide for compliance with applicable regulations and plans developed by other Federal agencies and DOE offices, and with those state and local planning and preparedness requirements that apply in accordance with DOE O 151.1C.

Additionally, the Operational Emergency Base Program shall provide for integrated planning to meet the response requirements identified in the hazards survey. Hazards surveys are discussed further in subsection 1.3.3.1. Response requirements may include, but are not be limited to, emergency response organization, emergency categorization, notifications and communications, protective actions, emergency equipment, and training and drills. Each of these requirements is discussed in subsequent sections of this plan.

1.3.2.2 Operational Emergency Hazardous Material Program. The Operational Emergency Hazardous Material Program adds to the Operational Emergency Base Program. Depending on the findings of the hazards survey, site facilities may be required to establish and maintain a quantitative emergency planning hazards assessment (EPHA). The EPHA will be used to define the provisions of the Operational Emergency Hazardous Material Program to ensure the program is commensurate with the hazards identified. Such EPHAs are required if the hazard survey identifies hazardous materials exceeding the radiological and/or chemical threshold quantities established by DOE. The results of this assessment provide the technical basis for establishing a graded approach that will meet the program requirements. The Operational Emergency Hazardous Material Program shall be adjusted to be commensurate with hazards that remain after a decontamination and decommission action is completed at each facility/activity.

The extent of planning and preparedness directly corresponds to the type and scope of hazards present and the potential consequences of events. EPHAs prepared for Hanford Site hazardous facilities include identification of hazards and targets unique to a facility, analysis of potential events, and evaluation of potential event consequences. EPHAs are discussed further in subsection 1.3.3.3.

Using the accident scenarios and consequences identified in a facility EPHA, the observable methods of detecting or recognizing an emergency can be identified. These indicators, called emergency action levels (EALs), are used to determine the emergency classification. The emergency classification is used to trigger specified, preplanned responses and protective actions.

Emergency classification and EALs are described further in the respective subsections of section 4.0. For each emergency classification there shall be predetermined protective actions necessary to protect onsite personnel as well as recommended actions for the protection of offsite populations.

The Hanford Emergency Response Organization (ERO) shall be formed, trained, and tested to ensure the recognition and classification of emergencies, and the implementation of protective actions. Recognition and classification of emergencies and protective action implementation is described further in subsequent sections of this plan.

1.3.2.3 Hanford Transportation Emergency Preparedness Program. The Hanford Transportation Emergency Preparedness Program provides the framework for response to onsite and offsite transportation incidents involving radiological and nonradiological hazardous material.

For transportation planning purposes, shipments transported on roadways north of the site's Wye Barricade are not considered "in commerce" under the U.S. Department of Transportation (DOT) regulations found in 49 CFR. Shipments transported south of the Wye Barricade are considered "in commerce" under DOT regulations in 49 CFR, unless public access control is extended south of the Wye Barricade for special case shipments.

For transportation incidents that occur on the site, the Incident Command System is used to mitigate the situation. Upon notification of the event by the Patrol Operations Center (POC), the Hanford Fire Department shall assume incident command responsibilities. The Hanford EOC Shift Office shall have the responsibility for event classification and activation of the Hanford ERO as appropriate.

For transportation incidents involving DOE-owned hazardous materials that occur off the site, emergency contact information shall be provided to first responders in accordance with DOT 49 CFR requirements. The designated emergency contact number shall be the POC, or one of the contractors' staff or their single point-of-contact. The Hanford EOC Shift Office shall have the responsibility for event classification and activation of the Hanford ERO as appropriate.

Figure 1-2 outlines the response approach to a transportation emergency.

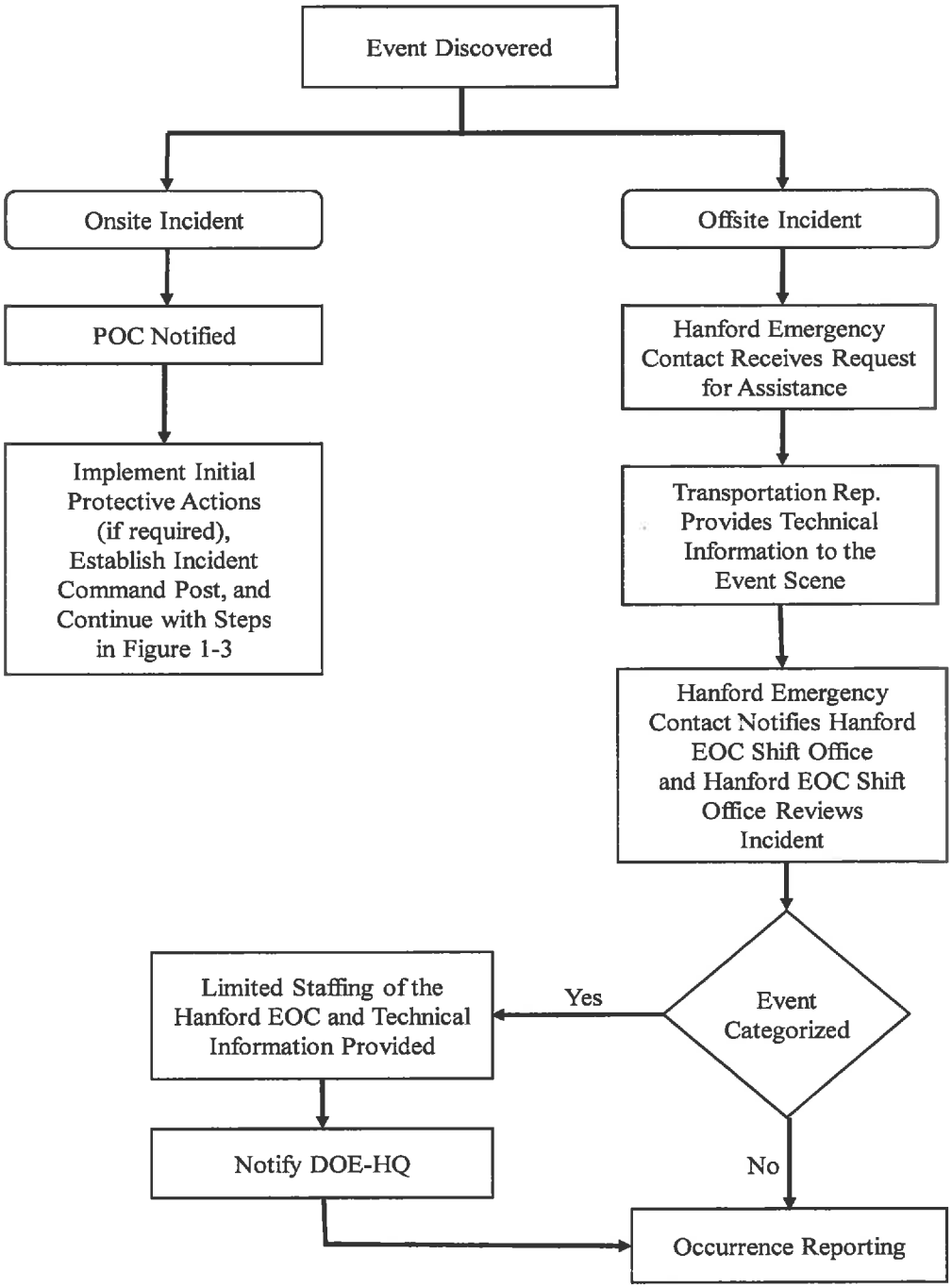
1.3.3 Hazards Survey and Emergency Planning Hazards Assessment

Hazards surveys and EPHAs are used for emergency planning purposes. DOE O 151.1C requires that emergency management efforts begin with the identification of hazards and that the scope and extent of emergency planning and preparedness be commensurate with the hazards. The hazards survey briefly describes the potential impacts of emergency events or conditions and summarizes the planning and preparedness requirements that apply. The EPHA includes the identification and characterization of hazardous materials (radiological and nonradiological) specific to a facility/activity, analyses of potential accidents or events, and evaluation of potential consequences.

1.3.3.1 Hazards Survey Process. A hazards survey (i.e., qualitative examination) shall be prepared to identify the conditions to be addressed by the comprehensive emergency management program. Much of the facility hazards survey should already have been done in the course of meeting other DOE, Federal, and state agency requirements. A hazards survey is an examination of the features and characteristics of the facility or activity to identify the generic emergency events and conditions (including natural phenomena such as earthquakes and tornadoes; wild land fires; and other serious events involving or affecting health and safety, the environment, safeguards, and security at the facility) and the potential impacts of such emergencies.

Figure 1-2

Transportation Emergency Response



A hazards survey may cover multiple facilities and shall be updated every three years and prior to significant changes to the site/facility or to hazardous material inventories.

Additional information/guidance to assist in the preparation of hazards surveys is delineated in DOE-0223, *Emergency Plan Implementing Procedures*, and applicable sections of the DOE *Emergency Management Guide* (DOE 2007).

1.3.3.2 Emergency Planning Hazards Assessment Process.[4] The release or loss of control of hazardous materials (radiological and nonradiological) shall be quantitatively analyzed. If the results of the analysis indicate the potential for an Alert, Site Area Emergency, or General Emergency, the results of the analysis shall be used to determine the necessary personnel, resources, and equipment for the Hazardous Materials Operational Emergency Program.

If the EPHA indicates that all events would be classified as less than an Alert, an EPHA is not required to be maintained. The results of the hazardous material screening process and the quantitative analysis may be incorporated directly into the hazards survey or may be incorporated by reference in the hazards survey. The minimum program requirements shall encompass the requirements for Hazardous Waste Operations and Emergency Response found in 29 CFR 1910.120 and the Base Program Operational Emergency requirements specified in this plan.

An accurate and timely method for tracking changes in operations processes, or accident analyses that involve hazardous materials (e.g., introduction of new materials, new uses, significant changes in inventories, modifications of material environments) shall be established and maintained for each facility/activity. The method shall allow sufficient time for appropriate facility/activity personnel to review the EPHA and modify plans and procedures, as necessary.

Each facility with hazardous materials (radiological, chemical, biological agents and toxins) in sufficient quantities (radioactive or chemical materials) or representing specific biological agents/toxins, which pose a serious threat to workers, the public, or the environment shall develop and maintain a quantitative EPHA and meet more detailed emergency planning requirements. Hazardous materials are any solid, liquid, or gaseous material that is toxic, flammable, radioactive, infectious, corrosive, chemically reactive or unstable upon prolonged storage in quantities that could pose a threat to life, property, or the environment. While not every conceivable situation will be analyzed, the EPHA will provide the framework for response planning to virtually any declared emergency.

The EPHA shall be reviewed at least every three years and updated prior to significant changes to the facility or hazardous material inventories, and be maintained in accordance with site contractor document control requirements. Changes that result in a reduction of hazards with no adverse effect on safety or emergency preparedness and response may be included in the next scheduled review and update.

In addition, the EPHA shall include a determination of the size of the emergency planning zone (EPZ). The EPZ is the geographic area surrounding the site/facility for which special planning and preparedness actions are taken or need to be taken to reduce or minimize the impact to onsite personnel and public health and safety in the event of a Hazardous Material Operational Emergency. Assumptions, methodology, models, and evaluation techniques used in the EPHA shall be documented.

An EPHA shall be developed for shipments that do not satisfy governing DOT regulations and specifications for commercial hazardous materials transport. However, if a shipment satisfies DOT regulations and specifications, an EPHA is not required.

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[4] Permit requirement: Subsection 1.3.3.2, Class 1 Modification 6/30/10

If EPHAs do not contain classified information or Unclassified Controlled Nuclear Information, they shall be reviewed by an authorized individual to determine if they contain potentially exploitable information. EPHAs containing potentially exploitable information shall be protected as Official Use Only under exemption 2 of the Freedom of Information Act.

Additional information/guidance to assist in the development of EPHAs is delineated in DOE-0223, *Emergency Plan Implementing Procedures*, and applicable sections of the DOE *Emergency Management Guide* (DOE 2007).

1.3.4 Hanford Site Emergency Response[5]

This section provides an overview of how the Hanford Site responds to events. It covers the actions to be taken for an event by the event discoverer, the facility staff, and by agencies such as the Hanford Fire Department and/or Hanford Patrol.

Since the Hanford Site has a diverse array of facilities and processes, a graded approach is used to respond to an event depending upon the nature of a facility and/or the severity of the event. There are a number of events to which the site has to be ready to respond, including releases, spills, operational events, fires, natural phenomenon, and security events.

The discoverer of an event (e.g., fire, release, spill, transportation incident, etc.) initiates response to the event that should include implementation of SWIM (**Stop** activities at the scene; **Warn** personnel; **Isolate** the area; **Minimize** exposure to the hazards) to the extent possible. For some events, specific response actions to mitigate the event by the discoverer and/or facility staff may be appropriate. In such cases, actions may include shutting down systems, isolating materials, or performing other facility specific response actions when appropriate. Facility procedures may also direct protective actions for personnel.

In other events, resources outside the facility may be required. In these cases, the general response approach is outlined in Figure 1-3 and requires the discoverer to call the 911 emergency number (or 373-0911 for cellular telephones). Upon being contacted, the 911 emergency center assesses the situation and notifies the primary response agencies – the Hanford Fire Department and Hanford Patrol – that respond and ensure implementation of the Hanford Incident Command System (ICS).

> NOTE: Fire alarm pull boxes and fire sprinkler flow monitoring devices, which are connected to a system monitored by the Hanford Fire Department, and Hanford's general operation two-way radio system (hand-held and vehicle mounted), which is monitored in the 911 emergency center, are also available for summoning emergency response agencies.

The Hanford ICS is an integrated emergency management system with clearly defined responsibilities and communication pathways consistent with the National Incident Management System (NIMS) that provides a graded approach for emergency management based upon the needs of the event. Additionally, the Hanford ICS is designed to support predesignated and trained facility emergency response organization (ERO) members (i.e., Building Emergency Director, Building Warden, etc.) to complete required emergency response activities and to support emergency response agencies in the implementation of incident mitigation strategies.

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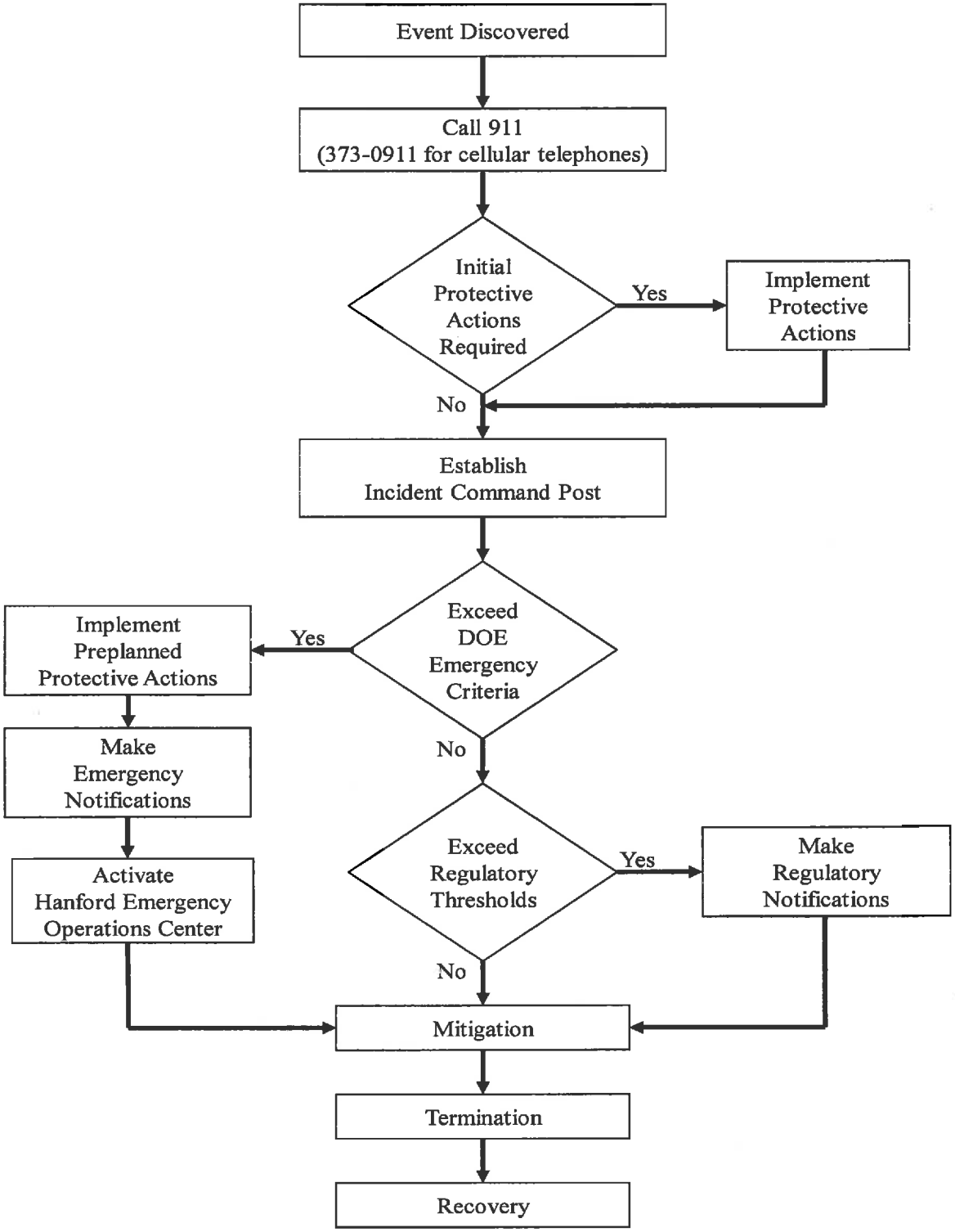
[5] Permit requirement: Subsection 1.3.4, Class 1 Modification 12/31/12

Figure 1-3

Emergency Response



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The senior Hanford Fire Department official becomes the Incident Commander (IC), unless the event is determined to primarily be a security event, in which case the Hanford Fire Department and Hanford Patrol will operate under a unified command system with Hanford Patrol making all decisions pertaining to security.

When the Hanford ICS is established, a coordinated effort to plan and implement additional mitigative activities commences. In addition, the consequences of the event are further analyzed and additional protective actions are implemented through the use of Hanford Site Emergency Alerting System components and barricades if determined necessary.

Whenever there is an event at Hanford, certain notifications are required depending upon the type and severity of the event. These notifications would include management notifications, activation of emergency response personnel, and offsite agency notifications as necessary. These notifications are performed primarily by the Hanford EOC Shift Office and site contractor environmental single points-of-contact. For events that do not meet emergency criteria but could cause public concern or media interest, local and state emergency management agencies are notified as well as state regulatory agencies for information purposes. If the event exceeds regulatory criteria, the appropriate regulatory agencies are notified immediately.

Concurrent with the immediate notifications to the appropriate regulatory agencies, if the event is severe enough to be classified as an Alert, Site Area Emergency, or General Emergency, state and county agencies are notified within 15 minutes of declaration of the emergency. This notification allows the agencies to implement protective actions for their populations if necessary, and to begin mobilization of resources. In addition, preplanned protective actions are implemented for site personnel and the Hanford EOC is activated to support the Incident Command Organization and coordinate interface with offsite agencies.

Upon mitigation of the event to the point the situation is stabilized and ensuring that actions have been taken to prevent reoccurrence, the event is terminated and the recovery effort begins. Recovery is the process of planning for and implementing actions to return the facility/process to pre-event conditions. Actions could include activities such as equipment repair, decontamination, proper storage of waste generated, and providing any follow-up reporting to appropriate regulatory agencies.

1.4 SITE DESCRIPTION

1.4.1 Site Description Overview

The 1,517 square kilometer (586 square mile) Hanford Site was originally acquired by the Federal government in 1943 for the construction and operation of facilities to produce plutonium that was used to help end the Second World War. In 1989, the Hanford Site mission changed from one of national defense production to waste management, environmental restoration, and technology development.

Hanford Site contractors operate/manage facilities and provide site services for RL/ORP/PNSO. The site contains several types of complex facilities, including retired nuclear reactors, retired and active chemical processing facilities, nuclear waste storage tanks, and research laboratories. There are approximately 1,500 buildings (occupied and unoccupied) on the site with an infrastructure of utilities and transportation necessary to support an operation employing approximately 15,000 workers.

The Hanford Site is also defined as a single *Resource Conservation and Recovery Act of 1976* facility, identified by the EPA/State Identification Number WA7890008967, that consists of over 60 TSD units. This area consists of the contiguous portion of the Hanford Site that contains these TSD units and, for the purposes of the RCRA, is owned and operated by the U.S. Department of Energy (excluding lands north and east of the Columbia River, river islands, lands owned or used by the Bonneville Power Administration, lands leased to Energy Northwest, and lands owned by or leased to the state of Washington).

1.4.1.1 Hanford Site Facilities/Activities. The major facilities and activities on the Hanford Site, that are DOE-owned and contractor-operated, are grouped together in the following major areas.

- 100 Areas: These areas are located along the Columbia River in the northern portion of the Hanford Site and contain nine former plutonium production reactors. The facilities in the 100 Areas are currently being prepared for permanent disposal.
- 200 East and 200 West Areas: These areas lie on a plateau near the center of the site some 40 kilometers (25 miles) north of Richland, Washington, and are dedicated to waste management and treatment activities, laboratory support, waste characterization, and environmental restoration.
- 300 Area: This area is approximately 8 kilometers (5 miles) north of Richland, Washington. Major activities include nuclear research and development.
- 400 Area: This area, approximately 15 kilometers (9 miles) north of Richland, Washington, contains the Fast Flux Test Facility (currently in decontamination and decommissioning process) and related support facilities formerly involved in the liquid metal reactor program.
- 600 Area: This area includes all of the Hanford Site not occupied by the other listed areas. Land uses include the 310-square-kilometer (120-square-mile) Fitzner/Eberhardt Arid Lands Ecology Reserve, the Environmental Restoration Disposal Facility (ERDF), and a U.S. Fish and Wildlife Refuge.

The site also contains several major and minor operations that are not DOE-owned/contractor operated. The major operations include the following.

- A publicly-owned commercial nuclear power plant, Columbia Generating Station, operated by Energy Northwest on land leased from the Federal government on the eastern side of the site, near the Columbia River and about 15 kilometers (9 miles) north of Richland.
- A low-level radioactive waste disposal site located near the 200 Areas, on land that the state of Washington has leased from the Federal government. This facility is commercially operated by the US Ecology Company in accordance with state and Federal licenses and permits.
- A commercial incubator project, administered by the Port of Benton, which will lease up to 22 excess site buildings adjacent to the 400 Area for private-sector businesses.
- An observatory to monitor the earth's gravitational waves, Laser Interferometer Gravitational Observatory (LIGO), located in the northern part of the 600 Area.

RL/ORP/PNSO and site contractors also own or lease site-related office and warehouse facilities off the Hanford Site in the city of Richland. These facilities cannot generate an Alert or higher emergency.

1.4.1.2 Hazards. Activities at the Hanford Site involve both radiological and nonradiological hazardous materials. Major hazardous materials emergencies are associated with the potential for fire, explosion, or dispersion of radiological or toxic chemicals.

A significant hazard requiring emergency planning on the Hanford Site stems from the presence of large quantities of radioactive materials from the various separations, waste storage, research, and previous production and manufacturing materials. These materials, although contained, could affect worker and public health and the environment in the event of dispersion during a major accident.

In addition, large quantities of various nonradiological hazardous materials are stored and used in chemical processing and other operations at the Hanford Site. Hazardous materials are routinely transported by truck and rail to and around the site and are stored at various onsite locations. State Route 240, a main public highway that runs through the site, is used for transporting a wide range of chemicals, including agricultural chemicals to farms and orchards in the surrounding area.

Typically, hazardous materials of concern for emergency planning purposes include petrochemicals, explosives, toxic chemicals and chemical products, and fuel gases (e.g., propane and butane). Hazardous chemicals of particular concern are gases such as chlorine that have the potential to form large, toxic airborne clouds that may travel long distances before dispersing.

For purposes of emergency planning, facilities on the Hanford Site are described as general purpose, low-hazards, or hazardous. The DOE O 151.1C Operational Emergency Base Program applies to general purpose, low-hazards, and hazardous facilities. The Operational Emergency Hazardous Material Program adds to the Operational Emergency Base Program and applies only to hazardous facilities.

1.4.1.3 Contractors. The major Hanford Site contractors, responsible in their respective capacities for the operation or management of the Federal facilities, include the following.

- Mission Support Alliance, LLC. (MSA). Under contract with RL, MSA manages the Mission Support Contract that provides infrastructure and site services. The scope of the contract includes five primary functions: Safety, Security and Environment; Site Infrastructure and Utilities; Site Business Management; Information Resources/Content Management; and Portfolio Management.

- CH2M HILL Plateau Remediation Company (CHPRC). Under contract with RL, CHPRC manages the Plateau Remediation Contract to clean up and restore the environment to protect the Columbia River. Activities include completion of the Plutonium Finishing Plant project; characterization of facilities and waste sites; disposal activities related to non-tank farm waste; environmental surveillance and maintenance; groundwater monitoring and remediation; environmental remediation; and development of documents for regulatory and other decisions covering groundwater, soil, and facilities.

- Washington Closure Hanford, Inc. (WCH). Under contract with RL, WCH manages the River Corridor Closure Contract to clean up and take down excess facilities, remediate waste sites and burial grounds, and place deactivated plutonium production reactors into a safe and stable condition.

- HPM Corporation Occupational Medical Services (HPMC). Under contract with RL, HPMC provides occupational health services to Hanford Site employees.

- Washington River Protection *Solutions* (WRPS), LLC. Under contract with ORP, WRPS manages the Tank Operations Contract to store, retrieve and, treat radioactive tank waste and close the tank farms.

- Advanced Technologies and Laboratories International, Inc. (ATL). Under contract with ORP, ATL manages the Analytical Services Production Contract and performs routine analytical chemistry services in support of the Hanford Site cleanup.

- Bechtel National, Inc. (BNI). Under contract with ORP, BNI manages the Waste Treatment Plant Project to design, build, and start up waste treatment facilities that will transform liquid radioactive waste, currently stored in underground tanks, into a stable glass waste form through a process known as vitrification.

- Pacific Northwest National Laboratory (PNNL). Under contract with PNSO, PNNL occupies some Hanford Site 300 Area buildings to conduct research and development. PNNL also performs Unified Dose Assessment Center (UDAC) activities for RL.

1.4.2 Physical Attributes of the Hanford Site

The Hanford Site is located in the southeastern area of the state of Washington. The site covers approximately 1,517 square kilometers (586 square miles) located in Benton, Franklin, and Grant Counties just northwest of the cities of Richland, Kennewick, and Pasco (Tri-Cities).

For emergency preparedness purposes, the Hanford Site is defined as the near (south and west) bank of the Columbia River from the intersection of the existing western most site boundary and the Columbia River, following the Columbia River to the south boundary of the 300 Area, and proceeding west and north along the existing site boundary (see Figure 1-4). Based on this definition, portions of the existing Hanford Site that fall within Grant and Franklin Counties are considered outside of the site boundary.

The Columbia River runs across the northern half of the site then flows south across the eastern side of the site. The Yakima River borders part of the southern boundary of the site and joins the Columbia River below the city of Richland. A worst-case flood of the Columbia River or catastrophic breach of Grand Coulee Dam could impact parts of the 100 and 300 Areas but the central portion of the site would remain unaffected.

The Hanford Site and surrounding area has a semiarid climate with a sparse covering of vegetation. The terrain of the central and eastern parts of the site is relatively flat. Rattlesnake Mountain, the Yakima Ridge, and the Umtanum Ridge continue onto the site from the west and form the southwestern and western boundary. Two small ridges, Gable Butte and Gable Mountain, rise above the plateau on the central part of the site. It is an area of low seismicity in which moderate-level earthquakes can occur.

The area has moderate winters and hot summers. Severe thunderstorms are rare, although the site is vulnerable to lightning strikes causing wildland fires. Formation of a severe tornado is highly unlikely.

Primary land uses of the surrounding areas are irrigated and nonirrigated farming, residential living, and state- and Federal-controlled lands.

Because of the size of the site, there may be differences in the specific physical attributes in the vicinity of each hazardous facility. Detailed discussions and analysis of the local geography, geology, seismology, meteorology, and hydrology in the area of each hazardous facility are contained in safety analysis reports.

1.4.2.1 Population Diversity. The permanent population within the 50-mile (80-kilometer) site ingestion exposure EPZ (Figure 1-5), which is centered on Energy Northwest's Columbia Generating Station, is approximately 270,000. The maximum transient population within the ingestion EPZ, including Hanford Site workers, offsite workers, and recreationists, is approximately 17,000.

The plume EPZ population diversities for Hanford Site EPZs are as follows.

- 100K Area: A small portion of a sparsely populated area of southern Grant County consisting of a permanent population, a transient population of seasonal employees, and no special populations.

- 200W Area: A small portion of a sparsely populated area of northwestern Benton County and southern Grant County consisting of a permanent population, a transient population of seasonal employees, and no special populations.

- 300 Area: A portion of western Franklin County consisting of a permanent population, a transient population of seasonal employees, and no special populations. Also, a portion of the northern section of the city of Richland consisting of a permanent population, a transient population of seasonal employees, and special populations consisting of four schools and three pre-schools.

During the summer months, recreationists may be using the section of the Columbia River between Richland and Vernita.

Plume and ingestion EPZs are discussed further in subsection 7.1. Figure 7-1 depicts the EPZs for each site geographical areas with potential offsite consequences.

1.4.2.2 Transportation System. Hundreds of miles of roads are maintained on the Hanford Site. State Routes 240 and 24 and site roads are used by many types of vehicles including commercial trucks and private vehicles.

A 26-kilometer (16-mile) stretch of the southern portion of the site's 169-kilometer (105-mile) railroad system has been transferred to the Port of Benton. Portions of the remaining railroad lines are used occasionally.

The Richland Airport, nearest to the Hanford Site, is a small, general utility airport. The Tri-Cities Airport (in Pasco) is used by regional carriers.

The section of the Columbia River that flows near the Hanford Site is used mainly by recreationists. Barge traffic does not operate on the stretch of the river that goes through the site.

Figure 1-4

Hanford Site Map

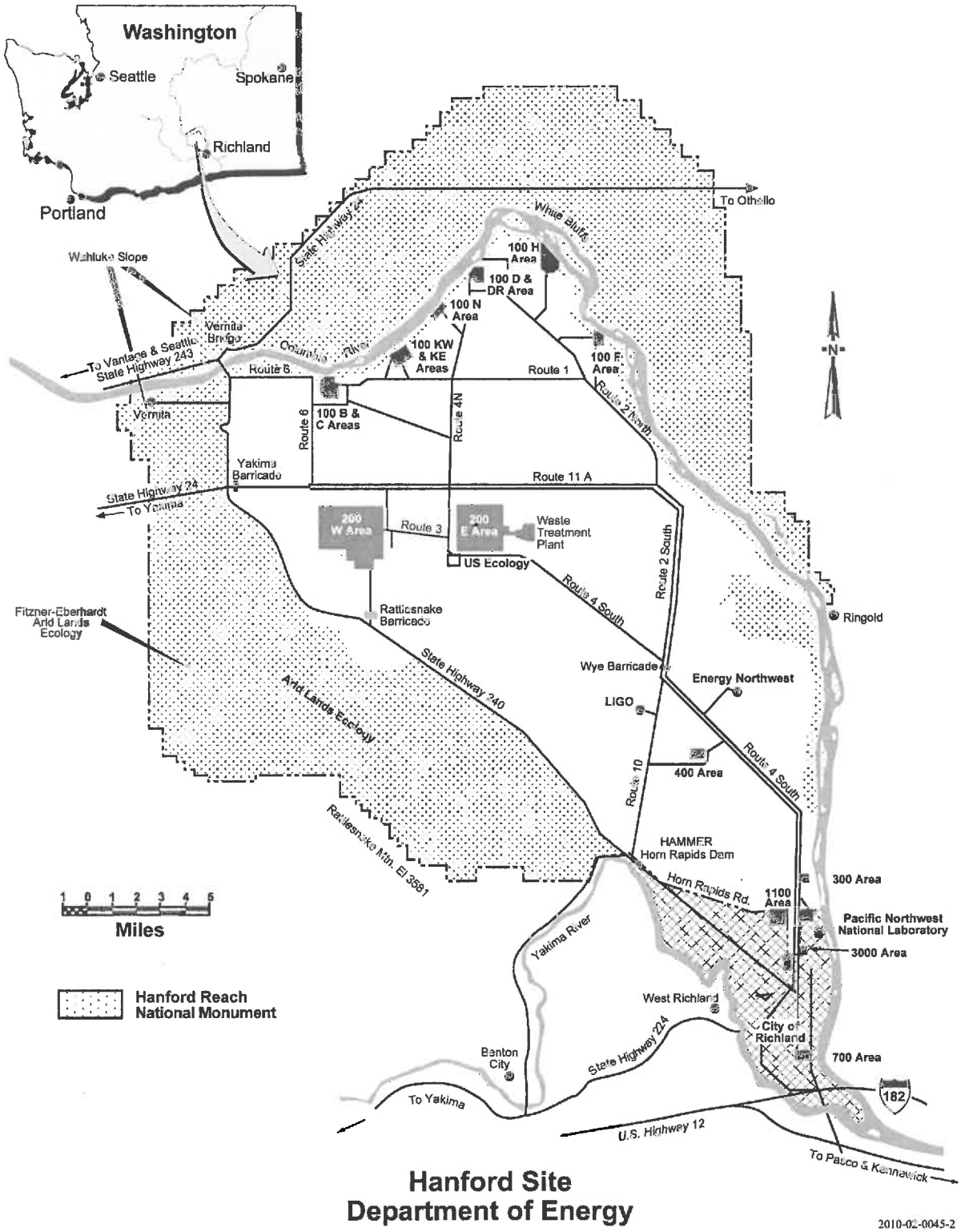
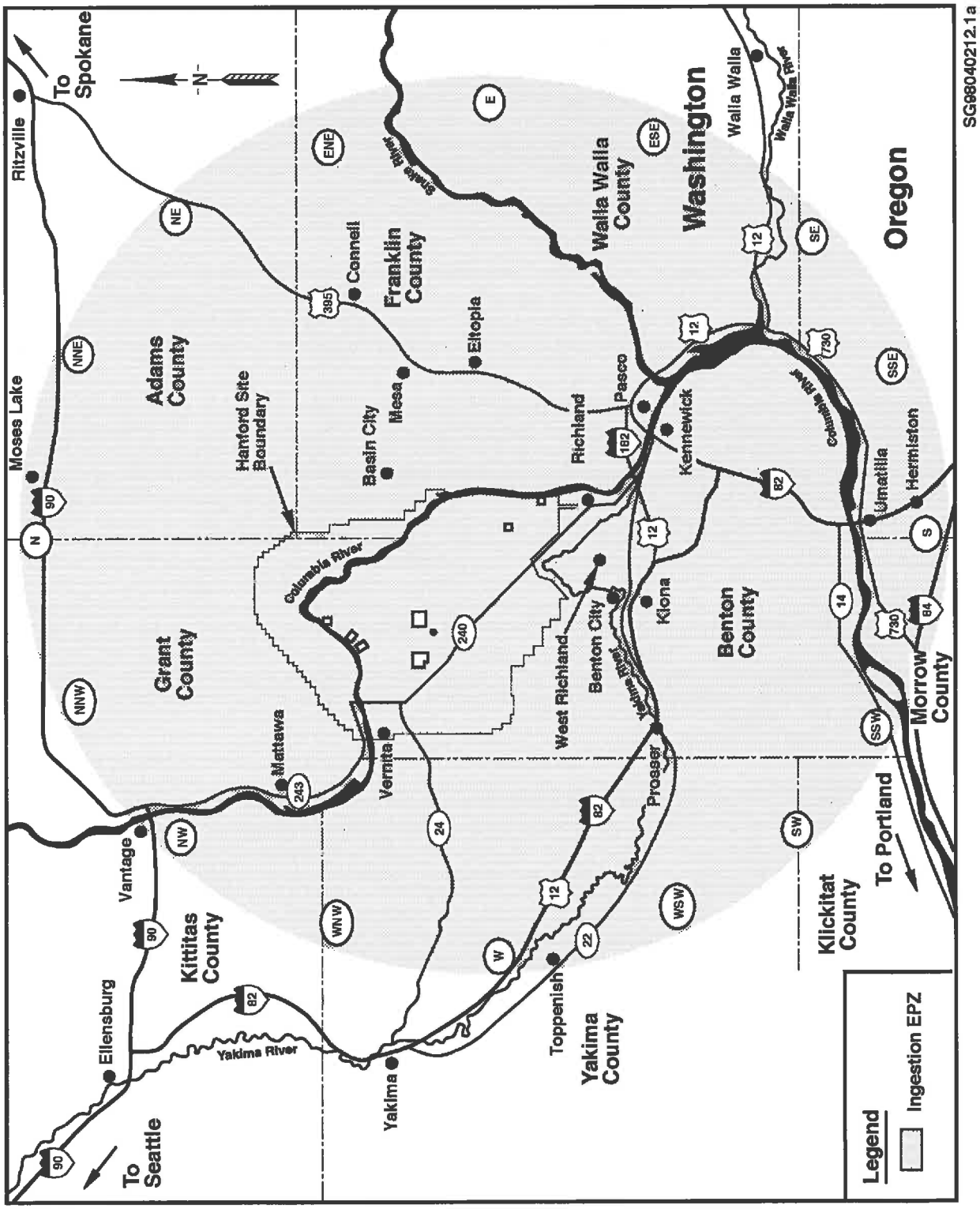


Figure 1-5

Ingestion Exposure Emergency Planning Zone



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2.0 EMERGENCY RESPONSE ORGANIZATION (INTERNAL)

The mission of the Hanford Site ERO is to ensure that, in the event of an emergency, actions will be taken to prevent or minimize impacts to workers, the public, site, facilities, and the environment. The Hanford Site ERO shall be structured and staffed with an adequate number of experienced and trained personnel, including designated alternates, available on demand for timely and effective performance of ERO functions. Hanford facilities and response organizations such as the Hanford Fire Department are governed by the standards and regulations of the National Fire Protection Association (NFPA) and Code of Federal Regulations, as well as the Washington Administrative Code and Revised Code of Washington for emergency response, training, and on-scene emergency management.

2.1 U.S. DEPARTMENT OF ENERGY, RICHLAND OPERATIONS OFFICE, OFFICE OF RIVER PROTECTION, PACIFIC NORTHWEST SITE OFFICE, AND HANFORD SITE CONTRACTOR ROLES AND RESPONSIBILITIES

2.1.1 Hanford Site Contractors

Hanford Site contractors with responsibilities for facility operations/activities or for providing site services shall coordinate with one another and participate in the development and maintenance of a comprehensive Hanford Site emergency management program that meets the mission of the Hanford Site ERO. Such programs shall contribute to DOE's comprehensive Emergency Management System by promoting effective and efficient integration of applicable requirements, including those promulgated by other agencies.

2.1.1.1 Event Contractor. The site contractor that maintains responsibility for the facility or activity with the emergency is designated as the event contractor. The event contractor responsibilities include:

- prompt and accurate categorizing of occurrences in accordance with this plan and DOE O 232.2, *Occurrence Reporting and Processing of Operations Information*;
- initially classifying the emergency, if warranted;
- assisting, as necessary, in mitigating the emergency situation;
- initiating actions to protect workers within their geographic area of responsibility;
- contacting the POC and providing initial emergency information;
- requesting support from nonevent site contractors as necessary;
- establishing an initial command post and, as appropriate, assigning other Incident Command Organization functions as delineated in Table 2-1, and other supporting entities such as radiological control technicians and industrial hygienists as available;
- arranging for employer notification (if not an event contractor employee), decontamination, and transport of a contaminated corpse;
- providing personnel to staff the Hanford EOC to include management and technical staff;
- providing event status information to the Hanford EOC;
- ensuring proper cleanup, transportation, and storage of hazardous materials generated as a result of the event; and
- providing funding for performance of emergency response and recovery duties and replacement of supplies used by other contractors for event response.

Other site contractors shall provide support to the event contractor for actions related to the services they provide on the site, such as notifications, fire, security, or medical services.

Table 2-1

Incident Command Organization Functions

FUNCTION	RESPONSIBLE STAFFING
Incident Commander	Hanford Fire Department[1]
Building Emergency Director/Building Warden	Affected facility
EOC Liaison Officer	MSA or appropriate contractor personnel
Safety Officer	Hanford Fire Department
Incident Command Post (ICP) Communicator	Affected hazardous facility
ICP Hazards Communicator	Affected hazardous facility
Facility Operations Specialists	Affected facility
Operations Section Chief	Hanford Fire Department/Hanford Patrol
Radiological Hazards Assessor	Affected facility radiological control manager (or equivalent)
Chemical Hazards Assessor	Hanford Fire Department, on-call industrial hygienist, or affected facility
Planning Section Chief	Hanford Fire Department
Logistics Section Chief	Hanford Fire Department
Resource Staging Area Manager	Hanford Fire Department
Facility Staging Area Manager	Affected facility

[1]During security events, the Hanford Fire Department and Hanford Patrol will operate under a unified command system with Hanford Patrol making decisions pertaining to security.

2.1.1.2 Mission Support Alliance, LLC. In addition to event contractor responsibilities for the Hanford Site facilities it operates, MSA emergency responsibilities include:

- fire suppression, emergency rescue, emergency medical, hazardous materials response, fire protection services, and incident response provided by the Hanford Fire Department;
- site security, access control, emergency service call answering and dispatching, and transportation emergency response contact provided through the Hanford Patrol;
- emergency communications including onsite and offsite notifications provided by the Hanford EOC Shift Office;
- staffing of a 24-hour Emergency Duty Officer (EDO) position;

- managing and ensuring that the Hanford EOC is staffed with qualified personnel;
- providing personnel to staff the Hanford EOC to include management and technical staff;
- onsite and offsite radiation monitoring and sampling;
- weather information from the Hanford Site meteorology station;
- transportation (e.g., motor carrier services, crane and rigging) and heavy equipment operations;
- services in support of reentry and recovery operations, such as decontamination, engineering, equipment maintenance, utilities, procurement, and waste disposal;
- radio, telecommunications, computer, and audio/visual services;
- evaluation of radiological doses to personnel in the event of a criticality emergency; and
- managing site-wide radiological tasks which includes plume assessment and tracking; large group personnel survey, sort, and decontamination; survey of individuals evacuated from the Columbia River (if requested); and radiological control support during medical care of radiation accident patients at the local hospitals.

2.1.1.3 CH2M HILL Plateau Remediation Company. In addition to event contractor responsibilities for the Hanford Site facilities it manages, CHPRC emergency responsibilities include:

- providing personnel to staff the Hanford EOC to include management and technical staff;
- radiological control technician support; and
- health technician support.

2.1.1.3 Washington Closure Hanford, Inc. In addition to event contractor responsibilities for the Hanford Site facilities it manages, WCH emergency responsibilities include:

- providing personnel to staff the Hanford EOC to include management and technical staff; and
- radiological control technician support.

2.1.1.4 HPM Corporation Occupational Medical Services. HPMC has no event contractor responsibilities as delineated in subsection 2.1.1.1. However, emergency services provided by HPMC include:

- minor emergency medical care and consultation;
- medical support for chemically, biologically, and radiologically contaminated patients;
- hostage negotiation and critical stress debriefing support;
- coordination with and support to community medical services;
- providing personnel to staff the Hanford EOC to include management and technical staff; and
- support to the Hanford Fire Department in the event of a large-scale mass casualty event on the Hanford Site as requested.

2.1.1.6 Washington River Protection *Solutions*, LLC. In addition to event contractor responsibilities for the Hanford Site facilities it manages, WRPS emergency responsibilities include:

- providing personnel to staff the Hanford EOC to include management and technical staff;
- radiological control technician support; and
- health technician support.

2.1.1.7 Advanced Technologies and Laboratories, Inc. ATL emergency responsibilities include:

- providing personnel to staff the Hanford EOC to include management and technical staff; and
- laboratory services.

2.1.1.5 Pacific Northwest National Laboratory. In addition to event contractor responsibilities for the Hanford Site facilities it operates, PNNL emergency responsibilities include:

- health physics technical support; and
- providing personnel to staff the Hanford EOC to include management and technical staff.

2.1.2 U.S. Department of Energy, Richland Operations Office, Office of River Protection, and Pacific Northwest Site Office

RL/ORP/PNSO shall have a trained emergency response staff and shall provide facilities/activities under their cognizance with:

- direction to implement emergency management policy and requirements;
- direction in emergency planning and preparedness activities;
- support and assistance (e.g., legal, financial, procurement, engineering, human resources) during emergencies; and
- support and assistance in resolving issues in site/facility/activity emergency management programs, as well as assessments of site/facility/activity emergency management programs.

2.1.2.1 RL/ORP Manager. The RL and ORP Managers shall designate additional senior management personnel to hold the Emergency Manager position with decision-making responsibilities. The first responding Emergency Manager will fill the position until an Emergency Manager from the responsible DOE Office (i.e., RL or ORP) is able to assume the role. If the event occurs at a PNNL occupied facility a PNSO senior manager will act as advisor to the Emergency Manager.

The Emergency Manager has the ultimate responsibility and authority for Hanford Site emergency response activities to ensure that effective management is provided for response to emergencies and is further responsible for overseeing the performance of onsite activities necessary to place the site in a safe condition and to minimize or terminate uncontrolled releases of hazardous materials, and for interfacing with offsite agencies and the public.

The Emergency Manager shall be supported by personnel with communications, technical, and liaison and public affairs expertise and shall ensure fulfillment of his or her responsibilities through direction of the Policy Team and representatives assigned to offsite emergency centers. The functions of the Policy Team are described in subsection 2.2.2.1.

2.1.2.2 RL/ORP/PNSO Personnel. RL/ORP/PNSO personnel shall fill ERO positions that include:

- members of the Policy Team, Site Management Team (SMT), and Joint Information Center (JIC);
- representatives to state emergency centers; and
- representatives to DOE-Headquarters (HQ), as requested.

2.1.2.3 DOE Facility Representative. The DOE Facility Representative serves in an oversight and liaison capacity at the ICP during declared emergencies. The primary function of the DOE Facility Representative is to observe ICP activities and, if required, report problems about facility conditions, event status, or mitigative actions to the Facility Representative Liaison in the Hanford EOC.

2.2 EMERGENCY RESPONSE ORGANIZATION STRUCTURE[1]

The Hanford Site ERO has two distinct components – the Incident Command Organization and the Hanford EOC – each with emergency direction and control responsibilities.

The Incident Command Organization consists of the NIMS ICS positions made up of site contractor emergency response personnel (i.e., Hanford Fire Department, Hanford Patrol) with the responsibility for on-scene mitigation (including emergency medical response, search and rescue operations, fire operations, hazardous material emergency response operations, and security related activities); and the facility/building ERO with responsibility for implementing emergency response activities at the event facility.

The facility/building ERO is responsible for completing specific emergency response activities associated with facility emergencies. For low-hazards and hazardous facilities with a Building Emergency Director (BED) or Building Warden (BW) on the premise at the time of the incident, the BED/BW shall be responsible for implementing emergency mitigation activities identified in appropriate emergency response procedures (e.g., protective actions, event classification, notification).

However, if events require actions performed by Hanford Site emergency response agencies (i.e., Hanford Fire Department, Hanford Patrol), the Hanford Incident Command System is activated. Upon arrival of the IC, the BED/BW, with support from the facility/building ERO, becomes part of a consolidated Incident Command Organization. The BED/BW shall retain responsibility for direct configuration control over facility systems and components; while the IC assumes the overall management strategy associated with the incident and ensures that appropriate ICS positions are staffed and working cohesively towards mitigation of the incident.

If the BED/BW is not present at the low-hazards or hazardous facility at the time of an incident (e.g., during off shift hours), the IC shall perform the duties of the BED/BW in addition to his/her own duties. The respective on-call BED/BW shall be summoned to the scene based upon the BED/BW listing located in the POC or PNNL Control Room.

If necessary, the BED/BW will make the classification decision (i.e., Alert, Site Area Emergency, or General Emergency) and determine if the RCRA contingency plan implementation requirements have been met prior to responding to the scene. If the on-call BED/BW is not available and timely classification is necessary, the IC may direct the Hanford EOC Shift Office Duty Officer to make the classification decision and determine if the RCRA contingency plan implementation requirements have been met. Upon arrival of the BED/BW at the scene, the IC will turn over the remaining BED/BW duties.

[1] Permit requirement: Subsection 2.2, Class 1 Modification 12/31/12

The Hanford EOC fills the role identified in the NIMS as the Multiagency Coordination (MAC) group to coordinate activities above the event scene and to prioritize the incident demands for critical or competing resources, thereby assisting the coordination of the operations at the event scene. Responsibilities include monitoring and providing support for the onsite response, assisting with issue resolution, assessing the offsite impacts, and interfacing with offsite agencies and the public.

The Hanford EOC is depicted in Figure 2-1 and the Incident Command Organization is depicted in Figure 2-2. Both components of the Hanford ERO are further delineated in the respective subsections below.

For nonfacility events (e.g., onsite transportation incidents, wildland fires), the IC shall be responsible for coordinating and performing the response activities. The Hanford EOC Shift Office shall have the responsibility for further classifying the event (i.e., as an Alert, Site Area Emergency, or General Emergency) and ensuring that the RCRA contingency plan implementation requirements have been met in accordance with subsection 4.2, if warranted. After the immediate threat of a release has been stabilized or eliminated, remaining duties will be delegated from the IC to the organization that offered the hazardous substance for transportation.

In all events, the Incident Command Organization shall have the authority to commit the resources needed to carry out the emergency response; and be thoroughly familiar with applicable plans and procedures, operations and activities at the facility, location and properties of all wastes handled, location of all records within the facility, and the layout of the facility.

2.2.1 Incident Command Organization

The Hanford ICS provides a graduated response mechanism for unusual conditions and emergencies on the Hanford Site.

Depending on the severity of the event, the Incident Command Organization is comprised of two main groups — site contractor emergency response personnel (i.e., Hanford Fire Department, Hanford Patrol) and the facility/building ERO with responsibility for implementing emergency response activities at the event. Other emergency response support personnel may be called upon to assist in the mitigation of an event depending on the type of emergency, but are not considered part of the Hanford ERO. The appropriate personnel from each group may be located at either the event scene or ICP, or staging area. A description of each group, including roles and responsibilities, is provided in the following subsections.

Facility personnel may be able to mitigate the event using facility abnormal event or emergency procedures and facility or process personnel as deemed necessary by the BED or BW. In these instances, the BED or BW coordinates emergency response efforts at the scene to include oversight of mitigation efforts, use of appropriate personal protective equipment, facility protective actions, and relevant notifications. Examples of such events that do not require assistance from outside the facility (termed incidental responses) include small releases of known substances when mitigation can be accomplished by trained on-scene personnel, minor first aid cases, noninjury contamination incidents, and nonemergency plant responses.

If event conditions exceed the capabilities or resources of the affected facility or require protective actions beyond the event scene hazard area, the Hanford ICS enables the use of additional site contractor emergency response personnel to mitigate the event. Requests for such additional site contractor emergency response personnel are made to the POC via the 911 emergency number (373-0911 for cellular telephones) and, where applicable, automated alarm systems.

Figure 2-1

Hanford Emergency Operations Center

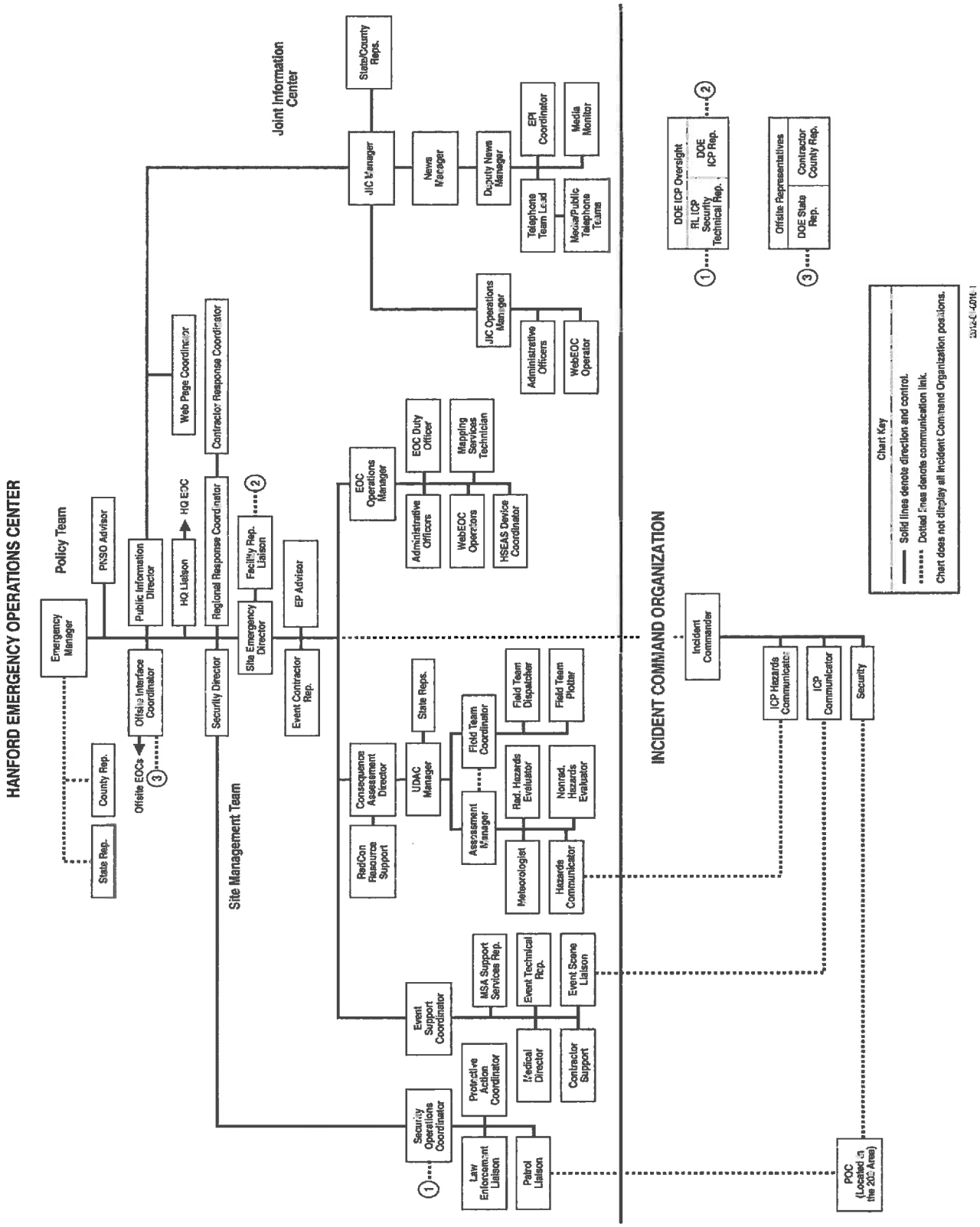
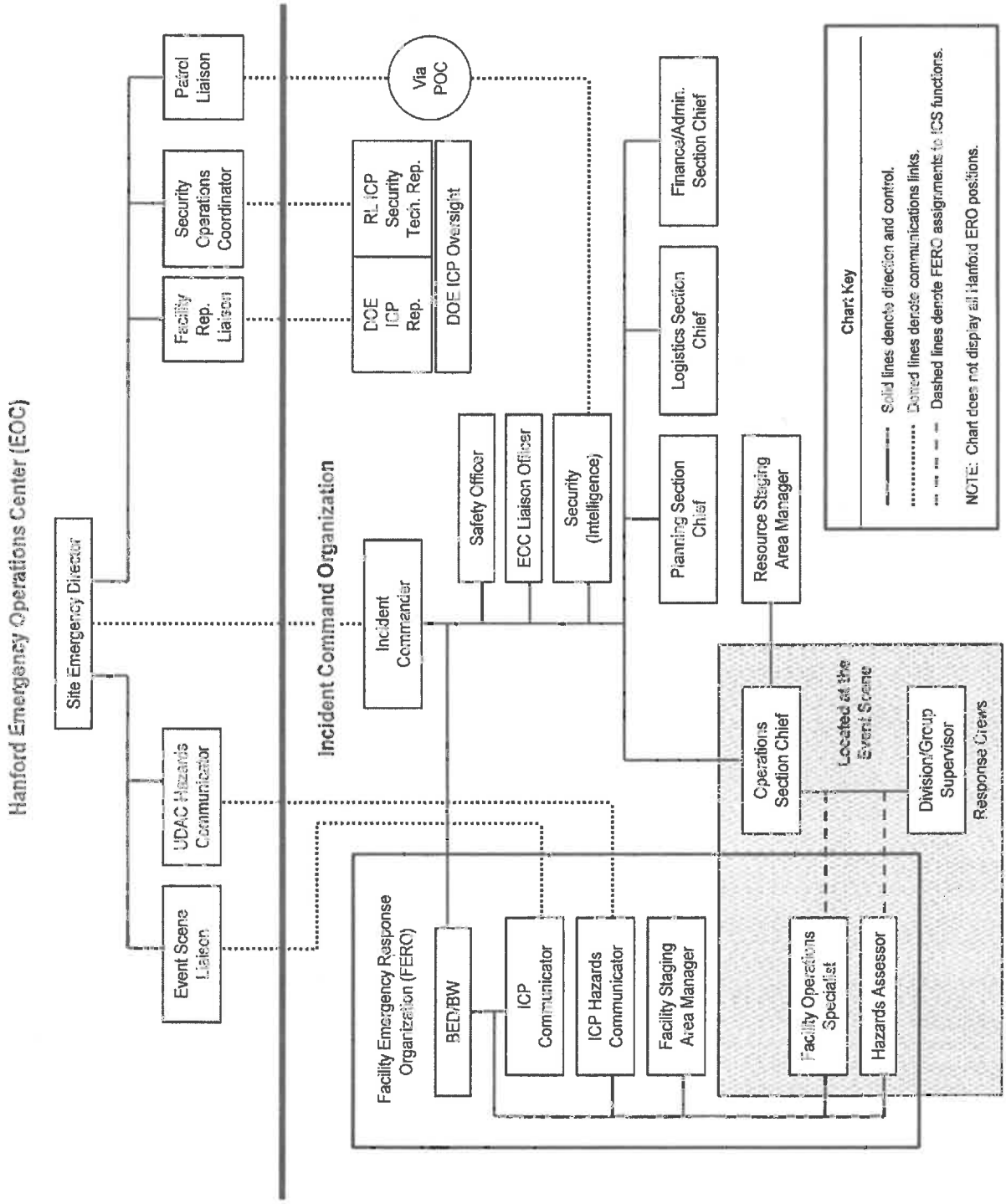


Figure 2-2

Incident Command Organization



This level of response requires the designation of an IC. The IC is responsible for the overall management strategy and for ensuring that all incident scene actions are coordinated and conducted safely. The IC will make decisions regarding the level and complexity of ICS staffing required to meet the needs of the event. The responding Hanford Fire Department senior officer for events involving emergency medical response, search and rescue operations, fire operations, and hazardous material emergency response operations shall be the IC and also fulfill the role of the senior emergency response official. During security events, the Hanford Fire Department and Hanford Patrol will operate under a unified command system with Hanford Patrol making all decisions pertaining to security.

The IC will communicate with the BED/BW and other support organizations as soon as possible to ensure facility processes and hazards are understood. Additionally, the IC shall establish a formal ICP as required to meet the needs of the event. The ICP shall be established in a safe location near the incident scene. Organizations supporting the ICP retain responsibility for their technical operations and provide facility expertise to the IC. The IC is responsible for the health and safety of personnel at the event scene (i.e., the impacted area under his/her direct control) and for the overall management strategy associated with the incident to ensure that functional areas are appropriately staffed and working cohesively towards mitigation of the incident.

The Incident Command Organization is staffed by pre-appointed and trained individuals as delineated in Table 2-1. Personnel working in support of the Incident Command Organization delineated in Table 2-1 must complete initial, annual, and ongoing training on their respective roles, responsibilities, and authorities within the Incident Command Organization. Drills and exercises are used to provide a format for Incident Command Organization responders to demonstrate their proficiency.

Contractor personnel shall provide a BED or BW for the purpose of supporting the Incident Command Organization as soon as possible. In the event of full implementation of the Incident Command Organization, additional facility personnel shall be available to support required functions.

2.2.1.1 Facility/Building Emergency Response Organization. Hanford Site facilities are divided into one of three types – general purpose, low-hazards, or hazardous – depending on the hazards associated with the facility.

Personnel and resources at the facility level comprise initial response capability for an emergency. Facilities shall direct appropriate emergency response actions, as delineated in the respective sections below, within the area under their control and at the scene of the emergency, including effective coordination with the IC and the Hanford EOC. Initial direction and control of emergency response at the facility prior to establishment of a formal ICP by the IC is the responsibility of the facility/building ERO.

The BED/BW fills the initial role of "Emergency Director" identified in DOE Emergency management directives and guidance documents. Elements of the Emergency Director role are transitioned to the IC and eventually to the Site Emergency Director in the Hanford EOC for emergencies classified as an Alert or higher.

The BED/BW manages facility operations and personnel, and ensures that appropriate emergency procedures are implemented. Activities include directing configuration control over facility systems and components, allocation of plant personnel to conduct facility-specific response actions within the affected facility boundary and providing support to emergency response agencies, classification or categorization and notification of the incident to the respective contractor environmental single point-of-contact and/or the Hanford EOC Shift Office, and implementation of initial, planned area/site protective actions.

A list of all BEDs and BWs assigned to low-hazards and hazardous facilities shall be located in the POC or PNNL Control Room in accordance with the Hanford Facility RCRA Permit (Dangerous Waste Portion) General Condition II.A.4. The list shall include telephone numbers (home and work) to ensure that these individuals can be reached 24 hours per day.

2.2.1.1.1 General Purpose Facilities. General purpose facilities are defined as onsite buildings or facilities that contain no hazardous materials in excess of any regulatory quantities that require emergency planning. The governing requirement for such facilities is 29 CFR 1910.38, which means that facilities where personnel are evacuated from the danger area when an emergency occurs, and are not permitted to assist in handling the emergency, are exempt from 29 CFR 1910.120(q) requirements.

The DOE O 151.1C Operational Emergency Base Program applies to general purpose facilities. The building management for general purpose facilities shall assign BWs or BEDs (primary and alternates) who shall manage and control all aspects of the initial facility response and shall direct an emergency organization made up of individuals within the facility who will assist in the protection of personnel, the environment, and property. Personnel may take emergency actions to report an emergency, initiate protective action including personnel accountability, and provide control of personnel while implementing protective actions. Typically, the emergency positions identified for these response actions include the BW/BED, Staging Area Manager, and Personnel Accountability Aides (or other contractor title for personnel performing the same or similar function). The BW/BED is responsible for emergency response at the event scene until arrival of the IC.

In addition, the building management, or designee, shall be responsible for:

- assigning and ensuring the training of the BW/BED, Staging Area Managers, and Personnel Accountability Aides (or other contractor title for personnel performing the same or similar function); and
- maintaining the facility emergency response information boards/building emergency procedures.

Specific responsibilities of the BW/BED, or designee, shall include, as applicable:

(a) activating internal facility alarms or communications systems, where applicable, to notify building occupants of protective actions to be taken;

(b) ensuring that a 911 telephone call is made when emergency assistance is required;

(c) assisting the IC, as necessary, in mitigating emergencies within the assigned building; and

(d) ensuring that building occupants take appropriate protective actions in response to events occurring in other onsite geographic areas or adjacent facilities.

The minimum training requirements for standard facility/building ERO positions are delineated in Table 12-1 of this plan.

2.2.1.1.2 Low-hazards Facilities. Low-hazards facilities are defined as facilities that contain hazardous materials but do not require establishment of an Operational Emergency Hazardous Material Program based on a hazards survey and hazards analysis. These facilities are typically subject to requirements driving preparation of an environmental, safety, and health related emergency preparedness plan/procedure, which include, but are not limited to, RCRA, CERCLA, the Toxic Substances Control Act, and the Occupational Safety and Health Administration (OSHA).[2]

[2] Permit requirement: Subsection 2.2.1.1.2 (first paragraph), Class 1 Modification 6/30/10

The DOE O 151.1C Operational Emergency Base Program applies to low-hazards facilities. The building management for low-hazards facilities shall assign BWs or BEDs (primary and alternates) who shall manage and control all aspects of the initial facility response and direct a facility/building ERO made up of individuals within the facility who will assist in the protection of personnel, the environment, and property. Typically, the emergency positions identified for these response actions include the BW/BED, Staging Area Manager, and Personnel Accountability Aides (or other contractor title for personnel performing the same or similar function); however, additional positions may be needed to implement facility-specific response actions. The BW/BED is responsible for emergency response at the event scene until arrival of the IC.

In addition, the building management, or designee, shall be responsible for:

- assigning and ensuring the training of the facility/building ERO as necessary to support the Hanford Fire Department as the designated hazardous materials emergency response agency;
- maintaining building emergency plans/procedures or facility-specific emergency response procedures, as applicable, in accordance with subsection 14.3.1 of this plan;
- ensuring that facility personnel are aware of hazards; and
- ensuring that facility personnel are trained to respond to emergencies.

Specific responsibilities of the BW/BED, or designee, shall include, as applicable:

(a) determining when an event has occurred or a condition exists that requires response in accordance with applicable state and Federal regulations;[3]

(b) activating internal facility alarms or communications systems, where applicable, to notify building occupants of protective actions to be taken;

(c) ensuring that a 911 telephone call is made when emergency assistance is required;

(d) reporting events or conditions in accordance with applicable state and Federal regulations;[4]

(e) establishing an initial command post and assigning other Incident Command Organization functions in accordance with established procedures to provide effective control at the event scene;

(f) assisting the IC, as necessary, in the mitigation of emergencies within the assigned building by:

- identifying the character, exact source, amount, and areal extent of any released material;
- assessing possible hazards to human health and the environment that may result from the release, fire, or explosion;
- taking reasonable measures (e.g., stopping processes/operations, collecting/containing released waste, removing/isolating containers) necessary to ensure that fires, explosions and releases do not occur, recur, or spread to other dangerous waste;

[3] Permit requirement: Subsection 2.2.1.1.2(a), Class 1 Modification 9/30/99

[4] Permit requirement: Subsection 2.2.1.1.2(d), Class 1 Modification 9/30/99

- monitoring for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, as appropriate;[5] and

(g) ensuring that building occupants take appropriate protective actions in response events occurring in other onsite geographic areas or adjacent facilities.

The duties of the facility/building ERO may include, but will not be limited to:

- assisting in the alerting of employees of an emergency situation;
- assisting in building evacuations and building sweeps; and
- providing assistance to the Hanford Fire Department and/or Hanford Patrol to include meeting and directing responders to the event scene, providing safe routes of travel, and providing immediate and constant interface, coordination, and information as the emergency situation requires.

The minimum training requirements for standard facility/building ERO positions are delineated in Table 12-1 of this plan.

2.2.1.1.3 Hazardous Facilities. Hazardous facilities are defined as facilities that contain hazardous materials capable of generating an Alert, Site Area Emergency, or General Emergency and require establishment of an Operational Emergency Hazardous Material Program. Facilities in this group include reactor or nuclear facilities, or nonnuclear hazard facilities. TSD units containing quantities of wastes or materials capable of generating an Alert or higher emergency will also be categorized as a hazardous facility.

The DOE O 151.1C Operational Emergency Base and Operational Emergency Hazardous Material Programs apply to the hazardous facilities. The building management for each hazardous facility shall establish and maintain a facility/building ERO with overall responsibility for the initial and ongoing response to and mitigation of an emergency. BEDs (primary and alternates) shall be assigned to manage and control all aspects of the facility response and to direct the facility/building ERO at the event scene until arrival of the IC. Typically, the emergency positions identified for these response actions include the BED, Staging Area Manager, Personnel Accountability Aides (or other contractor title for personnel performing the same or similar function), ICP Communicator, ICP Hazards Communicator, Hazards Assessor, and Facility Operations Specialist; however, additional positions may be needed to implement facility-specific response actions. Initiation of emergency lifesaving measures or support of protective actions for facilities which require self-contained breathing apparatus (SCBA) must not rely entirely on the Hanford Fire Department to provide such equipment on emergency response vehicles. The minimum assumption used for emergency planning for the Hanford Fire Department arrival shall be 10 minutes plus travel time to destination.

A BED (primary or alternate) must be within reasonable proximity to the facility (as defined by contractor policy) if work is being performed which could generate an Alert or higher emergency classification. On-call BEDs, where designated, may be used for facilities where hazardous materials are in storage and stable, and the work being performed is that of surveillance, or the routine activity poses minimal hazards.

[5] Permit requirement: Subsection 2.2.1.1.2(f), Class 1 Modification 9/30/99

The organization, size, and emergency response duties assigned to the facility/building ERO shall be based on a graded approach and upon hazards at the facility and the level necessary to support the Hanford Fire Department as the designated hazardous materials emergency response agency.

In addition, the positions and responsibilities of the facility/building ERO shall be documented in specific building emergency plans and/or procedures. The content, distribution and organizational approval of the building emergency plan and/or procedures shall be determined by the respective contractor emergency preparedness organization.

NOTE: Building emergency plans are not required for unoccupied hazardous facilities. However, BEDs shall be identified and trained to implement initial emergency response procedures.

The building management, or designee, shall be responsible for:

- assigning and ensuring the training of the facility/building ERO as necessary to support the Hanford Fire Department as the designated hazardous materials emergency response agency;
- maintaining, reviewing, and revising the building emergency plan and applicable facility-specific emergency response procedures in accordance with subsection 14.3.1 of this plan;
- ensuring that facility personnel are aware of hazards; and
- ensuring that facility personnel are trained to respond to emergencies.

Responsibilities of the BED, or designee, shall include:

(a) determining when an event has occurred or a condition exists that requires appropriate emergency event classification;[6]

(b) activating internal facility alarms or communications systems, where applicable, to implement actions to protect workers within their respective geographic area of responsibility as defined in the building emergency plan or procedures;

(c) assessing the potential or actual onsite and offsite consequences of the emergency;

(d) contacting the POC, via the 911 emergency number, to implement predetermined onsite protective actions and provide initial emergency and classification information in accordance with established procedures;

(e) reporting events or conditions in accordance with applicable state and Federal regulations;[7]

(f) establishing an initial command post and assigning other Incident Command Organization functions in accordance with established procedures to provide effective control at the event scene;

(g) assisting the IC, as necessary, in the mitigation of emergencies within the assigned building by:

- identifying the character, exact source, amount, and areal extent of any released materials;

[6] Permit requirement: Subsection 2.2.1.1.3(a), Class 1 Modification 9/30/99

[7] Permit requirement: Subsection 2.2.1.1.3(e), Class 1 Modification 9/30/99

- taking reasonable measures (e.g., stopping processes/operations, collecting/containing released waste, removing/isolating containers) necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other dangerous waste,
- monitoring for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, as appropriate;[8] and

(h) ensuring that building occupants take appropriate protective actions in response to events occurring in other onsite geographic areas or adjacent facilities.

The duties of the facility/building ERO may include, but will not be limited to:

- assisting in the alerting of employees of an emergency situation;
- assisting in the safe evacuation of the incident scene hazard area;
- providing immediate first-aid if required;
- placing operating systems or controls in a safe configuration;
- implementing or supporting the implementation of protective actions for the general population to include roadblocks and building sweeps;
- assisting in emergency classification and emergency notification of such classification within established regulatory time limits;
- providing assistance to the Hanford Fire Department and/or Hanford Patrol to include meeting and directing responders to the event scene, providing safe routes of travel, and providing immediate and constant interface, coordination, and information as the emergency situation requires;
- serving as emergency response team members in support of the Hanford Fire Department for entry into the incident scene hazard area for mitigation where personnel protective equipment requirements do not specify Level A or Level B dermal protection (refer to Appendix B of 29 CFR 1910.120);
- providing chemical monitoring and assessment, in conjunction with the Hanford Fire Department Industrial Hygienist, for emergency response;
- providing radiological monitoring and assessment for emergency response; and
- providing support for chemical and/or radiological decontamination.

The minimum training requirements for standard facility/building ERO positions are delineated in Table 12-1 of this plan.

2.2.1.2 Site Contractor Emergency Response Personnel

2.2.1.2.1 Hanford Fire Department. The Hanford Fire Department is the designated incident command agency responsible for fire suppression operations, hazardous material emergency response operations (radiological and nonradiological) and chemical/biological incidents on the site, medical services, and search and rescue (including confined space, high angle, and water rescue).

[8] Permit requirement: Subsection 2.2.1.1.3(g), Class 1 Modification 9/30/99

In this capacity, the Hanford Fire Department shall provide a hazardous materials response team, as defined in 29 CFR 1910.120(q)(6)(i)-(v) and NFPA 472, as well as a qualified Safety Officer for all emergency response activities.

As a 24-hour operational facility/dispatch center, the Hanford Fire Department also monitors facility fire alarm systems, and coordinates and provides emergency medical services on the Hanford Site. Emergency medical support responsibilities are further delineated in subsection 8.1.1 of this plan.

2.2.1.2.2 Hanford Patrol. The Hanford Patrol monitors alarm systems and provides security emergency response operations including coordination of the movement of emergency personnel through security gates, evacuation assistance, and traffic control and barricade establishment where needed. Additional law enforcement is available through agreements with local and Federal agencies at the request of RL. The Hanford Patrol and Hanford Fire Department operate under a unified command system for security events with Hanford Patrol making all decisions pertaining to security.

Additionally, the POC, a 24-hour operational facility/dispatch center, is responsible for emergency functions that include, but are not limited to:

- operating the site's enhanced 911 system;
- acting as the single point-of-contact to initiate emergency response by
  - notifying the BED/BW (when not on the premises)
  - requesting response from the Hanford Fire Department
  - notifying appropriate on-call personnel
  - activating or requesting activation of appropriate alarm signals;
- activating the Hanford EOC Shift Office conference bridge upon notification of a declared emergency and implementing onsite protective actions by activating applicable components of the Hanford Site Emergency Alerting System; and
- receiving emergency response telephone calls during offsite shipments of DOE-owned hazardous materials.

Emergency medical support responsibilities of the Hanford Patrol are further delineated in subsection 8.1.3 of this plan.

2.2.1.3 Other Emergency Response Support Personnel. Some emergency situations may require facility or site support personnel to be used for emergency response at the event scene that are not assigned positions within the Hanford ERO. These emergency response support personnel – termed either as Skilled Support Personnel or Specialist Employees – are not trained to operate within the Hanford Incident Command System and must only be used for specific tasks defined in the following subsections.

2.2.1.3.1 Skilled Support Personnel. Personnel needed to operate specific support equipment, including those within the incident scene hazard area but are not addressed in specific emergency response procedures, may be designated as Skilled Support Personnel. Such personnel shall receive a briefing prior to commencing any work. Training requirements in accordance with 29 CFR 1910.120(q)(4) are delineated in subsection 12.2.2.3.1 of this plan.

2.2.1.3.2 Specialist Employees. Safety professionals and environmental specialists who provide technical advice within their field of expertise, but are not addressed in specific emergency response procedures, may be designated as Specialist Employees. Such personnel will only provide expertise and advice to the IC when requested and may not enter the incident scene hazard area. Training requirements in accordance with 29 CFR 1910.120(q)(5) are delineated in subsection 12.2.2.3.2 of this plan.

2.2.2 Hanford Emergency Operations Center

The Hanford EOC is an emergency response facility maintained by RL for the purpose of providing an area where personnel may convene during emergency conditions to provide essential response functions. These functions include public information, offsite protective action recommendations, field monitoring and sampling, hazard assessment, oversight of onsite mitigative activities, and oversight of onsite protective actions.

The Hanford EOC shall be activated upon declaration of an Alert or higher emergency and should be operational within an hour after activation.

The Hanford EOC may also be fully or partially activated in the following situations.

- As directed by the RL/ORP/PNSO Manager (or designees) when events occur that are not classified as an Alert or higher emergency but where action to provide monitoring or assistance to the event scene or other agencies, is requested. Such events may include:
  - Hanford Site emergency conditions that potentially involve significant onsite or offsite consequences;
  - security events;
  - natural disasters (i.e., earthquake, tornado) that could or does result in significant onsite or offsite public or environmental impact;
  - requests from other government agencies for support of regional emergencies; or
  - threats or acts of terrorism, or when a national emergency is declared by the President of the United States or the United States Congress.
- As requested by the BED/BW, IC, or EDO where action to provide monitoring or assistance to the event scene is needed.
- As requested by the RAP team leader to support a RAP response.
- In response to non-DOE emergencies that affect the Hanford Site.
- In response to transportation emergency preparedness events involving the offsite shipment of DOE-owned hazardous materials.

The Hanford EOC is made up of several organizations that are responsible for implementing defined emergency response tasks. These organizational areas are defined in the following subsections. Detailed procedures for the activation, staffing, and operation of the Hanford EOC are contained in DOE-0223, *Emergency Plan Implementing Procedures*. Position-specific checklists are maintained separately for positions in the Hanford EOC.

2.2.2.1 Policy Team. The primary functions of the Policy Team are the oversight of onsite activities, approval and communication of offsite protective action recommendations, approval of reclassification recommendations, oversight of public information activities, and coordination with offsite agencies.

The Emergency Manager is responsible for oversight operations of the Hanford EOC and for ensuring implementation of the responsibilities of the National Response Framework's coordinating agency. In consultation with the Hanford EOC staff, the Emergency Manager approves emergency reclassification and termination, offsite PARs, and notifications.

Once operational, general functions of the Policy Team include:

- overview of onsite response and mitigation actions, and providing assistance to the event contractor as needed;
- providing offsite notifications and PARs to state, local, and Federal agencies, and continuous updates to the state/counties about conditions;
- providing direction and control, as appropriate, during a security incident;
- approving the reclassification or termination of the emergency;
- directing the activities of the JIC in providing timely and accurate release of information to the public and media, including approval of emergency information;
- requesting the national DOE emergency response assets as needed;
- providing liaisons to offsite emergency centers and responding DOE emergency response assets;
- providing a representative to DOE-HQ as requested; and
- designating a recovery organization.

During security incidents, RL is responsible for decisions that address mitigation of the security event. This involves direction and control of Hanford Site security and patrol forces, and coordination of facility response. However, the Federal Bureau of Investigation (FBI) may exercise the option to take command of specific aspects of security events involving the violation of the Atomic Energy Act of 1954 or other Federal statutes (e.g., criminal investigation, coordinating activities of other law enforcement agencies). Associated response by site contractor personnel for personnel and operational safety rests with the IC and the BED.

2.2.2.2 Joint Information Center. The primary function of the JIC is the dissemination of accurate and timely information to the public and employees regarding activities during declared emergencies. The JIC operates under the direction of the Public Information Director and is staffed by RL/ORP/PNSO, contractor, state, and county communication professionals responsible for coordinating the release of information to the public and media.

The JIC provides a single location where site personnel can coordinate the release of information with other Federal agencies, state, and local jurisdictions. Provisions shall be made at the JIC for representatives from the states of Washington and Oregon, plume EPZ counties, and other Federal agencies that may be involved in the emergency response.

The functions performed at the JIC include:

- preparing and coordinating information released to the public and media;
- answering questions of the public and media; and
- rumor control.

2.2.2.3 Site Management Team. The primary functions of the SMT are to provide support to the Incident Command Organization by providing additional resources not easily obtained by the IC; tracking the status of onsite protective actions; developing and directing implementation of additional onsite protective actions away from the event scene (i.e., the area not under the direct control of the IC) as required; and providing communications support. The SMT is also responsible for hazards assessment activities, tracking personnel medical issues, developing additional offsite protective action recommendations, record keeping, and overall operation of the center.

The SMT is made up of four support organizations that are responsible for implementing defined emergency response tasks. These organizations are defined below.

2.2.2.3.1 Executive Team and Support Staff. The Site Emergency Director is responsible for the coordination of all SMT activities. In this role, the Site Emergency Director is responsible for the activities of the Event Support Coordinator, EOC Operations Manager, and the Consequence Assessment Director. Since RL has an operational function over Hanford security forces, the Security Director in the Policy Team is responsible for the activities of the Security Operations Coordinator.

The Contractor Representative and Emergency Preparedness Advisor provide support to the Site Emergency Director.

2.2.2.3.2 Security and Event Support. As part of the SMT staff, the Security Operations Coordinator's primary functions are security operations, which include interface with local law enforcement agencies, coordination with the Federal Bureau of Investigation (FBI), and oversight of onsite patrol activities. The Security Operation Coordinator reports directly to the Security Director. The Security Director will communicate planned actions of security forces to the Site Emergency Director to ensure all safety and security issues are addressed and coordinated. The Site Emergency Director, in conjunction with the Security Director, is responsible for periodically providing status information to the Emergency Manager and the Policy Team.

The Event Support Coordinator is responsible for event support activities to include site support services, technical support, communications with the event scene, and coordination with medical assessment activities. The Event Support Coordinator reports directly to the Site Emergency Director.

2.2.2.3.3 Unified Dose Assessment Center.[9] As part of the SMT, the primary Unified Dose Assessment Center (UDAC) functions are monitoring and evaluating existing emergency conditions in order to develop additional protective action recommendations. The UDAC is responsible for field team activities to include plume tracking, monitoring, and sampling.

Representatives from the states of Washington and Oregon participate in the development of recommendations and provide direction for offsite environmental monitoring. The UDAC is operated by site contractor personnel with knowledge in the technical areas of meteorology, toxicology, industrial hygiene, and health physics. The Consequence Assessment Director is responsible for all UDAC activities and reports directly to the Site Emergency Director.

Specific UDAC responsibilities include:

- acquiring necessary data and measurements to evaluate personnel radiation doses and chemical exposures resulting from the event;

[9] Permit requirement: Subsection 2.2.2.3.3, Class 1 Modification 9/30/99

- assessing the potential for onsite and offsite consequences of a release of radioactive or nonradioactive materials based on meteorological conditions, source term, location and dispersal of the hazardous material;
- assisting the event contractor or other Hanford Site contractors in onsite hazard assessment or development of onsite protective actions;
- analyzing the consequences associated with evacuating versus remaining in a take cover situation for onsite personnel and recommending appropriate additional protective actions if necessary;
- developing offsite PARs in coordination with representatives from the states of Washington and Oregon; and
- coordinating and directing emergency environmental monitoring teams that are not assigned to the event facility. This may include state field teams performing offsite monitoring if requested by the states.

2.2.2.3.4 Hanford EOC Operations. As part of the SMT, the primary functions of the Hanford EOC Operations team are administration, record keeping tasks, and dissemination of information to offsite agencies. The EOC Operations Manager is responsible for these activities. In this role, the EOC Operations Manager reports directly to the Site Emergency Director.

2.2.2.4 Event Coordination Team. The Event Coordination Team is a partial staffing of the Hanford EOC that allows for a graded response to events occurring on or off the Hanford Site which are not further classified as an Alert or higher emergency. The Event Coordination Team can be used to provide resource and communications support to the ICP; to monitor abnormal conditions that could impact site workers, facilities, or operations (e.g., power outage, severe weather conditions); or for events that may require additional monitoring or distributing information to site workers and the public.

The Event Coordination Team does not require that all Hanford EOC positions be filled. Instead, the on-call Site Emergency Director or EDO will determine staffing and length of operation. Detailed procedures for the activation and responsibilities of the Event Coordination Team are contained in DOE-0223, *Emergency Plan Implementing Procedures*.

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3.0 OFFSITE RESPONSE INTERFACES

3.1 OVERVIEW[1]

Interfaces and coordination with offsite agencies are important in the planning, preparedness, response, and recovery elements of the Hanford emergency management program. As such, RL shall interface with Federal, tribal, state, local, and private organizations and/or agencies:

- that have a responsibility to protect the public and environment within the EPZs of the Hanford Site;
- with which RL supports as the Regional Coordinating Office for Region 8 (Oregon, Washington, and Alaska); and
- with which RL has entered into special agreements for assistance.

Where appropriate, RL shall develop and maintain agreements to formalize areas of understanding, cooperation, and support with offsite agencies.

3.1.1 Planning and Preparedness[2]

The modes of interface for planning and preparedness activities, as is determined beneficial by the parties, may include:

- coordination of emergency plans and procedures;
- periodic meetings to share information and coordinate activities;
- training opportunities related to offsite responsibilities;
- development of agreements for support to and from offsite agencies;
- participation in annual exercises; and
- development of public information programs.

3.1.2 Response and Recovery

In the event of an emergency on or affecting the Hanford Site, RL/ORP/PNSO shall interface with offsite agencies to ensure coordination and support of response and recovery activities. These interfaces may include:

- notification and periodic updates to local jurisdictions within the plume EPZ, states that contain portions of the ingestion EPZ, and other agencies that may be requested to provide assistance (see respective subsections in section 5.0);
- communication and coordination with DOE-HQ;
- representation in appropriate offsite emergency centers;
- offsite representation in the Hanford EOC;
- PARs to offsite agencies; and
- event scene interface with offsite responders.

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[1] Permit requirement: Subsection 3.1, Class 1 Modification 9/30/99

[2] Permit requirement: Subsection 3.1.1, Class 1 Modification 9/30/99

Communications with state and local emergency centers are depicted on Figure 3-1.

3.2 FEDERAL AGENCIES

3.2.1 U.S. Department of Energy-Headquarters

The DOE-HQ Program Secretarial Officers are responsible for ensuring implementation of policy and requirements for activities conducted under their respective areas of cognizance.

The DOE-HQ Operations Center serves as the point-of-contact for receipt of all emergency notifications and reports. Accordingly, the DOE-HQ Operations Center receives, coordinates, and disseminates emergency information to DOE-HQ elements and Program Office emergency points-of-contact, the White House Situation Room, and other Federal agencies. As such, emergency status reports shall be forwarded to the DOE-HQ Operations Center on a continuing basis until the emergency is terminated.

In the event of an emergency, a DOE-HQ Emergency Management Team is convened to:

- receive information on the facility, site, or area response;
- monitor the Operations/Field Office;
- provide appropriate support and assistance;
- assist with issue resolution; and
- coordinate interagency, Congressional, and public information activities at the national level.

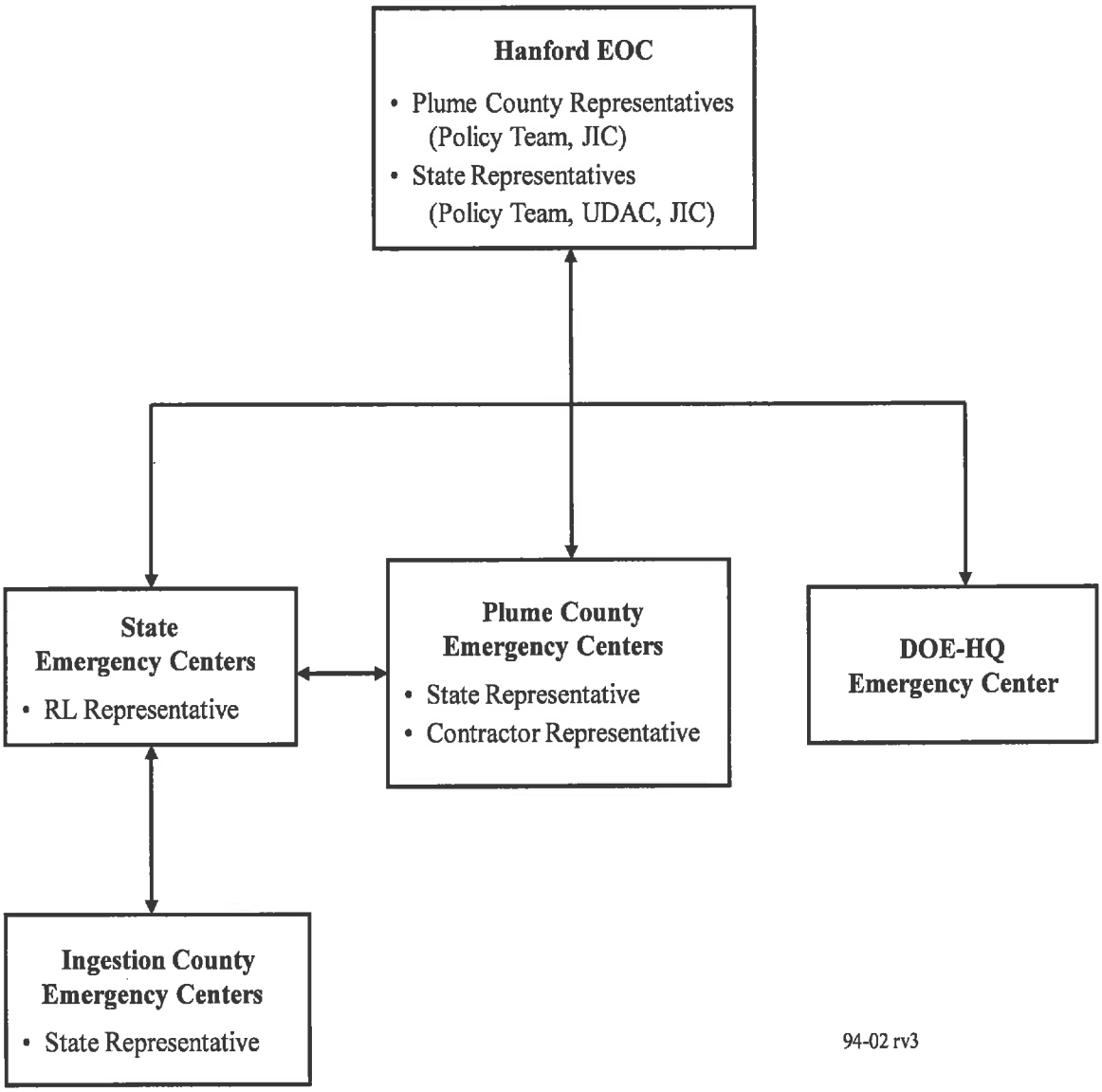
DOE also has five emergency response assets available to assist at events if conditions warrant. These assets include:

- Aerial Measuring System (AMS) – provides fixed-wing aircraft and/or helicopters for remote sensing to detect and measure for ground deposition or perform aerial photography and multi-spectral imaging;
- National Atmospheric Release Advisory Capability (NARAC) – develops predictive plots to provide near real-time assessments of the consequences of accidental or potential radiation releases;
- Federal Radiological Monitoring and Assessment Center (FRMAC) – coordinates the Federal radiological monitoring, assessment, and evaluation of data during a radiological emergency;
- Radiological Assistance Program (RAP) – provides radiological assistance during all types of radiological accidents or emergencies (considered DOE's First Responder team); and
- Radiation Emergency Assistance Center/Training Site (REAC/TS – provides health professionals and coordinators for consultation or direct medical care on health problems associated with radiation accidents.

Requesting emergency response asset assistance is delineated in subsection 5.1.1.2.3.

Figure 3-1

Lines of Communication Between Emergency Centers



3.2.2 Federal Bureau of Investigation

The role of the FBI is to serve as the primary U.S. Law Enforcement Agency responsible for investigating alleged or suspected violations of the Atomic Energy Act of 1954, as amended, and other Federal statutes. As such, security events of national consequence occurring at the Hanford Site and within the jurisdiction of the U.S. Department of Justice (e.g., theft of special nuclear material, terrorist activity, weapons of mass destruction incidents) will be communicated to the FBI.

During these types of security events, the FBI Special-Agent-In-Charge will coordinate with the Emergency Manager, or designee, to receive an event status briefing and determine areas of responsibility. The FBI has the lead responsibility for criminal investigations of terrorist acts or terrorist threats by individuals or groups inside the U.S. or directed at U.S. citizens, as well as for coordinating activities of other law enforcement agencies to detect, prevent, and disrupt terrorist attacks.

3.2.3 U.S. Coast Guard[3]

The U.S. Coast Guard (USCG) (through the Thirteenth District Commander in Seattle, Washington and the Captain of the Port in Portland, Oregon) may regulate activities on navigable waters within the Hanford Site, when necessary, to prevent harm to persons, property, and the environment in or on those waters.

The USCG will close the appropriate portion of the Columbia River and make a broadcast to mariners, as requested by Benton or Franklin County.

In the event of an emergency, the Hanford EOC Shift Office will make notifications and provide information to the USCG in Portland, Oregon.

3.2.4 U.S. Environmental Protection Agency

The EPA is responsible for coordinating the intermediate and long-term offsite radiation monitoring activities.

In the event of an emergency, the Hanford EOC shall notify and provide information to the EPA Region 10 in Seattle, Washington.

3.2.5 Federal Aviation Administration

The Federal Aviation Administration (FAA) may make flight restrictions for aircraft under their jurisdiction over the Hanford Site.

In the event of an emergency, the IC may request the FAA Seattle Center to impose a temporary flight restriction over the Hanford Site.

3.2.6 Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) is responsible for coordinating Federal assistance when the resources of state and local authorities are overwhelmed and Federal assistance has been requested.

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[3] Permit requirement: Subsection 3.2.3, Class 1 Modification 12/31/12

At the time of a declaration of an emergency, the Hanford EOC notifies and provides information to the FEMA Region 10 office in Bothell, Washington.

3.3 STATE GOVERNMENT

States, along with local governments, share the responsibility for the protection of the public and the environment. The responsibilities and concept of operations for state agencies are described in the emergency response plans of each state.

RL shall work with the states of Washington and Oregon to assist in development of their program and response plans for an emergency at the Hanford Site. Periodic meetings will be conducted with the states to coordinate plans and share information. General descriptions of emergency responsibilities as well as areas of cooperation and understanding between RL and the states are delineated in memoranda of understanding (MOU). Copies of the MOUs are provided in Appendix B.

3.3.1 The State of Washington[4]

The Governor of Washington is responsible for command and control of state resources to maintain and preserve life, property, and the environment in Washington. The lead agency for emergency planning and response activities is the Emergency Management Division of the Military Department. Other state agencies that participate in the planning process and have emergency response roles include the:

- Department of Health;
- Department of Agriculture;
- State Patrol;
- Department of Ecology; and
- Department of Transportation.

An emergency response plan is maintained by the Emergency Management Division that describes the concept of operations and roles and responsibilities of the state agencies. Emergency procedures are maintained by each state agency.

Responsibilities of the state of Washington include:

- providing a 24-hour single point-of-contact for the receipt of emergency notifications from the Hanford Site;
- disseminating information to potentially affected counties within the plume and ingestion EPZs;
- coordinating ingestion protective action decisions and public information with the counties, the state of Oregon, and RL;
- providing assistance to counties as requested;
- evaluating offsite emergency PARs made to plume EPZ counties;
- making protective action decisions to protect public health from ingestion-related impacts, such as contamination of the food chain;

[4] Permit requirement: Subsection 3.3.1, Class 1 Modification 12/31/08

- performing field environmental radiological monitoring and dose assessments;
- providing guidance on emergency worker exposure and authorizing emergency workers to exceed protective action guides;
- implementing food, milk, and animal-feed control measures; and
- requesting Federal assistance as required.

3.3.2 The State of Oregon[5]

The Governor of Oregon is responsible for directing and controlling state activities to protect the lives and property of Oregon citizens. The lead agency for Hanford Site emergency planning is the Oregon Department of Energy. Other state agencies that participate in the planning process and have emergency response roles include the:

- State Public Information Officer;
- Public Health;
- Emergency Management Division;
- Department of Agriculture;
- Oregon State University Radiation Center
- Military Department;
- State Police; and
- Department of Transportation.

An emergency response plan is maintained by the Oregon Department of Energy that describes the concept of operations and roles and responsibilities of state agencies. Emergency procedures are maintained by each state agency.

Responsibilities of the state of Oregon include:

- providing a 24-hour single point-of-contact for the receipt of emergency notifications from the Hanford Site;
- making protective action decisions for the state of Oregon;
- coordinating protective action decisions and public information with counties, the state of Washington, and RL;
- coordinating state and local emergency response within the state of Oregon;
- performing field environmental radiological monitoring and dose assessments;
- providing guidance on emergency worker exposure and authorizing emergency workers to exceed protective action guides;
- providing assistance to Oregon counties within the ingestion EPZ;
- implementing food, milk, and animal-feed control measures; and
- requesting Federal assistance as required.

[5] Permit requirement: Subsection 3.3.2, Class 1 Modification 12/31/08

3.4 LOCAL ORGANIZATIONS[6]

Cities and counties are responsible for protecting the lives and property of their residents. The responsibilities and concept of operations for local governments are described in the emergency response plans of each jurisdiction.

RL shall work with local emergency response organizations through the county and state emergency management organizations. Generally, RL shall interface directly with emergency response and planning organizations providing service to those areas within a plume EPZ of a Hanford Site facility. Interface with those jurisdictions within the ingestion EPZ generally shall be accomplished through the state emergency management organization. To accomplish the necessary close coordination with local agencies, periodic meetings shall be conducted to share information and discuss concerns.

3.4.1 Plume Emergency Planning Zone Counties

Portions of Benton, Franklin, and Grant Counties are within plume EPZs of a Hanford Site facility. The Boards of County Commissioners are responsible for making emergency protective action decisions and implementing emergency response actions, as necessary, to protect their residents outside the Hanford Site boundary. The lead agency for emergency planning and coordination of emergency response is the county emergency management agency. County emergency response plans and procedures are developed by the emergency management agencies, working with county, city, and volunteer emergency response agencies, such as:

- law enforcement;
- fire and emergency medical;
- public works/road departments;
- hospitals; and
- American Red Cross.

The emergency responsibilities of the plume EPZ counties include:

- making and implementing protective action decisions to protect citizens who live within the plume EPZ;
- implementing protective action decisions, made by the state of Washington, for ingestion-related impacts to residents within the ingestion EPZ;
- disseminating alert and warnings to the public and providing emergency public information; and
- coordinating response actions and public information with neighboring counties, the state of Washington, and RL.

RL maintains agreements with Benton, Franklin, and Grant Counties that outline the areas of responsibility and cooperation (see Appendix B).

[6] Permit requirement: Subsection 3.4 Class 1 Modification 9/30/99

3.4.1.1 Law Enforcement.[7] RL SES interfaces with local law enforcement agencies for support to the Hanford Site during emergencies. Via a contractual agreement, the Benton County Sheriff's Office provides law enforcement on the Hanford Site (i.e., traffic enforcement and criminal investigation), and assists in access control; and, as such, coordinates activities with RL SES and the Hanford Patrol.

RL SES maintains memorandums of understanding with the local law enforcement agencies.

3.4.1.2 Fire and Emergency Medical.[8] The Hanford Fire Department is signatory to the Tri-County Mutual Aid Agreement for fire agencies. The agreement provides mutual aid for fire or medical emergencies.

The Hanford Fire Department meets regularly with local fire agencies. The Hanford Fire Department and HPMC representatives meet routinely with emergency medical service agencies to coordinate and share information.

3.4.1.3 Hospitals.[9] RL maintains agreements with local hospitals, which provide for the care of injured, contaminated (chemical or radiological) Hanford Site personnel. These hospitals include:

- Lourdes Medical Center;
- Kennewick General Hospital; and
- Kadlec Medical Center.

RL shall provide for training and exercise support, as needed, related to the services provided to the Hanford Site. RL shall also provide health physics support and will work in cooperation with the hospitals to develop protocols for the diagnosis and treatment of injuries and illnesses involving chemical and/or radiological contamination as necessary.

3.4.2 Ingestion Emergency Planning Zone Counties

Counties within the ingestion EPZ of the Hanford Site are responsible to implement measures to protect their residents from potential ingestion related impacts. In the state of Washington, the counties of Adams, Benton, Franklin, Grant, Kittitas, Klickitat, Walla Walla, and Yakima are within the 50-mile (80-kilometer) ingestion EPZ. In the state of Oregon, the counties of Morrow and Umatilla are included. Ingestion EPZ counties have emergency response plans that describe their responsibilities in the event of an emergency at the Hanford Site.

RL shall coordinate emergency planning and preparedness for ingestion counties through the Washington State Emergency Management Division and the Oregon Department of Energy. Ingestion county responsibilities include:

- coordinating with the state and implementing decisions regarding protective measures for its residents within the ingestion EPZ; and
- consulting with the respective state emergency center on the identification of access control points, food control areas, food control stations, and strategies for relocation, restoration, and recovery in contaminated areas.

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[7] Permit requirement: Subsection 3.4.1.1, Class 1 Modification 12/31/08
[8] Permit requirement: Subsection 3.4.1.2, Class 1 Modification 12/31/12
[9] Permit requirement: Subsection 3.4.1.3, Class 1 Modification 6/30/10

3.5 TRIBAL ORGANIZATIONS

RL shall provide appropriate information to the impacted tribal organizations to coordinate planning for ingestion-related response actions of the tribe(s).

3.6 PRIVATE ORGANIZATIONS

The Hanford Site emergency management program shall address private facilities on or near the site. These facilities may be impacted by an emergency at the Hanford Site, or may impact Hanford Site facilities if they experience an emergency.

RL shall coordinate emergency planning and preparedness activities with onsite private facilities. In the event of an emergency at a Hanford Site facility, onsite private facilities will receive notifications and information from RL.

Where emergencies at facilities operated by private organizations may impact the Hanford Site, RL shall ensure that the emergency management program addresses actions that must be taken to protect site workers and facilities.

Areas of cooperation with private organizations shall be documented in memorandums of understanding.

3.7 MEMORANDA OF UNDERSTANDING

RL shall develop and implement mutual assistance agreements with offsite agencies to document areas of cooperation and assistance when appropriate and as identified in Federal, state, and local regulations (see Table 3-1).

RL SES is responsible for executing and maintaining MOUs related to security and emergency preparedness. The Hanford Fire Department shall execute and maintain MOUs within its area of responsibility. MOUs should be reviewed periodically (unless stated otherwise) and revised as needed.

Copies of MOUs are included in Appendix B of this plan.

Table 3-1

Memorandums of Understanding[10]

PARTIES	SERVICES/AREAS OF COPERATION	POINTS OF CONTACT	CONSTRAINTS	DATE	EXPIRATION DATE	WHERE ON FILE
State of Washington	Document areas of cooperation between the parties in the planning for and response to emergencies at the Hanford Site.	Washington Emergency Management Division	None	06/20/07	02/28/13 or until canceled by any party after 60 days written notice to the other parties.	RL SES
State of Oregon	Document areas of cooperation between the state of Oregon and RL in the planning for and providing notification and interface in the event of an incident on the Hanford Site.	Oregon Department of Energy	None	03/06/09	Continue until canceled by either party by 30 days prior written notice to the other party.	RL SES
Benton County	Document areas of cooperation between the parties in the planning for and response to emergencies at the Hanford Site.	Benton County Emergency Management	None	11/28/11	Continue until canceled by either party by written notice to the other.	RL SES
Franklin County	Document areas of cooperation between the parties in the planning for and response to emergencies at the Hanford Site.	Franklin County Emergency Management	None	12/28/11	Continue until canceled by either party by written notice to the other.	RL SES
Grant County	Document areas of cooperation between the parties in the planning for and response to emergencies at the Hanford Site.	Grant County Emergency Management	None	12/28/11	Continue until canceled by either party by written notice to the other.	RL SES
Energy Northwest	Document areas of cooperation between the parties in the planning for and response to emergencies at the Hanford Site.	Energy Northwest Emergency Preparedness	The specific areas of assistance will be provided based upon availability, and are limited to those emergency actions necessary to protect onsite personnel, the public health and safety, and the environment in the event of a major emergency at the Hanford Site or Energy Northwest.	05/07/07	Continue until canceled by either of the parties upon 60 days written notice to the other party.	RL SES
AREVA NP, Inc.	Establishes means by which RL can assist AREVA NP through use of RL facilities during an emergency at the AREVA NP plant in Richland, Washington	AREVA NP	Emergencies affecting the Hanford Site or Hanford facilities take precedence over all other uses of the RL facilities.	05/06/11	Continue until canceled by either of the parties upon 30 days written notice to the other party.	RL SES

[10] Permit requirement: Table 3-1, Class 1 Modification 12/31/12

PARTIES	SERVICES/AREAS OF COPERATION	POINTS OF CONTACT	CONSTRAINTS	DATE	EXPIRATION DATE	WHERE ON FILE
National Weather Service	Sharing meteorological information.	NWS Western Regional Headquarters	None	10/05/94	Agreement may be terminated by either party upon 30 days written notice to the other party.	RL SES
Lourdes Medical Center (Lourdes) Pasco, Washington	Significantly injured, contaminated persons will be admitted to facility for appropriate medical care.	Lourdes Administrator	Lourdes will be limited to activities performed at the hospital.	05/07/07	Continue until canceled by either of the parties upon 30 days written notice to the other party.	RL SES
Kadlec Medical Center (KMC) Richland, Washington	Significantly injured, contaminated persons will be admitted to facility for appropriate medical care.	KMC Administrator	KMC will be limited to activities performed at the hospital.	05/07/07	Continue until canceled by either of the parties upon 30 days written notice to the other party.	RL SES
Kennewick General Hospital (KGH) Kennewick, Washington	Significantly injured, contaminated persons will be admitted to facility for appropriate medical care.	KGH Administrator	KGH will be limited to activities performed at the hospital.	05/07/07	Continue until canceled by either of the parties upon 30 days written notice to the other party.	RL SES
Tri-County Mutual Aid Agreement	Provide mutual aid to parties hereto desire to augment the fire and emergency medical protection available in their establishments, districts, agencies, and municipalities in the event of large fires or conflagrations or other disaster.	Hanford Fire Department	Assistance under the agreement is not mandatory.	02/05/98	Remain in full force and effect until canceled by mutual agreement of the parties hereto or by written notice by one party to the other party giving ten days notice of said cancellation.	Hanford Fire Department
Richland Police Department	Mutual law enforcement assistance.	Richland Police Department	Assistance will be provided subject to the provision of the agreement and any other conditions as the parties may agree.	04/02/09	Indefinite duration.	RL SES
West Richland Police Department	Mutual law enforcement assistance.	West Richland Police Department	Assistance will be provided subject to the provision of the agreement and any other conditions as the parties may agree.	04/02/09	Indefinite duration.	RL SES
Kennewick Police Department	Mutual law enforcement assistance.	Kennewick Police Department	Assistance will be provided subject to the provision of the agreement and any other conditions as the parties may agree.	04/27/09	Indefinite duration.	RL SES
Benton County Sheriff	Mutual law enforcement assistance.	Benton County Sheriff	Assistance will be provided subject to the provision of the agreement and any other conditions as the parties may agree.	04/03/09	Indefinite duration.	RL SES

PARTIES	SERVICES/AREAS OF COPERATION	POINTS OF CONTACT	CONSTRAINTS	DATE	EXPIRATION DATE	WHERE ON FILE
Franklin County Sheriff	Mutual law enforcement assistance.	Franklin County Sheriff	Assistance will be provided subject to the provision of the agreement and any other conditions as the parties may agree.	04/07/09	Indefinite duration.	RL SES
Washington State Patrol	Mutual law enforcement assistance.	Washington State Patrol	Assistance will be provided subject to the provision of the agreement and any other conditions as the parties may agree.	04/29/09	Indefinite duration.	RL SES
Adams County Sheriff	Mutual law enforcement assistance.	Adams County Sheriff	Assistance will be provided subject to the provision of the agreement and any other conditions as the parties may agree.	04/07/09	Indefinite duration.	RL SES
Grant County Sheriff	Mutual law enforcement assistance.	Grant County Sheriff	Assistance will be provided subject to the provision of the agreement and any other conditions as the parties may agree.	04/06/09	Indefinite duration.	RL SES
Yakima County Sheriff	Mutual law enforcement assistance.	Yakima County Sheriff	Assistance will be provided subject to the provision of the agreement and any other conditions as the parties may agree.	04/07/09	Indefinite duration.	RL SES
Pasco Police Department	Mutual law enforcement assistance.	Pasco Police Department	Assistance will be provided subject to the provision of the agreement and any other conditions as the parties may agree.	04/03/09	Indefinite duration.	RL SES
U.S. Fish and Wildlife Service (FWS) and Mid-Columbia River National Wildlife Refuge Complex (NWRC)	Mutual law enforcement assistance.	FWS and NWRC	Agreement strictly for internal management purposes. It is not legally enforceable and not to create legal obligation.	07/28/09	Indefinite unless terminated upon 30 days written notice by either party to the other party.	RL SES
Washington Department of Fish and Wildlife (WDFW)	Mutual law enforcement assistance.	WDFW	Agreement strictly for internal management purposes. It is not legally enforceable and not to create legal obligation.	04/28/09	Indefinite unless terminated upon 30 days written notice by either party to the other party.	RL SES

4.0 EVENT CATEGORIZATION, CLASSIFICATION, AND OTHER DETERMINATIONS

Categorization and classification of events are crucial to ensuring that appropriate notifications and response actions are promptly initiated. Event categorization and classification criteria are developed and maintained to include events that require similar actions. The spectrum of actions triggered by categorization range from management activities that are not required to be initialized until after an event is closed out (i.e., occurrence reporting), to full activation of onsite and offsite emergency response organizations.

At the Hanford Site, six event categories are used to meet the requirements of DOE Orders. The six event categories are: Operational Emergency, Significance Category 1, Significance Category R, Significance Category 2, Significance Category 3, and Significance Category 4. Depending on the severity, an Operational Emergency may further be classified as an Alert, Site Area Emergency, or General Emergency.

In addition to categorization and classification, state and Federal regulations and mutual agreements between RL and state and county agencies require that events be assessed to determine if they meet RCRA contingency plan implementation criteria in order to comply with WAC-173-303-360(2)(d) requirements, or if they may generate public concern or media interest, which are termed as an Abnormal Event.

Since events may meet one or more event criteria, a sequential evaluation process prioritized according to the time urgency of the required actions is employed. This section describes the provisions that shall be established and maintained as methods to be used to recognize, categorize, and classify events in order to protect workers, the public, and the environment. The Significance Category 1, R, 2, 3, and 4 categories are used solely for occurrence reporting purposes, which are delineated in DOE O 232.2, *Occurrence Reporting and Processing of Operations Information*. Occurrence reporting is not addressed in this plan.

4.1 OPERATIONAL EMERGENCY

Operational Emergencies are major unplanned or abnormal events or conditions that involve or affect facilities/activities by causing or having the potential to cause serious health and safety or environmental impacts; require resources from outside the immediate/affected facility or local event scene to supplement the initial response; and require time-urgent notifications to initiate response activities at locations beyond the event scene.

NOTE: Hanford Site response agencies (e.g., Hanford Fire Department, Hanford Patrol, etc.) are not considered to be resources from outside the immediate/affected facility or local event scene.

Operational Emergencies are divided into Base Program Operational Emergencies or Hazardous Material Operational Emergencies. Such emergencies are caused by, involve, or affect DOE facilities or activities and represent, cause, or have the potential to cause the events or conditions described in the respective subsections below. Incidents that can be controlled by employees or maintenance personnel in the immediate/affected facility or area are not Operational Emergencies. Incidents that do not pose a significant hazard to safety, health, and/or the environment and that do not require a time-urgent response are not Operational Emergencies. Initiating events that warrant categorization as Operational Emergencies shall be included in site- and facility-specific procedures.

An event must be categorized as an Operational Emergency as promptly as possible, but no later than 15 minutes after event recognition/identification/discovery by an individual with categorization/classification authority. Emergencies, once categorized, shall not be downgraded. An event determined to be an emergency will remain so until the emergency response is terminated.

RL/ORP/PNSO shall determine the criteria to be used to categorize and classify Operational Emergencies based on site-specific criteria. Additional criteria may be based on the DOE *Emergency Management Guide* (DOE 2007). Site contractors shall maintain procedures to ensure recognition and appropriate categorization and classification of emergencies.

4.1.1 Base Program Operational Emergency

A Base Program Operational Emergency shall be declared when events occur that represent a significant degradation in the level of safety at a facility and that require time-urgent response efforts from outside the facility but do not involve the release or potential release of significant quantities of radiological or nonradiological materials. Since Base Program Operational Emergencies do not involve the release of significant quantities of hazardous materials, they do not require further classification (i.e., as Alert, Site Area Emergency, or General Emergency). Such events include health and safety, environmental, security and safeguards, and hazardous biological agent or toxin.

The designated point-of contact (e.g., BED/BW, contractor single point-of-contact), with assistance from Hanford EOC Shift Office personnel, will assess event information to determine if the event should be categorized as a Base Program Operational Emergency. The criteria for categorization of a Base Program Operational Emergency are part of the Abnormal Event criteria, which is contained as a single criteria list within DOE-0223, *Emergency Plan Implementing Procedures*.

Additionally, offsite transportation events involving DOE-owned hazardous materials may be categorized as Base Program Operational Emergencies and, as such, do not require classification.

Notifications regarding Base Program Operational Emergencies shall be made in accordance with subsection 5.1.1.1 of this plan.

4.1.2 Hazardous Material Operational Emergency

If an Operational Emergency represents a specific threat to workers and the public due to the release or potential release of significant quantities of radiological and nonradiological hazardous materials, it shall be classified as either an Alert, Site Area Emergency, or General Emergency, in order of increasing severity.

For facility events, the initial event classification shall be made by the BED or IC in accordance with established procedures.

For nonfacility events (e.g., transportation events, wildland fires), the initial event classification shall be made by the Hanford EOC Shift Office.

The emergency classification shall be reviewed periodically to ensure the classification is commensurate with response activities; however, the classification shall not be downgraded until termination of the event. The criteria used to recognize and classify emergencies, called emergency action levels (EALs), are delineated in subsection 4.4. Hazardous Material Operational Emergency notification requirements are delineated in subsection 5.1.1.2 of this plan.

4.1.2.1 Alert. An Alert shall be declared when events are predicted, are in progress, or have occurred that result in one or more of the following.

(1) An actual or potential substantial degradation in the level of control over hazardous materials (radiological and nonradiological). The radiation dose from any release to the environment of radioactive material or a concentration in air of other hazardous material is expected to exceed criterion corresponding to ten percent of the applicable protective action criterion at the facility boundary; but it is not expected that the applicable protective action criterion will be exceeded at or beyond the facility boundary. (See Table 4-2 for specific protective action criterion exposure levels.)

(2) An actual or potential substantial degradation in the level of safety or security of a facility or activity that could, with further degradation, produce a Site Area Emergency or General Emergency.

Additionally, an Alert represents an event where the entire Hanford Site ERO is required to provide more than event monitoring or minimal assistance to the facility organization.

At an Alert, the Hanford Site ERO shall:

- activate the Hanford EOC and establish communications, consultation, and liaison with offsite agencies;
- initiate predetermined protective actions (e.g., evacuation, sheltering) for onsite personnel and liaison with offsite agencies for the recommendation of predetermined public protective actions;
- continuously assess pertinent information for decision makers, offsite agencies, the public, and other appropriate entities;
- conduct appropriate assessments, investigations, sampling, and monitoring;
- mitigate the severity of the occurrence or its consequences;
- prepare for other response actions should the situation become more serious, including request for appropriate DOE emergency response assets; and
- provide information to the public and the media.

4.1.2.2 Site Area Emergency. A Site Area Emergency shall be declared when events are predicted, in progress, or have occurred that result in one or more of the following situations.

(1) An actual or potential major failure of functions necessary for the protection of workers or the public. The radiation dose from any release of radioactive material or concentration in air from any release of other hazardous material is expected to be equal to or exceed the applicable protective action criterion exposure levels at or beyond the facility boundary but is not expected to be exceeded at or beyond the Hanford Site boundary. (See Table 4-2 for specific protective action criterion exposure levels. Refer to site boundary definition in subsection 1.4.2 of this plan.)

(2) Actual or potential major degradation in the level of safety or security of a facility or process that could, with further degradation, produce a General Emergency.

At a Site Area Emergency, the Hanford Site ERO shall perform the same response actions as for an Alert.

4.1.2.3 General Emergency. A General Emergency shall be declared when events are predicted, in progress, or have occurred that result in the actual or imminent catastrophic reduction of facility safety or security systems with potential for the release of large quantities of hazardous materials (radiological or nonradiological) to the environment. The radiation dose from any release of radioactive material or a concentration in air from any release of other hazardous material is expected to be equal to or exceed the applicable protective action criterion exposure levels at or beyond the Hanford Site boundary. (See Table 4-2 for specific protective action criterion exposure levels. Refer to site boundary definition in subsection 1.4.2 of this plan.)

At a General Emergency, the Hanford Site ERO shall perform the same response actions as for an Alert.

Operational Emergency notification requirements are delineated in section 5.0 of this plan.

4.2 IMPLEMENTATION OF THE RESOURCE CONSERVATION AND RECOVERY ACT CONTINGENCY PLAN[1]

Documentation to meet RCRA contingency plan requirements must be prepared by certain facilities conducting activities regulated under WAC-173-303 (Washington Dangerous Waste Regulations) in accordance with subsection 1.1. These requirements are incorporated into the Hanford Site's overall emergency planning documentation. Therefore, there is not a specific document titled "contingency plan."

For a facility event, the BED/BW shall determine whether the requirements of WAC-173-303-360(2)(d) were met based upon an evaluation and assessment in consultation with their respective site contractor environmental single point-of-contact.

The BED/BW ensures that trained personnel identify the character, source, amount, and areal extent of the release, fire, or explosion to the extent possible. Identification of waste can be made by activities that can include, but are not limited to, visual inspection of involved containers, sampling activities in the field, reference to inventory records, or by consulting with facility personnel. Samples of materials involved in an emergency might be taken by qualified personnel and analyzed as appropriate. These activities must be performed with a sense of immediacy and shall include available information.

The BED/BW shall use the following guidelines to determine if an event has met the requirements of WAC-173-303-360(2)(d):

(1) The event involved an unplanned spill, release, fire, or explosion;

AND

(2a) The unplanned spill or release involved a dangerous waste, or the material involved became a dangerous waste as a result of the event (e.g., product that is not recoverable),

or

(2b) The unplanned fire or explosion occurred at a facility or transportation activity subject to RCRA contingency plan requirements;

[1] Permit requirement: Subsection 4.2, Class 1 Modification 3/31/01

AND

(3) Time-urgent response from an emergency services organization was required to mitigate the event, or a threat to human health or the environment exists.

As soon as possible, after stabilizing event conditions, the BED/BW shall determine, in consultation with the respective site contractor environmental single point-of-contact, if notification to Ecology is needed to meet WAC-173-303-360(2)(d) reporting requirements. If all of the conditions under 1, 2, and 3 are met, notifications are to be made to Ecology. The notification process is delineated in subsection 5.1.2.1. Operational Emergency notifications described in subsection 5.1.1 may also be required as determined on a case-by-case basis by the BED/BW.

If review of all available information does not yield a definitive assessment of the danger posed by the incident, a worst-case condition will be presumed and appropriate protective actions and notifications will be initiated. The BED/BW is responsible for initiating any protective actions based on their best judgment of the incident.

For transportation events on the Hanford Site that are outside of established facility boundaries, it is the responsibility of the Incident Command Organization staff to contact the respective site contractor environmental single point-of-contact for the contractor that initiated the shipment. Transportation incidents do not include events involving passenger vehicles, whether government or privately owned. Based on the event information received from the Incident Command Organization staff and application of the three criteria above, the respective site contractor environmental single point-of-contact shall make the determination whether the requirements of WAC-173-303-360(2)(d) are met. If reporting requirements are met, notifications delineated in subsection 5.1.2.1 shall be performed. Operational Emergency notifications described in subsection 5.1.1 may also be required and are determined on a case-by-case basis by the Incident Command Organization staff.

4.3 ABNORMAL EVENT

There are a variety of events or situations that may occur on the Hanford Site that, while not creating or indicating an emergency condition, may generate public concern or media interest. Local, state, and tribal agencies need timely information regarding these events in order to reassure the public that these situations do not threaten their health or safety.

RL will work with offsite agencies to maintain criteria that will be used to identify these situations, termed Abnormal Event. The criteria will include those events as mutually agreed to by RL/ORP/PNSO and the offsite agencies. Furthermore, any incident categorized as an Operational Emergency, but not further classified as an Alert, Site Area Emergency, or General Emergency, will automatically trigger notifications to offsite agencies as an Abnormal Event. RL/ORP/PNSO will further communicate criteria changes to the site contractors upon acceptance by RL/ORP/PNSO and the offsite agencies.

In addition, it is possible to have transitory events where the EAL criteria were met at some point in the past but no longer exist when the event is reviewed for classification purposes. Such events do not pose a threat to workers or the public since there is no release of hazardous materials, but may generate public concern or media interest and, as such, will be reported under the Abnormal Event criteria.

4.4 EMERGENCY ACTION LEVELS

The EALs are specific, predetermined, observable criteria used to detect, recognize, and determine the classification of Hazardous Material Operational Emergencies identified by the EPHA. The EALs are typically identified as either event-based or symptom-based. The distinction arises from the available methods of detecting and recognizing the initiating conditions of the event. The development of symptom-based EALs is the preferred approach recognizing that there may be some initiating conditions that require an event-based approach. Initiating conditions must be identified specifically in EAL procedures and must be observable and recognizable in a timely manner by responsible personnel.

Facility-specific and nonfacility (e.g., onsite transportation incident, wildland fire, etc.) EALs shall be developed for the spectrum of potential Hazardous Material Operational Emergencies identified by the EPHA and must include protective actions corresponding to each EAL. Additional guidance for developing EALs can be found in the DOE *Emergency Management Guide* (DOE 2007) regarding EPHA and event classification.

The definitions delineated in Table 4-1, used in conjunction with Table 4-2, depict the criteria used at the Hanford Site to classify Hazardous Material Operational Emergency events. The BED/IC or Hanford EOC Shift Office (for nonfacility events) is responsible for making initial classification of emergency events in accordance with RL/ORP/PNSO and site contractor procedures.

Event classification using EALs also forms the basis for notification and participation of offsite organizations and for determining what and when protective actions will be implemented. As such, EALs and related information must be consistent and integrated with the emergency plans and procedures of offsite Federal, tribal, state, and local organizations and should be reviewed annually, as appropriate by all parties involved in response activities.

> NOTE: It is possible when comparing event indications to an EAL set to discover that the EAL criteria were previously met, but those conditions no longer exist. If there is no threat to workers or the public then the incident may be a transitory event as delineated in subsection 4.3.

4.4.1 Symptom-Based Emergency Action Levels

Symptom-based EALs are dependent on one or more observable conditions or parameter values (i.e., symptoms) that are measurable over some continuous spectrum. The EALs should be the same indicators as those used to monitor routine facility operation. The level of severity indicated by these symptoms is directly related to the failure of or challenge to the facility's hazardous materials confinement barriers, other symptoms or events that occur simultaneously, and the ability of personnel to gain control and bring the indicator(s) back to safe levels. The resulting facility-specific EALs shall consist of specific quantified values (e.g., alarms and control instrument readings) that require no additional interpretation by the user. By comparing the observed value to the EALs in event classification procedures, the correct Hazardous Material Operational Emergency class can be readily determined.

4.4.2 Event-Based Emergency Action Levels

Event-based EALs address the occurrence of discrete events with potential safety significance. The level of severity is determined by the degree to which hazardous material confinement barriers are either failed or challenged as a result of the event, and the ability of personnel to gain control of the situation. Event classification requires the interpretation of one or more qualitative conditions or discrete observable indicators to determine if the existing situation matches the descriptions contained in the event classification procedure.

4.4.3 Use of Emergency Action Levels

On determination that an event has occurred at or affecting a Hanford Site facility, the BED/IC or Hanford EOC Shift Office (for nonfacility events) shall promptly assess the conditions, compare the indications to the EAL set, and determine the appropriate Hazardous Material Operational Emergency classification. Then, immediate protective and mitigative actions, activation of the emergency response organization, and appropriate notifications are carried out.

The Hanford EOC is responsible for ensuring that the emergency has been classified appropriately by the BED/IC or Hanford EOC Shift Office (for nonfacility events) by reviewing the appropriate EAL to determine that the correct emergency classification has been selected.

Table 4-1

Summary of Hazardous Material Operational Emergency Classifications

OPERATIONAL EMERGENCY CLASSIFICATION	FACILITY OR PROCESS EVENT	ONSITE TRANSPORTATION EVENT
Alert	Actual or potential substantial degradation of level of control over hazardous material (radiological or nonradiological). Releases are not expected to exceed applicable protective action criterion levels at or beyond the facility boundary. OR Actual or potential substantial degradation in the level of safety or security that could, with further degradation, produce a Site Area Emergency or General Emergency.	Actual or potential substantial degradation of the safety of the shipment. Protective actions[1] are only expected for personnel engaged in cleanup, recovery and investigation.
Site Area Emergency	Actual or potential major failures of functions necessary for the protection of workers or the public. Releases could exceed applicable protective action criterion levels onsite but not offsite. OR Actual or potential major degradation in the level of safety or security that could, with further degradation, produce a General Emergency.	Actual or potential major reduction in safety of a shipment. Protective actions are taken beyond the exclusion zone[2] onsite but not at nearest site boundary.
General Emergency	Actual or imminent catastrophic reduction of facility safety or security systems with potential for the release of large quantities of radiological or nonradiological materials to the environment. Releases reasonably expected to exceed applicable protective action criterion levels offsite.	Actual or imminent catastrophic reduction in safety of a shipment. Protective actions are recommended beyond the site boundary.

[1] Protective actions for transportation incidents will be determined by the IC based on the Emergency Response Guidebook (ERG), latest edition.

[2] The exclusion zone is defined as the immediate vicinity of the accident.

Table 4-2

Hanford Site Hazardous Material Operational Emergency Classification Criteria

ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
≥10% of PAC[1]-2 & <PAC-2 at the facility boundary[2]	≥PAC-2 at the facility boundary	≥PAC-2 at the site boundary
≥100 mrem TED[3] at the facility boundary	≥1 rem TED at the facility boundary	≥1 rem TED at the site boundary

[1] For chemicals, the Protective Action Criteria (PAC), listed in order of preference, must be used: One hour Acute Exposure Guideline Levels promulgated by the EPA; Emergency Response Planning Guidelines published by the American Industrial Hygiene Association; and Temporary Emergency Exposure Limits developed by DOE.

[2] The facility boundary is defined as a distance of 100 meters from the release point unless otherwise justified in the EPHA.

[3] The total effective dose (TED) includes the summation of the doses delivered during the early phase of the emergency from plume submersion, ground/sky shine, and inhalation (see section 2.2 of EPA 400-R-92-001). The EPHA and Authorization Basis exposure pathways and times may be different reflecting a difference in purpose of the two sets of analyses.

5.0 NOTIFICATIONS AND COMMUNICATIONS

5.1 NOTIFICATIONS

Notifications are made for events on the Hanford Site according to the event category (i.e., Operational Emergency and Significance Category); for environmental events, including those that meet the RCRA contingency plan implementation criteria; and for events that may generate public concern or media interest, termed Abnormal Events. Notifications shall be made in order of urgency with Operational Emergency (Hazardous Material Operational Emergency only) notifications performed first; Environmental notifications (including those that meet RCRA contingency plan implementation requirements) performed second; and Abnormal Event (including Base Program Operational Emergency) and Significance Category notifications performed last.

Contractors shall maintain procedures to ensure that notification and reporting requirements are made in accordance with DOE O 151.1C and DOE O 232.2, *Occurrence Reporting and Processing of Operations Information*; applicable Federal, state, or local requirements; and special agreements with offsite agencies or tribal governments.

The Significance Category occurrences are used solely for reporting versus immediate action purposes. Notifications and written reports of incidents meeting occurrence reporting criteria are made to DOE-HQ and also to offsite entities as requested. RL shall maintain a listing of offsite agencies that are to receive the occurrence reports. While occurrence reporting is not addressed in this plan, additional information regarding Significance Category reporting is delineated in DOE O 232.2. Offsite transportation events involving DOE-owned hazardous materials shall be reported in accordance with DOE O 151.1C.

RL/ORP/PNSO shall monitor the notification process to ensure notifications of applicable emergency events as necessary or appropriate.

5.1.1 Operational Emergency Notifications[1]

Prompt and accurate emergency notifications are essential to mitigating consequences and for protecting the health and safety of workers and the public. For Operational Emergencies, procedures shall be established and maintained to provide prompt initial notification to workers and emergency response personnel and organizations, including appropriate offsite agencies, under the most limiting set of conditions.

For Operational Emergencies that also meet RCRA contingency plan implementation criteria in accordance with subsection 4.2, personnel shall perform notifications in accordance with subsection 5.1.2.

5.1.1.1 Base Program Operational Emergency Notifications. Site contractors shall ensure that their designated points-of-contact (e.g., BED/BW, contractor single point-of-contact) report events that potentially meet Base Program Operational Emergency criteria to the Hanford EOC Shift Office immediately.

[1] Permit requirement: Subsection 5.1.1, Class 1 Modification 3/31/01

The designated point-of-contact, with assistance from Hanford EOC Shift Office personnel, will assess the event information to determine if the event should be categorized as a Base Program Operational Emergency. If the event meets the Base Program Operational Emergency criteria, the Hanford EOC Shift Office shall notify the DOE-HQ Operations Center within 30 minutes following categorization and the offsite agencies immediately following as part of the Abnormal Event notification delineated in subsection 5.1.3.

The same notification requirements apply to offsite transportation events involving DOE-owned hazardous materials. The Hanford EOC Shift Office shall determine event categorization and initiate the required notifications.

Criteria for determining Base Program Operational Emergencies are delineated in subsection 4.1.1 of this plan.

5.1.1.2 Hazardous Material Operational Emergency Notifications.[2] Hazardous Material Operational Emergency notifications shall be made quickly and accurately to:

- augment the site and facility operating staff with personnel in designated response roles to respond to the emergency;
- activate emergency centers;
- facilitate public notification by offsite authorities and agencies that have decision-making authority for directing protective actions (e.g., evacuation of local areas); and
- protect site and facility personnel and emergency workers through the provision of information necessary to implement accountability and protective actions such as sheltering, decontamination, and evacuation.

The Hazardous Material Operational Emergency notification process is outlined in Figure 5-1.

5.1.1.2.1 Initial Onsite and Offsite Notifications. The initial event classification (Alert, Site Area Emergency, or General Emergency per criteria delineated in subsections 4.1.2.1, 4.1.2.2, and 4.1.2.3 respectively) shall be made by the BED/IC or Hanford EOC Shift Office (for nonfacility events) in accordance with established procedures.

The BED/IC or Hanford EOC Shift Office (for nonfacility events) shall initiate immediate notifications via the 911 emergency number to request emergency response assistance and activate applicable components of the Hanford Site Emergency Alerting System, which will provide additional onsite notifications and activate the Hanford EOC. The BED/IC shall also notify onsite personnel within their geographic area of responsibility via facility sirens or plant telephone so that they can take appropriate protective actions.

Additionally, the BED/IC is responsible for ensuring that pertinent information is provided to the Hanford EOC Shift Office, in accordance with established procedures, in order to complete the Hanford Emergency Notification Form (Figure 5-2) and make offsite notifications.

[2] Permit requirement: Subsection 5.1.1.2, Class 1 Modification 9/30/99

Figure 5-1

Hazardous Material Operational Emergency Notifications

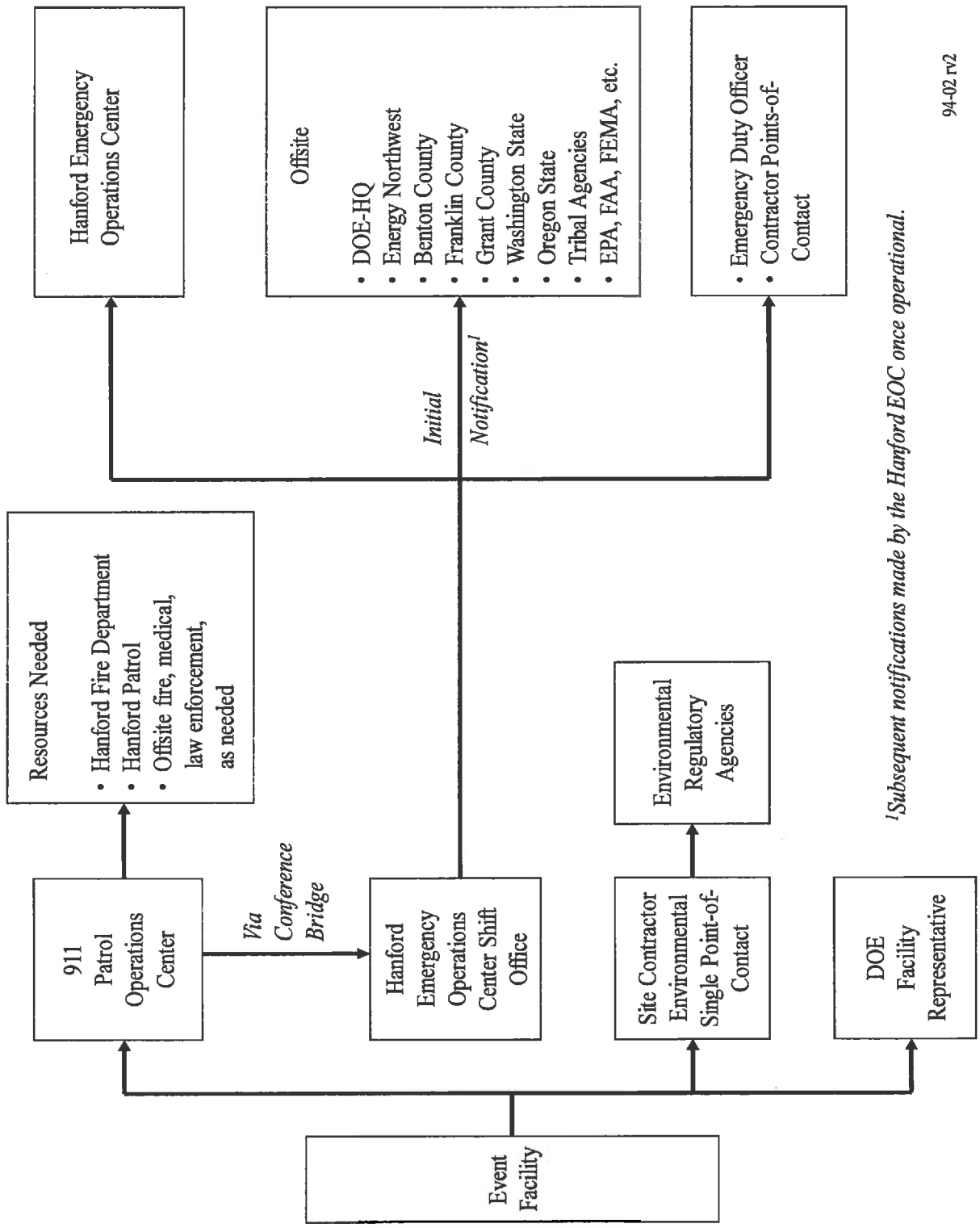


Figure 5-2

Hanford Emergency Notification Form

RL-F-5540.1
(REV 4)
(03/12)

U.S. DEPARTMENT OF ENERGY
HANFORD EMERGENCY NOTIFICATION FORM

No. _____

1 NOTIFICATION PROVIDED BY: Name: _____ Phone: (509) _____

2 AREA AND FACILITY: _____

3 TYPE EVENT: a. ☐ Emergency b. ☐ Exercise/Drill

4 CLASSIFICATION/STATUS: a. ☐ Initial Classification b. ☐ Reclassification c. ☐ Correction d. ☐ PAR Change/Addition e. ☐ Information f. ☐ Termination

5 EMERGENCY CLASSIFICATION LEVEL AND OFFSITE PROTECTIVE ACTION RECOMMENDATIONS:

AREA	a. ☐ ALERT	b. ☐ SITE AREA EMERGENCY	c. ☐ GENERAL EMERGENCY
☐ 100K	None	Evacuate Columbia River from Vernita Bridge to White Bluffs Ferry Landing.	• Evacuate Columbia River from Vernita Bridge to White Bluffs Ferry Landing. • Evacuate Section 5, east of Hwy. 24.
☐ 200E	None	None	• Evacuate Columbia River from Vernita Bridge to Leslie Groves Park. • Evacuate Sections 6, 6, and 7.
☐ 200W[1]	None	None	None
☐ 200W[2]	None	Evacuate Columbia River from Vernita Bridge to White Bluffs Ferry Landing.	• Evacuate Columbia River from Vernita Bridge to White Bluffs Ferry Landing. • Evacuate Sections 5 and 7.
☐ 300	None	Evacuate Columbia River from White Bluffs Ferry Landing to Leslie Groves Park.	• Evacuate Columbia River from White Bluffs Ferry Landing to Leslie Groves Park. • Evacuate 2.2 mile radius.
☐ Other	None	None	Evacuate Columbia River from Vernita Bridge to Leslie Groves Park.

[1]For emergencies at U Plant, REDOX, 222-S, 224-T, 203W, or 200W Tank Farms.
[2]For emergencies at PFP, LLBG, CWC, T Plant, or WRAP.

6 TYPE OF INCIDENT:

a. Security Incident Yes ☐ No ☐

EAL No.: DOE-0223, RLEP 1.0, Appendix 1-_____ Table _____

Description of Incident: _____

7 RELEASE TO THE OUTSIDE ENVIRONMENT INFORMATION:

a. ☐ No Release (No indicators)
b. ☐ Unknown (Indicators of possible release, but not confirmed)
c. ☐ Confirmed Release (Visible or instrument indication of hazardous release)
- Estimated Start Time of Release: _____
☐ Airborne ☐ Spill ☐ to Columbia River
d. ☐ Release Terminated - Time: _____

8 METEOROLOGICAL DATA:

Wind Speed _____ mph
Wind Direction: from _____
Precipitation: ☐ Yes ☐ No
Stability Class:
A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐

9 PROGNOSIS OF SITUATION: a. ☐ Unknown b. ☐ Stable c. ☐ Escalating d. ☐ Improving

10 ADDITIONAL OFFSITE PROTECTIVE ACTION RECOMMENDATIONS:

_____

APPROVED: _____ DATE: _____ TIME: _____

Within 15 minutes from declaration of an emergency event classified as an Alert, Site Area Emergency, or General Emergency by the BED/IC or Hanford EOC Shift Office (for nonfacility events), the Hanford EOC Shift Office shall make offsite notifications to:

- DOE-HQ Operations Center;
- Benton County, Franklin County, Grant County, Washington State, and Energy Northwest via the DOE Crash Alarm Telephone System (hot line); and
- Oregon State.

Subsequently, the Hanford EOC Shift Office shall also make onsite notifications to the:

- PNNL single point-of-contact;
- CHPRC single point-of-contact;
- WRPS single point-of-contact;
- WCH single point-of-contact;
- BNI single point-of-contact; and
- HPMC single point-of-contact.

Within 30 minutes of the event declaration, the Hanford EOC Shift Office Duty Officer shall notify, as applicable to the event, other offsite agencies that may have personnel working in remote locations of the Hanford Site (e.g., personnel at locations without alarm or siren capabilities). All other notifications shall be made as soon as practical. The Hanford EOC Shift Office shall maintain a list of agencies to be notified.

5.1.1.2.2 Reclassification Notifications. Reclassification of rapidly escalating emergencies shall be made by the BED/IC or Hanford EOC Shift Office (for nonfacility events) until the Hanford EOC is declared operational. The BED/IC shall provide immediate appropriate protective action notification to onsite personnel within their respective geographic area of responsibility and also provide notification to the POC and Hanford EOC Shift Office via the 911 emergency number regarding the reclassification. The Hanford EOC Shift Office then shall notify the offsite emergency response organizations of the event reclassification.

Upon declaration of their operability and completion of an event turnover between the IC/BED and Site Emergency Director, the Hanford EOC shall have the responsibility for reclassifying or terminating emergencies, disseminating additional protective action decisions to onsite personnel, and performing offsite notifications that include protective action recommendations.

The same offsite notification requirements listed above apply anytime an event is reclassified.

5.1.1.2.3 U.S. Department of Energy Emergency Response Assets. It is the responsibility of the Hanford EOC to forward any requests for national DOE emergency response assets to the Regional Response Coordinator. A description of each asset is delineated in subsection 3.2.1 of this plan. Response to events requiring DOE emergency assistance shall be directed to appropriate DOE-HQ elements. DOE responsibilities for emergency assistance are delineated within interagency Federal response and recovery plans, Executive Orders, and/or international agreements. Specific notifications for response to a request for radiological assistance are described in DOE/RL-92-49, *U.S. Department of Energy Radiological Assistance Program Response Plan Region 8*.

5.1.1.2.4 Reports. Following termination of emergency response, and in conjunction with the occurrence reporting process per DOE O 232.2, the facility shall submit a final report on the emergency to the Occurrence Reporting and Processing System. The respective RL/ORP/PNSO Manager shall designate a lead evaluator to conduct an evaluation and submit a final report on the emergency response. Upon approval by the respective RL/ORP/PNSO Manager, the final report shall be submitted to the DOE-HQ Director, Office of Emergency Operations.

All reports and releases shall be reviewed for classified or unclassified controlled information (e.g., Unclassified Controlled Nuclear Information) prior to being provided to personnel not authorized access to such information, entered into data bases not authorized for such information, or transmitted using non-secure communications equipment.

5.1.1.3 DOE-HQ Operations Center Emergency Notification Information. At a minimum, emergency notification to the DOE-HQ Operations Center shall consist of a phone call providing as much information as is known at the time. The same information shall be provided by e-mail or a fax either immediately prior to or following the phone call. Information for initial notification includes as much as possible of the following:

- that an Operational Emergency has been declared and, if appropriate the classification of the emergency;
- the description of the emergency;
- the date and time the emergency was discovered;
- the damage and casualties;
- whether the emergency has stopped other facility/site operations or program activities;
- the protective actions taken and/or recommended;
- the notifications made;
- the weather conditions at the scene of the emergency;
- the level of any media interest at the Hanford Site; and
- Hanford point-of-contact information.

5.1.2 Environmental Notifications[3]

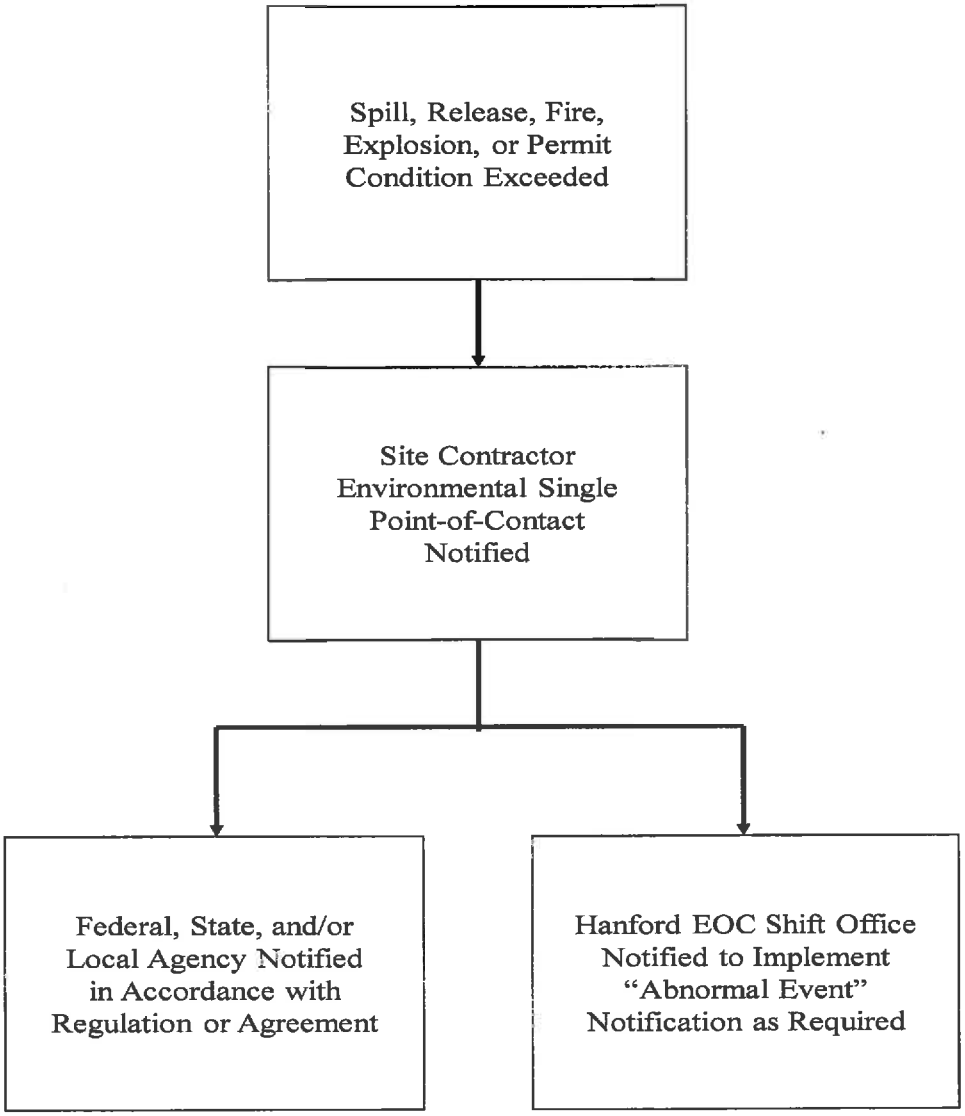
There are numerous environmental notifications that must be made including those that meet the RCRA contingency plan implementation requirements. These notifications are made either verbally or in writing, dependent on the event type. In many cases, notification requirements are based upon the quantity and location of a spill or release.

Site contractors shall maintain procedures to ensure implementation of environmental notifications in accordance with Federal, state or local requirements and agreements. Since events relating to spills or releases usually do not meet criteria for a DOE Order classifiable emergency (i.e., Alert, Site Area Emergency, or General Emergency), contractors must ensure that environmental notification procedures are consistent with the environmental notification process depicted in Figure 5-3.

[3] Permit requirement: Subsection 5.1.2, Class 1 Modification 3/31/01

Figure 5-3

Environmental Notifications



94-02r2

5.1.2.1 Initial/Verbal Notifications.[4] For any incident which involves a spill, release, fire, explosion, or environmental permit exceedence, the respective site contractor environmental single point-of-contact shall be notified to determine applicability of requirements and perform appropriate environmental notifications. The respective site contractor environmental single point-of-contact shall notify the appropriate Federal, state and/or local agencies. Additionally, the Hanford EOC Shift Office shall be notified in order to determine if an Abnormal Event notification is also required as delineated in subsection 5.1.3.

5.1.2.2 Written Reports.[5] The respective site contractor shall develop any necessary written reports and submit to RL/ORP/PNSO for review and concurrence. Written reports shall be submitted to the appropriate Federal, state or local agencies within the required time frames.

5.1.2.3 Resumption of Operations.[6] The respective site contractor environmental single point-of-contact shall notify the appropriate Federal, state and/or local agencies that the facility is in compliance with cleanup activities described in subsection 9.2.3 before operations are resumed.

5.1.3 Abnormal Event Notifications

There are a variety of events or situations that may occur on the Hanford Site that, while not creating or indicating an emergency condition, may generate public concern or media interest. Local, state and tribal entities need timely information on these events in order to reassure the public that these situations do not threaten their health or safety.

RL shall maintain a process to advise offsite entities of situations - termed Abnormal Event - which may generate public concern or media interest. RL will work with appropriate offsite entities to maintain the criteria to be used to initiate the Abnormal Event notifications, the notification procedure, and a list of entities to be notified. Additionally, RL shall notify the site contractors when criteria change. The Abnormal Event notification process is further delineated in DOE-0223, *Emergency Plan Implementing Procedures*.

Site contractors are responsible to ensure that events meeting the Abnormal Event notification criteria at their respective facilities are promptly reported to the Hanford EOC Shift Office. The Hanford EOC Shift Office will initiate Abnormal Event notifications when notified of a situation which meets the agreed upon criteria. Additionally, offsite agencies will notify the Hanford EOC Shift Office if public or media inquiries indicate the need to initiate notifications.

5.2 COMMUNICATIONS

Effective communications methods shall be established between event scene responders, emergency managers, and response facilities. Provisions shall also be established for continuing effective communication (i.e., back up means of communication) among the response organizations throughout an emergency. To minimize the potential for confusion in disseminating information, the simplest, most direct system for communications should be established.

The communications system shall provide for designated point(s) of contact for receipt of notifications; compatibility with other Federal, tribal, state, and local response organizations; and rapid dissemination of information received to provide for timely and effective response actions.

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[4] Permit requirement: Subsection 5.1.2.1, Class 1 Modification 12/31/12
[5] Permit requirement: Subsection 5.1.2.2, Class 1 Modification 12/31/08
[6] Permit requirement: Subsection 5.1.2.3, Class 1 Modification 9/30/99

5.2.1 Telephone Number 911[7]

The Hanford Site emergency number for requesting emergency response is 911. This number shall be monitored and recorded at all times by the Hanford Patrol at the POC. The 911 emergency number shall be called when emergency conditions exist that requires responses from the Hanford Patrol or Hanford Fire (including ambulance or the Hazardous Materials Response Team), or whenever there is any doubt as to the conditions present.

Where cellular telephone is the only method of communication, onsite emergency response may be requested by calling the POC at 373-0911.

5.2.2 Telephone Number 373-3800

This is the 24-hour business telephone number for the POC. The 24-hour emergency telephone number at the POC to obtain assistance with offsite transportation events involving DOE-owned hazardous materials shipments is 1-888-766-0771.

5.2.3 Telephone Number 376-2900

This is the Hanford Site telephone number for reporting occurrences to the Hanford EOC Shift Office in accordance with occurrence reporting requirements. This number shall be monitored at all times by Hanford EOC Shift Office personnel.

5.2.4 Site Contractor Environmental Single Point-Of-Contact

Each site contractor shall maintain a communications mechanism (e.g., telephones, pagers) in order to perform the notifications described in subsection 5.1.2.1.

5.2.5 Hanford Site Emergency Alerting System

The Hanford Site Emergency Alerting System integrates automated notification components into an overall site-wide notification system. The intent of the Hanford Site Emergency Alerting System is to provide a means to contact personnel on the site regardless of their location using the communication components listed below.

Outdoor warning sirens may be activated to communicate area-wide protective actions to persons that may be located outdoors. When sirens are activated, an announcement will be made providing verbal instructions followed by a wavering siren for take cover or a steady siren for evacuation.

Message reader boards located at various locations around the Hanford Site may be used to notify personnel traveling on the site of an emergency condition or extraordinary hazardous weather condition, and will instruct commuters to tune to radio station 530 AM for further detailed instructions.

The 530 AM radio station may be used to communicate emergency information to those that may be traveling onto the Hanford Site. The radio station will be used in conjunction with the reader boards to disseminate emergency information at each of the major exit and egress areas of the site.

Computer emergency messaging may be used to provide emergency notification to site workers via personal computer work stations connected to the Hanford Local Area Network.

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[7] Permit requirement: Subsection 5.2.1, Class 1 Modification 6/30/10

The telephone notification system may be used to notify individual employees, via a recorded message on personal work telephones, regarding event information and actions employees are expected to take. This system is designed to provide notification to employees who may be indoors, but away from a computer work station. Furthermore, the telephone notification system may also be used to notify Hanford EOC response personnel by calling work or home telephones.

Tone alert radios may be used to notify workers assigned to remote locations on the Hanford Site where telephones or computers are not available.

Hanford Site pagers may provide notification to personnel who have been assigned to an associated group page for the Hanford Site area that is affected by the emergency event. This system may also be used to inform personnel with associated group pagers whose work requires routine travel between areas or those who may be working in remote locations that may be affected by the event.

While not a component of the automated Hanford Site Emergency Alerting System, two-way commercial radios may be used to receive an emergency event notification tone, which will be followed by an emergency message providing protective action information, simultaneously across the Hanford Site. Typically, these radios will be used by site employees working outdoors in remote locations.

5.2.6 General Delivery Computer Message

General delivery messages may be used to disseminate information to Hanford Site employees via personal computer work stations connected to the Hanford Local Area Network. General delivery messages are also sent to DOE and site contractor communications departments that are not connected to the Hanford Local Area Network.

5.2.7 Radios

Multiple radio systems and frequencies are available for emergency communications. A repeater station provides site-wide communications capability.

Radio transmissions, as well as mobile telephone communications, are conducted over frequencies monitored not only by Hanford Site personnel, but also by the general public. Extra precautions shall be taken to prevent communication of sensitive information during regular and emergency communications (such as names and speculative information).

5.2.8 Incident Command Post Communications

The ICP shall have communications to facilities outside of the affected event scene. Methods of communication include the use of:

- commercial telephone (adjacent buildings should be identified where commercial telephones are available);
- cellular telephone; and
- portable and/or fixed radio with capability to transmit on the Hanford Site safety network, Hanford Patrol, or Hanford Fire frequencies.

5.2.9 Hanford Emergency Operations Center Communications

The Hanford EOC shall have appropriate methods of communications including backup communications. These may include:

- commercial telephone;
- cellular telephone; and
- portable and/or fixed radio with capability to transmit on the Hanford Site safety network, Hanford Patrol, or Hanford Fire frequencies.

Additionally, the following two dedicated networks will be maintained.

- The DOE Crash Alarm Telephone System which establishes a conference bridge with:
  - Energy Northwest;
  - Benton County;
  - Franklin County;
  - Grant County;
  - Washington State;
  - Oregon State;
  - Hanford POC;
  - Hanford EOC Shift Office; and
  - Hanford EOC.

  NOTE: This system will be used by the Hanford EOC Shift Office to make initial notifications of emergency classification and PARs, and by the Hanford EOC to make subsequent notifications of emergency classifications or reclassification, PARs, and emergency termination.
- The ERO Communications Line that establishes a conference bridge and is the primary method to communicate event information between the Hanford EOC and the ICP.

5.2.10 Secure Communications

Secure communications in the Hanford EOC shall be accomplished, as necessary, using the Station Terminal Equipment (STE) telephone system. This system enables establishment of a secure, closed network for voice communications.

5.2.11 Emergency Signals

Table 5-1 lists the standard Hanford Site emergency signals, their meanings, and normal response actions. Supplementary protective action information may be provided by use of additional Hanford Site Emergency Alerting System components such as the telephone notification system, computer emergency messaging, and tone alert radios.

Table 5-1

Standard Emergency Signals[8]

SIGNAL	MEANING	ACTIONS
Gong/electronic chime	Fire	Vacate building; proceed to staging area.
Steady tone on whistle, Klaxon horn, or siren	Area evacuation	Vacate building; proceed to evacuation staging area. Personnel in vehicles shall proceed to the nearest facility staging area and report to the staging area manager.
Wavering siren or short blasts on whistle, klaxon horn or siren	Take cover (shelter)	Proceed to shelter or stay indoors. Close all exterior doors, turn off all intake ventilation (as applicable), and notify manager of whereabouts. Personnel in vehicles shall proceed to the nearest occupied facility and report to facility management.
AH-00-GA horn (howler) or flashing blue light (in high noise areas)	Nuclear criticality	Run at least 100 feet from building; proceed to staging area.
Red light with ringing bell	Air contamination	Stop work activities; immediately exit the area; notify Radiological Control personnel.
NOTE: Supplementary protective action information may be provided as necessary by use of additional Hanford Site Emergency Alerting System components such as the telephone notification system, computer emergency messaging, and tone alert radios.		

[8] Permit requirement: Table 5-1, Class 1 Modification 12/31/08

6.0 CONSEQUENCE ASSESSMENT

Initial and continuous consequence assessments are necessary to protect workers, the public, and the environment during a declared emergency. Estimates of onsite and offsite consequences of actual or potential releases of hazardous materials shall be computed and assessed in a timely manner throughout the emergency.

Consequence assessments evaluate and interpret radiological or other hazardous materials measurements or other information to provide a basis for decision-making. As such, consequence assessments shall be integrated with emergency classification and protective action decision-making; incorporated with facility and field indications and measurements; and coordinated with offsite agencies. In this context, planning includes developing and preparing postulated scenarios for onsite and offsite consequence projections for development of PARs, and identifying personnel and resources to provide an effective response.

6.1 CONSEQUENCE DETERMINATION

Provisions shall be established to adequately assess the potential or actual onsite and offsite consequences of an emergency. Hanford Site consequence assessment activities shall:

- be timely throughout the emergency;
- be integrated with the event classification and protective action process;
- incorporate monitoring of specific indicators and field measurements; and
- be coordinated with offsite agencies.

The airborne release pathway typically represents the most time-urgent situation, requiring a rapid, coordinated response.

6.1.1 Meteorological Monitoring

Representative collection of meteorological data currently is required to support environmental monitoring activities for ensuring that Hanford Site operations involving airborne releases of hazardous material comply with applicable Federal, state, and local environmental protection laws and regulations, executive orders, and internal department policies. Characterization of atmospheric transport and diffusion conditions (e.g., wind speed, wind direction, stability) in the vicinity of the Hanford Site facilities is essential for consequence assessments of airborne releases of hazardous materials. Other meteorological conditions (e.g., precipitation, temperature, and atmospheric moisture) are important to environmental surveillance activities (both routine and nonroutine) such as air concentration and ground deposition monitoring.

6.1.2 Event Scene Consequence Assessments

These assessments will be conducted at the event scene by the ICP staff. The ICP staff should continuously evaluate the environmental conditions for inhabitants of the command post and relocate the command post as necessary.

6.1.3 Area Consequence Assessments

It is necessary to evaluate the consequences of releases of radioactive and nonradioactive materials at locations beyond the immediate vicinity of the event scene. This is typically within a defined Hanford Site area (e.g., 100K, 200E, 200W, 300 Area) and includes all areas outside of the event scene and within the immediately affected area. The types of evaluations that should be conducted are those that affect the ability of operations staff to safely shutdown operational facilities and those that affect the ability of residents to take protective actions. This activity typically is performed by the UDAC for impacts to other Hanford Site populations.

6.1.4 National Atmospheric Release Advisory Center

The NARAC capacity shall be used as the backup to the primary source of consequence assessment, and as a source for corroborating or confirming consequence assessment information. Meteorological data and information on source terms for actual or potential releases of hazardous materials to the atmosphere is available to NARAC to facilitate near real-time computations.

6.2 COORDINATION OF CONSEQUENCE ASSESSMENT RESULTS

The UDAC has the primary responsibility for overall onsite and offsite consequence assessment for the Hanford Site. The UDAC staff shall continuously assess event conditions that may include:

- release source terms;
- mitigation efforts;
- onsite and offsite field team data; and
- meteorological conditions.

Modeling tools shall be used to predict the consequences of a release of hazardous materials. The results of these calculations are shared with onsite and offsite emergency responders and appropriate PARs are disseminated to affected individuals.

RL shall make provisions for representatives from Washington and Oregon to participate in the consequence assessment, field team coordination, and the offsite PAR development process.

7.0 PROTECTIVE ACTIONS AND REENTRY

An important part of the emergency management program at the Hanford Site is the planning for physical measures that may be needed to protect workers and the public from adverse health effects resulting from the release of hazardous materials. The initial response to any emergency will be to immediately protect the health and safety of persons in the immediate area. Identification of released material is essential to determine appropriate protective actions. Containment, treatment, and disposal assessment will be the secondary responses. This section describes the areas that may be impacted and the protective actions that may be needed; and ensures that reentry activities are properly and safely accomplished, and recovery and post-emergency activities commence properly.

7.1 EMERGENCY PLANNING ZONES

Emergencies at site facilities may require actions only on the Hanford Site or may affect offsite areas. The Hanford Site emergency management program uses the EPZ concept to focus emergency planning activities. The EPZs are designated areas, based upon EPHAs, in which predetermined protective actions may be required.

The extent of a planning zone is based on the distance that a particular substance could expect to be dispersed in a particular form. The two types of exposure "pathways" for both radiological and nonradiological hazardous materials are delineated below.

- Plume Exposure Pathways: Exposure to a passing cloud, or plume, of the substance resulting in direct contact of the substance with the exterior of the body or through inhalation of the substance.

- Ingestion Exposure Pathway: Dispersal of the substance to various internal organs following the ingestion (eating or drinking) of contaminated foodstuffs or water.

RL shall develop EPZs for the Hanford Site, as determined necessary by EPHAs, and submit them to affected states and counties for their use in emergency planning. Additionally, approved EPZs shall be submitted to the DOE-HQ Director, Office of Emergency Operations and the Program Secretarial Officer.

7.1.1 Plume Exposure Pathway Emergency Planning Zones

The extent of the plume exposure EPZ for radiological hazards is based upon the potential for exposure by the:

- inhalation exposure from the passing radioactive plume; and/or
- whole body external exposure to beta or gamma radiation from the plume and from deposited radioactive material.

The extent of the plume exposure EPZ for nonradiological hazardous materials is based upon the potential for exposure by:

- inhalation from the plume; and/or
- skin or eye contact with the plume.

Either of these exposure routes could dominate, depending upon the toxicological and physicochemical characteristics of the hazardous material.

The plume exposure pathway EPZ includes the area of the hazardous material spill, areas immediately surrounding the spill or release, and downwind areas projected to receive significant concentrations of hazardous materials. Plume exposure EPZs have been determined for each facility based on the radiological, nonradiological, or mixed (radiological and nonradiological) hazards. Area plume exposure EPZs (i.e., 100, 200, and 300 Areas) are determined by the largest facility EPZ in that area. The plume exposure EPZs are described in Table 7-1.

Figure 7-1 shows the plume exposure EPZs for geographical areas on the Hanford Site with potential offsite consequences.

Table 7-1

Hanford Site Area Plume Emergency Planning Zones

LOCATION	TYPE OF HAZARD DETERMINING EPZ SIZE	RADIUS OF ZONE[1]
100K Area	Radiological	8.0 kilometers/5.0 miles
200W Area	Radiological	16.0 kilometers/10.0 miles
200E Area	Radiological	5.0 kilometers/3.1 miles
300 Area	Radiological	3.5 kilometers/2.2 miles

[1]For the purposes of EPZ definition, the receptor location is defined as the south and/or west shore of the Columbia River.

7.1.2 Ingestion Exposure Pathway Emergency Planning Zone

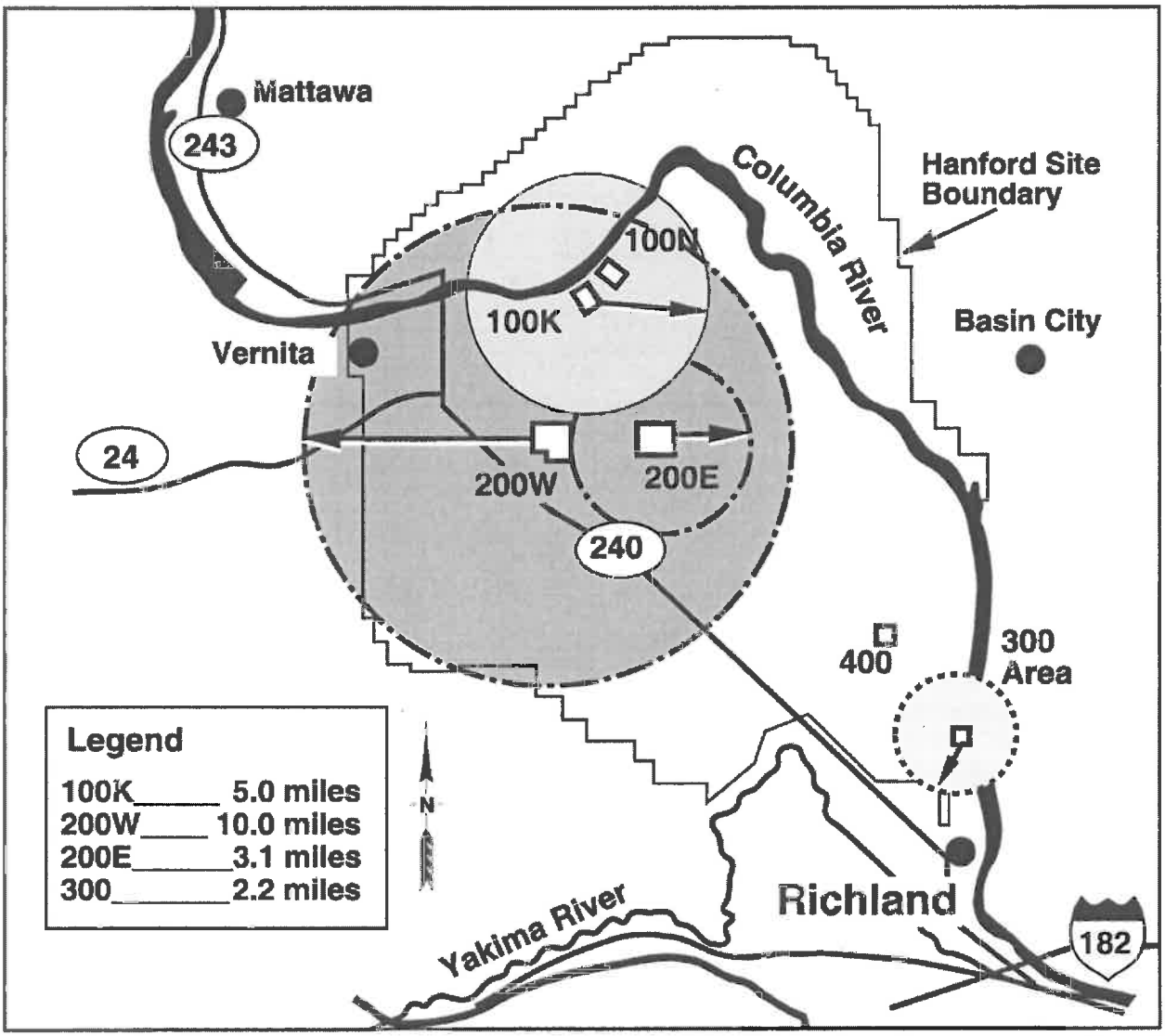
The ingestion exposure pathway EPZ for radiological and nonradiological incidents involving Hanford Site facilities corresponds to the 50-mile (80-kilometer) EPZ for Energy Northwest (Columbia Generating Station). The principal exposure from this pathway would be from ingestion of contaminated water or foods such as milk, fresh vegetables, or aquatic foodstuffs. Facility, onsite, and offsite populations may be subject to exposure through the ingestion exposure pathway. The ingestion exposure EPZ is shown on Figure 7-2.

Offsite protective actions within the ingestion exposure pathway EPZ are the responsibility of the counties and the states. The states of Washington and Oregon are responsible for developing and applying derived intervention levels for implementation of protective actions within the ingestion planning zone.

These intervention levels are based on Food and Drug Administration (FDA) guidelines and are described in respective state procedures. The intervention levels are stated in terms of concentrations of radioactivity on the ground, in the soil, and in vegetation, milk, and water, which guide emergency responders in implementation of interdiction of foodstuffs to preclude exceeding appropriate Protective Action Guidelines (PAGs).

Figure 7-1

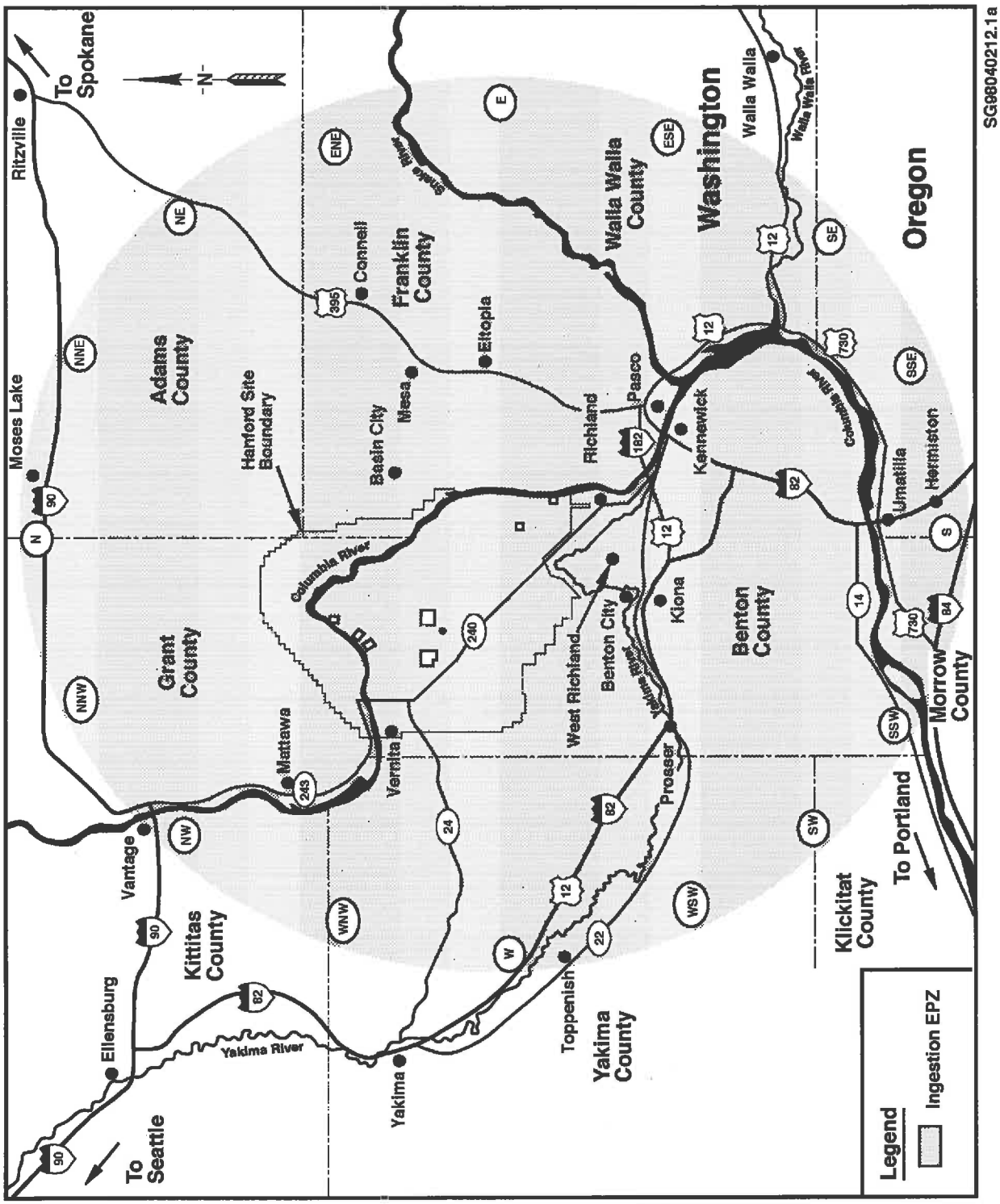
Plume Exposure Emergency Planning Zones



MSA 2011-08-0033-2

Figure 7-2

Ingestion Exposure Emergency Planning Zone



7.2 PROTECTIVE ACTIONS

Protective actions are those actions taken to preclude or reduce the exposure of individuals to hazardous materials following an accidental release at the Hanford Site. Protective actions must be promptly and effectively implemented or recommended for implementation, as needed, to minimize the consequences of emergencies and to protect the health and safety of workers and the public. Protective actions must be implemented individually or in combination to reduce exposures to a wide range of hazardous materials. Protective actions must be reassessed throughout an emergency and modified as conditions change.

Protective actions shall be predetermined for onsite personnel and the public and shall include:

- methods for controlling, monitoring, and maintaining records of personnel exposures to hazardous materials (radiological and nonradiological);
- procedures to implement the separate protective actions of sheltering and/or evacuation of workers;
- methods for controlling access to contaminated areas and for decontaminating personnel or equipment exiting the area;
- actions to be taken to increase the effectiveness of protective actions (i.e., heating, ventilation, and air conditioning shutdown during sheltering);
- methods for providing timely protective action recommendations, such as sheltering, evacuation, relocation, and food control, to appropriate offsite agencies;
- specific protective action criteria for use in protective action decision making; and
- the administration of medications.

7.2.1 Exposure Guideline Levels for Radiological Releases

PAGs are used to determine the appropriate PAR. The RL directs the use of the PAGs adopted by the states of Washington and Oregon, which are based on the PAGs published in the Environmental Protection Agency (EPA) 400 manual, Manual of Protective Action Guides and Protective Actions For Nuclear Incidents (EPA 1992). These PAGs are intended to apply to projected doses from exposures from airborne releases of radioactive materials and subsequent depositions during the early, intermediate, and late phases of an accident. The pathways considered include external gamma and beta dose from direct exposure to airborne materials and from deposited material, and the committed dose to internal organs from inhalation of radioactive material.

The projected dose values for initiating protective actions (evacuation or sheltering) specified by the states of Washington and Oregon is 1 rem total effective dose equivalent, where the projected dose represents the sum of the effective dose equivalent resulting from exposure to external sources and the committed effective dose equivalent from all significant inhalation pathways during the early phase. The PAG values for committed dose equivalent to the thyroid and the skin are 5 and 50 times larger, respectively.

The EPA PAGs are stated in terms of committed dose. Dose incurred prior to initiation of protective action (and after the early phase of an event) normally are not included when considering whether or not to take protective actions. In other words, it is intended that the PAG values be compared to the dose that can be avoided by taking protective actions.

The PAG acronym used in this plan shall be interpreted to mean where the total effective dose equivalent of 1 rem to standard man is the sum of the effective dose equivalent from exposure to external sources and the committed effective dose equivalent from inhalation during the early phase.

Response levels corresponding to these PAGs shall be derived for the specific radionuclides, foodstuffs, and animal feeds of interest according to the FDA recommendations.

7.2.2 Exposure Guideline Levels for Nonradiological Releases

For chemicals, the protective action criteria, listed in order of preference, are used: Acute Exposure Guideline Levels (AEGLs) [using the one hour emergency exposure period] promulgated by the EPA; Emergency Response Planning Guidelines published by the American Industrial Hygiene Association; and Temporary Emergency Exposure Limits (TEELs) developed by DOE. For these criteria, the exposure level to be used represents no irreversible health effects.

To determine whether a chemical consequence exceeds the protective action criteria, the highest time-weighted average concentration predicted or measured for any 15-minute period (i.e., the maximum or peak 15-minute time-weighted average concentration) should be compared to the protective action criteria. For exposure periods of less than 15 minutes, concentrations for comparison with the guidelines may be calculated over a shorter time period (e.g., the exposure duration).

For hazardous biological materials identified in subsection 1.3.3.2 of this plan, protective action criteria are considered exceeded and immediate protective actions are required for any actual or potential release of agents or toxins outside of secondary containment barriers. Long-term protective action criteria are specified by state or local public health officials.

7.2.3 Onsite Protective Actions

7.2.3.1 Hanford Emergency Operations Center. The Hanford EOC emergency procedures shall detail response actions to be taken in order to prevent or reduce exposures.

These procedures shall include provisions for:

- emergency communications to site personnel;
- decontamination of personnel and equipment, including those evacuated from the site, as appropriate;
- determination of the contaminated area surrounding the affected facility; and
- area or site evacuation planning.

7.2.3.2 Facilities

7.2.3.2.1 General Purpose Facilities. General purpose facilities shall maintain an emergency response capability that enables them to implement appropriate protective actions when ordered and to respond to standard facility emergencies (e.g., fires).

These capabilities shall include provisions for:

- facility take cover to include shutdown, when appropriate, of heating, ventilation, and air-conditioning systems;

- facility evacuation including persons with permanent or temporary disabilities and transient personnel (i.e., persons not normally assigned to the facility);
- emergency communications to facility personnel;
- identification of potentially exposed personnel and ensuring they receive appropriate follow-up evaluation;
- predetermined facility evacuation routes, staging areas, and transportation in the event of an area or site evacuation; and
- personnel accountability per subsection 7.2.3.4.

Each employee is responsible for his/her own health and safety and for taking appropriate actions in accordance with emergency signals and/or instructions.

7.2.3.2.2 Low-hazards and Hazardous Facilities. Site contractor emergency procedures for low-hazards and hazardous facilities shall provide for the immediate actions to be taken to prevent or reduce exposures. These procedures, which are implemented by the BED/BW or IC, shall include provisions for:

- facility take cover to include shutdown, when appropriate, of heating, ventilation, and air-conditioning systems;
- facility evacuation including persons with permanent or temporary disabilities and transient personnel (i.e., persons not normally assigned to the facility);
- ensuring that facility emergency response personnel are equipped with adequate dosimetry equipment to allow for the accurate evaluation of their exposures;
- controlling and monitoring radiation and hazardous material exposures to facility emergency personnel as low as reasonably achievable (ALARA);
- emergency communications to facility personnel;
- informing the POC whenever facility take cover or evacuation sirens are activated;
- shutdown of operations or other operating actions;
- identification of essential personnel per subsection 7.2.3.2.4;
- identification of exposed and potentially exposed personnel and ensuring they receive appropriate follow-up evaluation;
- predetermined facility evacuation routes, staging areas, and transportation in the event of an area or site evacuation;
- protective equipment, monitoring, and decontamination capabilities for hazardous materials present at the facility;
- access control; and
- personnel accountability per subsection 7.2.3.4.

Each employee is responsible for his/her own health and safety and for taking appropriate actions in accordance with emergency signals and/or instructions.

7.2.3.2.3 Lockdown. The intent of a lockdown is to enable security forces to better protect special nuclear materials in the event that a security barrier has been compromised. Currently, implementation of a lockdown is only applicable to the 200 Area Interim Storage Area complex. Lockdown does not preclude implementation of protective actions. Protective actions during lockdown activities shall be coordinated between the Shift Operations Manager and security forces. If the take cover alarm sounds during a lockdown, all personnel, including security personnel without proper personal protective equipment, will move to an indoor location and a security perimeter will be established.

7.2.3.2.4 Essential Personnel. Those designated by the facility management or site contractor as the minimum number of personnel who provide necessary services or support to maintain facilities and/or equipment in a safe shutdown or operational mode. Minimum staff as delineated in a facility safety analysis report or authorization basis may be considered essential personnel.

7.2.3.2.5 Long Term/Total Facility Evacuations. Emergencies on the Hanford Site may result in long-term and total evacuation of facilities. Low-hazards and hazardous facilities shall consider preplanning for long-term and total evacuation. If the facility determines that preplanning is necessary, those actions identified shall be integrated into the appropriate facility plans and/or procedures.

7.2.3.3 Remote and Transient Locations. Site contractors shall establish processes to ensure that all employees can receive emergency messages, are accounted for, and are able to take appropriate protective actions in accordance with this plan and site-wide emergency procedures.

Special planning may be needed to meet these requirements for some select types of work, such as:

- workers that are assigned to locations where there are no fixed Hanford Site Emergency Alerting System devices or no nearby buildings that provide adequate take cover protection; or
- workers whose routine work location is transient (varies or changes periodically).

Planning must ensure that workers are aware of the specific process for their work location (i.e., how they would be notified, where they would go and who to report to) and must be maintained to account for changes in work location or other conditions that could affect the ability to take appropriate action. Contractors shall test processes established for remote locations and transient workers.

7.2.3.4 Personnel Accountability. Each facility on the Hanford Site shall provide for an evacuation accountability system commensurate with the hazards associated with the facility. The accountability shall be conducted immediately after emergency evacuation has been completed to ensure that all employees and transient personnel (i.e., persons not normally assigned to the facility) are properly accounted for.

7.2.3.5 Access Control. During an emergency, access will be controlled to impacted areas. Procedures shall be maintained to allow emergency personnel access to controlled areas as necessary. Access to the ICP or event scene requires the approval of the IC. Site contractors shall maintain access control procedures that include logging entries, providing dose assessments, and maintaining exposure records for all emergency workers.

7.2.3.6 Area or Site Take Cover. Emergency procedures/checklists shall be maintained to provide instructions for implementing an area or site take cover. These procedures/checklists shall include, as a minimum, criteria for the implementation, notification, and termination of an area or site take cover. Hanford Patrol shall be responsible for implementing initial take cover protective actions until the Hanford EOC is operational.

7.2.3.7 Area or Site Evacuation. Emergency procedures/checklists shall be maintained by Hanford Patrol and RL/ORP/PNSO to provide instructions for implementing an area or site emergency evacuation. These procedures/checklists shall include, as a minimum, criteria for establishing an evacuation plan, determining the evacuation routes (primary and alternate), notifying facilities, and coordinating and conducting the actual evacuation. Hanford Patrol shall be responsible for implementing initial evacuation protective actions until the Hanford EOC is operational.

Evacuation routes for the Hanford Site are shown in Figure 7-3. Specific routes will be determined at the time of the event based on event magnitude, location, and meteorology. Private and government vehicles are available to provide transportation in the event of an emergency evacuation. Periodic drills and exercises are performed to ensure that an adequate employee-to-vehicle ratio is maintained to provide a timely and safe evacuation of personnel.

7.2.4 Offsite Protective Actions

Initial PARs appropriate for each emergency classification have been predetermined by RL and adjacent counties. These initial, preplanned PARs, as indicated by the event classification and location, shall be included in the initial notification to offsite agencies. The determination for the need for additional PARs shall be based on consequence assessments that indicate when applicable protective action criterion may be exceeded at the Hanford Site boundary. Notifications to the state and the counties adjacent to the site are delineated in subsection 5.1.1.2.1. The notification shall include PARs as appropriate.

Immediate protective actions decisions within the plume exposure pathway are the responsibility of the appropriate county. Protective action decisions by offsite authorities within the plume EPZ may include access control, sheltering, and evacuation.

Protective action decision notification to populations within the plume EPZ is the responsibility of the counties and is primarily provided using the Emergency Alert System (EAS). Benton, Franklin, and Grant County residents within the radiological plume EPZs receive the EAS messages via tone alert radios in their homes. Persons on or along the Columbia River are alerted by sirens or boat patrols. County emergency plans and procedures address protective action decisions, public warning, evacuation routes, and assistance centers.

Protective action decisions for the ingestion exposure EPZ are the responsibility of the state. The Hanford EOC shall provide the states with hazards assessment data necessary to identify areas where persons must be relocated or where food control is necessary. The states will coordinate implementation of the protective action with the impacted counties.

Notification to populations with the ingestion EPZ shall be accomplished by affected counties and the states using the EAS, as appropriate, and news media reports. State and county emergency workers shall follow protective guidance as established by the states.

7.2.5 Protective Equipment and Supplies

Protective responses for minimizing radiological exposure and contamination include the use of protective clothing and respiratory equipment. As applicable, each site contractor shall develop procedures to identify the location, issuance and use of emergency equipment.

Additionally, HPMC shall be responsible for obtaining and approving the use of a thyroid blocking agent, such as potassium iodide, which may be used by Hanford emergency workers in the event of a release of radioiodine from Energy Northwest's Columbia Generating Station. Each site employer shall determine their need for the use of a thyroid blocking agent and, as applicable in coordination with the Site Medical Director, develop procedures for acquiring and administration of the agent during Energy Northwest events involving the need for radioiodine protection.

7.3 REENTRY

Reentry (also referred to as entry into the hot zone) is the act of reentering a facility or affected area that has been evacuated or closed to personnel access during the course of an emergency for the purpose of performing emergency activities or assessing facility damage to determine if the emergency can be terminated, and/or for determining the extent of required recovery activities. Reentry can be performed at any time before termination of the emergency and during recovery activities.

Prior to event termination, the IC shall be responsible for determining appropriate protective measures for personnel reentering the event facility or area and for authorizing entry into the hot zone to perform time-urgent actions including rescue or evacuation of personnel remaining in the incident scene hazard area and mitigation activities to protect life, environment, and property. For actions that are not time-urgent and in situations where additional facility-specific expertise is needed, the IC should confer with the BED, if available, prior to entry into the hot zone.

Reentry planning shall include contingency planning to ensure the safety of reentry personnel, such as planning for the rescue of reentry teams. All individuals involved in reentry shall receive a hazards/safety briefing prior to emergency response activities consistent with Federal, state, and local laws or regulations.

The event contractor will determine the accessibility of the site areas during and after the emergency and evaluate the advisability of reentry operations as required. Current operating records and other essential information for evaluating the emergency may be used in making these decisions.

During recovery, the Onsite Recovery Director is responsible for reentry authorization.

7.3.1 Reentry Exposure Consideration

The means shall exist for estimating exposure to hazardous materials (radiological and nonradiological) and for protecting workers and the general public from exposure during reentry and recovery activities.

The guiding principle is to minimize the risk of injury to those persons participating in the rescue and recovery activities; however, this principle must be balanced against the immediate objective of retrieving a deceased victim, protecting property, saving lives, or mitigating a secondary event.

Individuals responsible for authorizing reentry must carefully examine any proposed actions involving further hazardous or radioactive material exposure by weighing the risks of exposure, actual or potential, against its benefits. Exposure probability, the biological consequences related to dose, and the number of people exposed are the essential elements to be evaluated in making a risk determination.

Emergency situations involving the saving of lives require separate criteria than those actions required to retrieve deceased victims or to save property. The limits for radiation exposure for reentry activities shall be in accordance with contractor-specific radiological protection program documentation, which is based on 10 CFR 835.1301 requirements.

An individual whose occupational dose has exceeded the numerical value of any of the limits specified in contractor-specific radiological protection program documentation as a result of an authorized emergency exposure may be permitted to return to work in radiological areas during the current year providing that requirements of 10 CFR 835.1301 are met.

Limits for nonradiological hazardous materials will be established using the lowest limits of:

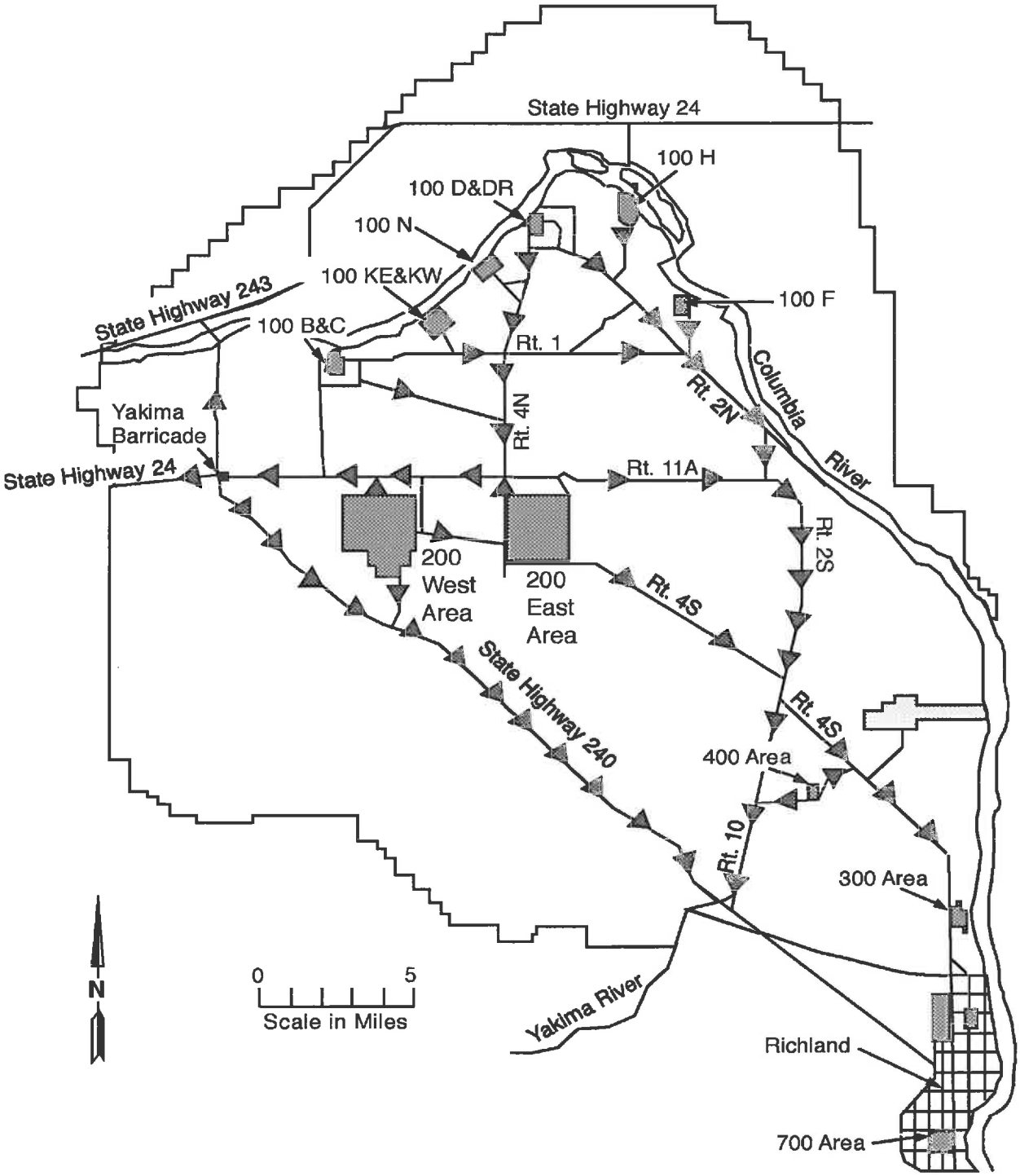
- OSHA permissible exposure limits;
- American Conference of Governmental Industrial Hygienists Threshold Limit Values; and
- specific Washington State Department of Labor and Industries permissible exposure limits mandated by RL/ORP/PNSO (e.g., asbestos).

7.3.2 Termination of Protective Actions

The relaxation or lifting of protective actions generally shall be based on facility conditions and consequence assessments. The Policy Team will decide when onsite protective actions can be modified, after consultation with the SMT. The Policy Team will provide recommendations to affected counties and states for the relaxation of offsite emergency protective actions (i.e., evacuation or sheltering within the plume EPZ). The states shall be responsible for decisions on relaxation of ingestion protective actions, based on data provided by the UDAC.

Figure 7-3

Hanford Site Evacuation Routes[1]



H97030245.30R4

[1] Permit requirement: Figure 7-3, Class 1 Modification 9/30/00

8.0 EMERGENCY MEDICAL SUPPORT

RL/ORP/PNSO shall ensure that provisions exist on the Hanford Site for emergency medical aid, triage, and decontamination, and the planning for mass casualty situations. Because of the potential for injuries to be accompanied by radiological contamination, medical support shall include documented arrangements with offsite medical facilities to accept and treat contaminated, injured personnel for emergency medical services not provided on the site. A synopsis of the MOUs with offsite medical facilities can be found in Table 3-1 of this plan.

8.1 EMERGENCY MEDICAL RESPONSIBILITIES

Medical treatment and preparation for mass casualty situations shall be planned in advance in accordance with DOE O 440.1A (or replacement directive), to include workers contaminated by hazardous material. Hanford Site organizations are authorized by RL/ORP/PNSO to provide the medical response to onsite emergencies. Their roles and responsibilities are outlined in the following subsections. Specific procedures related to each major organization involved in site emergencies are located within documentation maintained by the respective organization.

A Hanford Site medical emergency is defined as any medical incident that results in the activation of the 911 emergency response system.

A mass casualty incident is defined as a medical incident that at first overwhelms the ability of the responders and/or medical care facilities to initially provide normal levels of care to injured victims.

Sharing patient information between onsite and offsite health care providers during emergencies shall be consistent with the requirements of the Health Insurance Portability and Accountability Act of 1996 and applicable MOUs.

8.1.1 Hanford Fire Department

The Hanford Fire Department, which includes emergency medical technicians and paramedics, is the lead agency for responding to medical emergencies. In this capacity, the Hanford Fire Department is responsible for:

- operating according to the Mid-Columbia Emergency Medical Services and Trauma Council and their medical program director;
- meeting requirements including, but not limited to:
  - patient care;
  - triage at the site;
  - ambulance transport of injured or ill employees to medical facilities and, if available, arranging for air transport directly from the site in extreme medical situations; and
  - notification and activation of mutual aid assistance that may be needed during the emergency
- implementing the Hanford Incident Command System to manage and control major medical incidents;

- requesting assistance from HPMC when additional medical support is needed; and
- coordinating a temporary morgue for Hanford fatalities.

8.1.2 HPM Corporation Occupational Medical Services

The primary role of HPMC during onsite medical emergencies is to provide support to the IC as requested. In this capacity, HPMC is responsible for:

- providing medical support, treatment, and facilities (e.g., physicians, physician assistants, occupational health nurses, behavioral health clinicians, and other related medical support staff) for emergencies in support to the IC;
- providing support for the medical treatment of employees who have received internal or external contamination from radioactive, chemical, or biologic exposures;
- maintaining an appropriate supply of pharmaceuticals for use in Hanford emergencies;
- coordinating the site medical activities with the medical program director of Mid-Columbia Emergency Medical Services and Trauma, local hospitals, and other medical organizations as appropriate; and
- managing and providing staffing for the Health Care Centers.

8.1.3 Hanford Patrol

The Patrol Operations Center operates the site 911 emergency response system. As part of the medical response, the POC is responsible for:

- contacting the Hanford Fire Department when a request for fire and/or emergency medical services has been received;
- contacting the HPMC on-call provider for medical incidents involving radiological or chemical exposures; and
- providing information regarding onsite medical emergencies to appropriate contractor organizations.

8.1.4 Hanford Internal and External Dosimetry and Whole Body Counting Programs

During medical emergencies that involve internal or external radionuclide contamination, these programs provide support (e.g., *in vivo* radio assays, bioassay program, exposure evaluators) to HPMC and other medical personnel to help determine the appropriate medical treatment.

8.1.5 Other Hanford Site Contractors

Site contractor health physics and radiation protection technologists and/or industrial hygienists provide decontamination for injuries, as appropriate. Hanford Site contractors also provide support for transportation, security, notifications, communications, etc., as described in respective subsections of section 2.0.

8.1.6 Local Hospitals

Through memorandums of understanding with RL, Kadlec Medical Center in Richland, Kennewick General Hospital, and Lourdes Medical Center in Pasco provide emergency health care for patients delivered by the Hanford Fire Department.

This care includes:

- accepting patients transported by Hanford Fire Department as the result of Hanford emergencies;
- assuming responsibility for patient care once patient arrives at the hospital; and
- coordinating with Mid-Columbia Emergency Medical Services, Tri-City Trauma Services, and other agencies for support and air transport as needed.

A copy of each MOU is provided in Appendix B.

8.2 MEDICAL EMERGENCY FACILITIES AND EQUIPMENT

8.2.1 Health Care Centers

The Health Care Centers are located in Richland and in the 200 West Area. HPMC operates the Health Care Centers to provide initial medical care to patients with occupational injuries or illnesses that do not require hospitalization. The Health Care Centers are staffed by occupational health nurses, physicians, physician assistants, and medical technologists. Initial medical care for minor medical emergencies may be provided at these centers before transport to a local hospital.

8.2.2 Site Decontamination Equipment

Decontamination equipment is available at a number of locations on the Hanford Site. Equipment or facilities range from eye washes, showers, and skin decontamination kits, to a mobile hazardous materials decontamination unit operated by the Hanford Fire Department.

8.2.3 Medical Emergency Equipment

Equipment for cardiopulmonary resuscitation, cardiac defibrillation, and advanced cardiac life support; supplies and equipment for the management of trauma; and equipment to support rescue and/or extrication of casualties are maintained by the Hanford Fire Department. Supplies for triage are available on board each Hanford Fire Department ambulance.

8.2.4 Medical Emergency Transportation

Ambulances shall be maintained and operated by the Hanford Fire Department. Provisions shall be made for air transportation of contaminated patients to medical facilities for specialized medical treatment. Transportation support beyond that provided by the Hanford Fire Department shall be coordinated according to mutual aid and trauma service agreements.

8.2.5 Offsite Medical Facilities

The three local hospitals, Kadlec Medical Center in Richland, Kennewick General Hospital, and Lourdes Medical Center in Pasco, provide treatment for emergency patients from the Hanford Site; however, because of proximity, Kadlec Medical Center is the facility most often used by the site. These hospitals have combined to provide Level Three trauma care for the community.

Memorandums of understanding with each hospital are maintained by RL. A copy of each MOU is contained in Appendix B. Other offsite medical facilities may be involved in Hanford medical emergencies through agreements with the local hospitals.

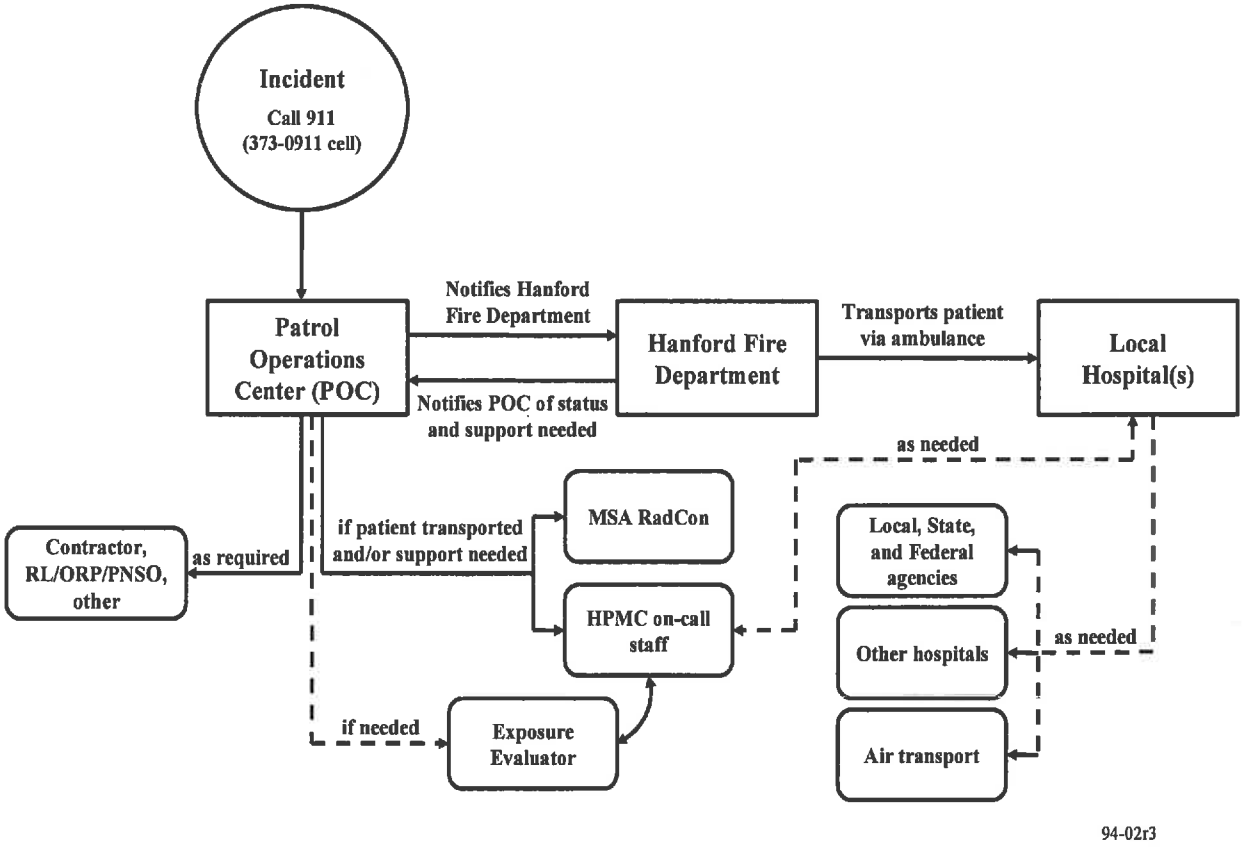
RL shall ensure the provision of training and exercise support related to the services provided to the site. HPMC shall provide medical expertise on radiological and chemical exposure decontamination and treatment, as requested.

8.3 MEDICAL EMERGENCY COMMUNICATIONS

The communications process during a Hanford medical emergency is illustrated in Figure 8-1.

Figure 8-1

Medical Emergency Response Communications



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9.0 EMERGENCY TERMINATION AND RECOVERY

Predetermined criteria for termination of emergencies, assignment and make-up of a recovery organization, and site recovery plan development shall be maintained in DOE-0223, *Emergency Plan Implementing Procedures*. Recovery shall include notifications associated with termination of an emergency and establishment of criteria for resumption of normal operations.

9.1 TERMINATION OF THE EMERGENCY

In general, response activities are terminated when the situation has been stabilized. At this point, potential threats to workers, the public, and the environment have been characterized, conditions no longer meet established emergency categorization criteria, and it appears unlikely that conditions will deteriorate. Once the emergency has been declared terminated, activities may then focus on recovery.

It is the function of the BED/BW/IC to declare the termination of an event after applicable criterion has been met where the Hanford EOC has not been activated.

In an event where the Hanford EOC has been activated, the BED, IC, and Site Emergency Director must confer and agree that termination can be declared and communicate the information to the Emergency Manager.

Termination shall be coordinated with offsite agencies responsible for offsite emergency response and notification. The Emergency Manager will coordinate the termination recommendation with the state and county representatives and make the official emergency termination declaration. The Policy Team will proceed with official notification to offsite emergency agencies that the emergency is terminated and the recovery phase has been initiated. Notification will be done through the Hanford EOC emergency communications network. The criteria for the termination decision and the basis for relaxing applicable offsite PARs will be included in the notification as appropriate. Termination information will also be provided to the media and public.

9.2 RECOVERY PLANNING

Prior to termination of the emergency event, a recovery organization shall be formed and a recovery plan developed, if determined necessary, in accordance with established procedure. The recovery organization shall develop and implement plans necessary to return the affected facility and surrounding areas to normal. Restart of operations is performed in accordance with the approved plans. RL/ORP/PNSO shall direct recovery planning for Hanford Site facilities and support the offsite recovery efforts of Federal, state, and local agencies.

For recovery from events that require implementation of the Hanford ICS but not activation of the Hanford EOC, a recovery organization shall be assembled commensurate with the activities necessary to resume facility operations.

For recovery from events where the Hanford EOC has been activated, recovery planning shall include dissemination of information to offsite agencies regarding the emergency and possible relaxation of public protective actions; planning for decontamination actions; establishment of a recovery organization; development of reporting requirements; and establishment of criteria for resumption of normal operations.

Depending on the event contractor, RL/ORP/PNSO shall determine the type of accident investigation necessary and ensure that actions are performed in accordance with DOE O 225.1B, *Accident Investigations* (DOE 2011). In addition, RL/ORP/PNSO with assistance from the event contractor, shall provide for investigation of emergency root cause(s) and corrective action(s) to prevent recurrence in accordance with DOE requirements.

9.2.1 Planning and Operations for Onsite Recovery

For events where the Hanford EOC has been activated, the Emergency Manager shall determine the extent of recovery planning needed. If there was no measurable release of radiological or nonradiological hazardous materials to the environment, no effects to the offsite or to other onsite facilities, and the facility can be returned to pre-emergency conditions by using normal facility work processes, a formal site recovery plan is not necessary.

If a recovery plan is deemed necessary, the Emergency Manager shall designate a Recovery Manager who is responsible for assessing the extent of recovery actions necessary and determining the organization needed to implement recovery operations, and an Onsite Recovery Director who is responsible for appointing members of the Onsite Recovery Team and developing the Site Recovery Plan.

Detailed procedures for recovery planning are contained in DOE-0223, *Emergency Plan Implementing Procedures*.

9.2.2 Planning and Operations for Offsite Recovery

The states of Washington and Oregon are responsible for determining when the relaxation of protective measures can begin, and will make offsite reentry and recovery decisions. The states shall coordinate recovery activities with the affected counties, who will coordinate local public health actions and disaster assistance. Recovery actions also will be coordinated with RL/ORP/PNSO.

The major areas of effort for offsite recovery include:

- maintenance of access and traffic control of contaminated areas until cleanup is accomplished;
- imposition of control measures on possibly contaminated food and dairy products until radioactivity or chemical contaminant levels are deemed acceptable or the products are decontaminated or destroyed;
- dissemination of public health advice for individuals with noncommercial sources of food and dairy products;
- direction of decontamination activities, by way of natural radioactive decay, contamination removal, burial, treatment, or dilution;
- determination of radioactivity or chemical contaminant levels by field and laboratory analysis;
- documentation of population doses, individual doses, and environmental radioactivity or chemical contaminant levels; and
- dissemination of public information.

RL/ORP/PNSO shall provide representatives to state recovery task forces, as requested.

9.2.3 Incompatible Waste[1]

After an event, the BED/BW and/or Onsite Recovery Director and staff shall provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility. The BED/BW and/or Onsite Recovery Director and staff shall further ensure that no waste that might be incompatible with the released material is treated, stored, and/or disposed of until cleanup is completed.

Cleanup activities shall be performed by trained site personnel. In order to meet 29 CFR 1910.120(q)(11) criteria, such personnel shall have completed the training requirements of 29 CFR 1910.38(a), 29 CFR 1910.134, 29 CFR 1910.1200, and other appropriate safety and health training made necessary by the tasks that they are expected to perform (e.g., personnel protective equipment, decontamination procedures). In addition, all equipment to be used in the performance of the clean-up work shall be in serviceable condition and shall have been inspected prior to use.

Activities may include, but are not limited to:

- neutralization of corrosive spills;
- chemical treatment of reactive materials to reduce hazards;
- overpacking or transfer of contents from leaking containers;
- use of sorbents to contain and/or absorb leaking liquids for containerization and disposal;
- decontamination of solid surfaces impacted by released material, e.g., intact containers, equipment, floors, containment systems, etc.;
- disposal of contaminated porous materials that cannot be decontaminated and any contaminated soil;
- containerization and sampling of recovered materials for classification and determination of proper disposal technique; and
- follow up sampling of decontaminated surfaces to determine adequacy of cleanup techniques as appropriate.

Waste from cleanup activities shall be designated and managed as newly generated waste. A field check for compatibility before storage shall be performed, as necessary, to ensure that incompatible wastes are not placed in the same container and containers of waste are placed in storage areas appropriate for their compatibility class.

If it is determined that incompatibility of waste was a factor in the incident, the BED/BW and/or Onsite Recovery Director and staff ensures that the cause is corrected. Examples would be modification of an incompatibility chart or increased scrutiny of waste from a generating unit when incorrectly designated waste caused or contributed to an incident.

[1] Permit requirement: Subsection 9.2.3, Class 1 Modification 6/30/01

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10.0 PUBLIC INFORMATION

Public information is an integral part of the emergency management program at the Hanford Site. Accurate, candid, and timely information consistent with requirements of the Freedom of Information Act and the Privacy Act shall be provided to site workers and the public before, during, and after emergencies to establish facts and avoid speculation. RL/ORP/PNSO shall coordinate interagency and public information activities at the regional level and coordinate directly with DOE-HQ.

RL/ORP/PNSO and state and local governments share the responsibility to provide this information. RL/ORP/PNSO shall develop a public information program, including methods and procedures, to provide for the:

- education of the public and employees on what to do in the event of an emergency;
- dissemination of accurate, timely information during an emergency; and
- dissemination of information to help the public and employees recover after an emergency.

Coordination with offsite agencies that have the responsibility to provide emergency warning, instructions, and information to the public is vital to the success of the public information program. The RL communications organization shall have the lead in coordinating the public information program with offsite agencies. Interfaces and assistance provided to offsite agencies related to public information shall be documented in MOUs. Applicable MOUs are contained in Appendix B.

10.1 EMERGENCY PUBLIC INFORMATION PROGRAM

RL/ORP/PNSO and site contractor personnel shall cooperatively ensure that an adequate emergency public information program is established, staffed, and maintained, commensurate with site hazards, to ensure that information can be provided to the public and media during an emergency.

Adherence to emergency public information policies and requirements shall be demonstrated during exercises, appraisals/evaluations, and approved training programs.

10.2 EMERGENCY PUBLIC INFORMATION ORGANIZATION

The emergency public information organization shall be made up of RL/ORP/PNSO and site contractor personnel working under the direction of the Public Information Director or designee. Personnel assignments shall correspond as closely as possible to normal duties. Two components within the Hanford EOC have responsibilities for emergency public information: the Policy Team and the JIC.

Emergency public information support to offsite responses under the RAP is addressed in DOE/RL-92-49, *U.S. Department of Energy Radiological Assistance Program Response Plan Region 8*.

10.2.1 Policy Team

The Policy Team has overall responsibility for emergency public information. The Public Information Director provides direction to the JIC and reports to the Emergency Manager.

Communications with the JIC are available via telephone, computer, and facsimile equipment. Cable television service is available in the Hanford EOC for viewing local and national news reports.

10.2.1.1 Responsibilities. The Public Information Director (or designee) is responsible for:

- timely and accurate release of information to the public and media;
- advising the Emergency Manager on actions and responses that will reduce public uncertainty;
- approving the release of emergency information;
- informing DOE-HQ of emergency public information actions; and
- protecting the organization's image/credibility as they relate to emergency responses, control, and recovery.

The Web Page Coordinator is responsible for developing event information.

10.2.2 Joint Information Center

Public information activities at the Hanford Site are coordinated with offsite agencies through a JIC. The Hanford JIC is a dedicated facility located in Richland, Washington. Access to this area is controlled. The JIC may also use other portions of the building to conduct news conferences and media interviews.

Personnel shall be assigned to provide support in media services, public and media inquiry, JIC management and administrative activities, and media monitoring. Persons with facility-specific technical expertise related to the emergency shall be assigned to participate in the JIC emergency public information activities, as appropriate, and be given a protocol briefing prior to news conferences.

10.2.2.1 Information Release. Information is released in a variety of ways from a number of official sources. The emergency public information program at the Hanford Site is designed with the JIC as the single point from which emergency information is released. This allows the Hanford Site and offsite agencies to coordinate the accurate and timely release of public information.

RL shall encourage the participation of impacted offsite agencies in the JIC. In addition to RL/ORP/PNSO and Hanford Site contractors, the states of Washington and Oregon, and the counties within the plume EPZs of the Hanford Site have included this participation in their emergency plans. The JIC is the primary source of information to the public on the event, corrective actions, and potential ramifications. Additionally, local authorities utilize the JIC as their means to provide information to the media and the public. State agencies may release information directly from the state emergency center; however, coordination through the JIC is recommended.

The information release functions of the JIC include:

- coordination of emergency information with affected agencies;
- conducting news conferences;
- rumor control;
- response to telephone inquiries from the public and media; and
- information to employees.

Information is reviewed prior to issuance to ensure that no classified or unclassified controlled information is contained in the release. In situations involving classified or unclassified controlled information, the JIC will provide sufficient unclassified information to explain the emergency response and protective actions required for the health and safety of workers and the public.

10.2.2.1.1 Emergency Information. The JIC will provide emergency information to the media, appropriate offsite agencies, and DOE-HQ.

Initial emergency information or public statements shall be approved by the Public Information Director. Subsequent updates shall be coordinated with DOE-HQ.

Each offsite agency shall develop and approve its own emergency information. However, proposed information should be shared with agencies to ensure accuracy and consistency of information being released.

10.2.2.1.2 News Conferences. News conferences are conducted from the JIC with spokespersons from local, state, and affected Federal agencies, and the Hanford Site. Conferences will be conducted, as the situation warrants, to provide an opportunity for the media to ask questions of responding agencies.

10.2.2.1.3 Rumor Control. Rumors may be identified by any member of the onsite or offsite emergency response organization. Within the JIC, the telephone teams and the media monitor are the primary identifiers of rumors. Any misinformation identified will be corrected as soon as possible through emergency web page updates, news releases, news conferences, and the telephone teams.

10.2.2.1.4 Telephone Teams. Telephone teams, staffed by site personnel, will answer questions from the public and media. Telephone teams will make use of emergency web page updates, news releases, emergency broadcast messages, fact sheets, and contacts with agency JIC representatives to provide information necessary to respond to inquiries.

10.2.2.1.5 Media Tours. Media tours of the affected area may be provided, if appropriate.

10.2.2.1.6 Information to Hanford Site Personnel. Information regarding work schedules, route closures, and other critical information is provided to site personnel via the Hanford Site Emergency Alerting System. Information to off-duty personnel is provided through the media.

10.2.2.2 Staffing and Responsibilities. JIC staffing shall be outlined in JIC procedures and shall provide functions to include:

- the timely release of accurate and understandable information to the public and media, and for responses to public inquiries;
- conducting news conferences with participation from Hanford Site personnel and appropriate offsite agencies;
- reviewing television broadcasts and news websites for inaccuracies;
- identifying and correcting rumors and inaccuracies;
- producing event information, media advisories, and fact sheets;
- relaying press announcements to the media, providing updates to the media not present at the JIC, and providing responses to incoming media phone queries;

- ensuring the review of information drafted for the media or the public for technical accuracy, security sensitivities, or classified information; and
- transmitting priority employee messages and safety information to employees.

In addition to the JIC Manager and site contractor communications staff, the JIC Decision Team is composed of Public Information Officers from Benton, Franklin, and/or Grant Counties, the states of Washington and Oregon, and involved Federal agencies. The basic function of the team is to jointly coordinate releases of information to the media and to provide accurate and timely information to the public regarding operations in their jurisdictions.

10.3 PUBLIC EDUCATION

RL shall assist the jurisdictions within Hanford Site EPZs in the development and implementation of programs to educate their residents on the actions to take in the event of an emergency at the Hanford Site.

RL shall participate, as requested, in public meetings sponsored by state, tribal, or local emergency management officials to make the public aware of DOE activities in the region, the potential risk from these activities, and the Hanford Site emergency preparedness program.

RL shall, as appropriate, provide information to the public and the media for major exercises in order to educate the local community on Hanford Site activities to test the emergency preparedness program. This information will be coordinated with local emergency management officials.

10.3.1 Plume Emergency Planning Zone Public Education

The state of Washington and Benton, Franklin, and Grant Counties have instituted a public education program to ensure that the members of the public within a plume EPZ of the Hanford Site are aware of the proper actions to take following notification of an emergency. The counties' programs have been identified in their respective emergency plans. These plans, developed cooperatively with RL and Energy Northwest, include:

- annual distribution of an emergency information calendar for residents within the plume EPZs;
- distribution of a brochure for farmers and growers;
- distribution of information for special audiences, such as boaters and Spanish-speaking residents;
- periodic public meetings; and
- annual surveys to determine the effectiveness of these programs.

Information provided to residents includes:

- a description of the hazards;
- how they will be notified;
- protective actions they may be asked to take (i.e., sheltering or evacuation);
- evacuation routes and where to go if they are asked to evacuate;
- special provisions for schools or other special facilities; and

- how those with special needs can get help.

10.3.2 Ingestion Emergency Planning Zone Public Education

The states of Washington and Oregon, affected tribal organizations, and counties are responsible to provide education to residents within the ingestion EPZ. Information may include:

- a description of the potential impact of an emergency on residents and the agriculture community;
- preventive measures to help avoid or reduce the impact if a release occurs; and
- actions to take during and after a release.

Information may be provided through the dissemination of printed materials to target audiences, conducting public meetings and providing information to the media.

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11.0 EMERGENCY FACILITIES AND EQUIPMENT

The provision of facilities and equipment adequate to support emergency response, including the capability to notify employees of an emergency to facilitate the safe evacuation of employees from the work place, immediate work area, or both shall be addressed. Facility-specific equipment may be listed in respective building emergency plans and/or procedures.

11.1 EMERGENCY FACILITIES

This section contains a description of facilities that have been equipped for emergency control, operations, and coordination. The functions, staffing, and activation criteria of the Hanford EOC are described in the various subsections of section 2.0.

11.1.1 Hanford Emergency Operations Center

The Hanford EOC is located in Richland, Washington. The Hanford EOC location provides favorable proximity to the emergency management and response staff, the DOE-HQ Emergency Communications Network, and to additional office space.

Additionally, the Hanford EOC is outside of Hanford Site facility plume EPZs thus ensuring a high probability of the Hanford EOC being habitable following an emergency on the Hanford Site. An emergency power generator is available to supply power to essential emergency equipment in the event of loss of normal power.

Primary and backup means of communication are available and capable of operating with other DOE elements and with other Federal, tribal, state, and local response organizations as applicable.

An alternate Hanford EOC has been established in the event the Hanford EOC becomes uninhabitable for any reason.

11.1.2 Hanford Patrol Operations Center

The POC monitors the emergency response (911 and 373-0911 for cellular phones) and business (373-3800) numbers, and acts as the single point-of-contact for the Hanford Site.

The POC notifies and/or dispatches the:

- Hanford Fire Department, including ambulance and the Hazardous Material Response Team;
- Hanford Patrol;
- HPMC on-call provider;
- Transportation on-call representative;
- EDO; and
- Benton County Sheriff personnel assigned to Hanford Site.

The POC also is responsible for:

- alarm monitoring;

- activation of designated Hanford Site Emergency Alerting System components to initiate onsite protective actions; and
- assisting in dispatch and radio communications for emergency responders.

11.1.3 Hanford Emergency Operations Center Shift Office

The Hanford EOC Shift Office is a 24-hour operational facility equipped to communicate information regarding occurrences at or affecting the Hanford Site to site contractor personnel and to state and local emergency management organizations.

Specific responsibilities of the Hanford EOC Shift Office include:

- activating designated Hanford Site Emergency Alerting System components to initiate onsite protective actions and activate the Hanford EOC; and
- providing notifications to the DOE-HQ EOC and state and local emergency management agencies.

Hanford EOC Shift Office notification responsibilities are covered further in applicable subsections of section 5.0. Specific operational desk instructions shall be maintained by the Hanford EOC Shift Office.

11.1.4 Medical Emergency Facilities

Capabilities for medical aid, triage, and personnel decontamination shall be available onsite. Emergency Medical Support is described further in section 8.0.

Medical emergency facilities include the following.

- Health Care Centers: Health Care Centers are located in Richland and in the 200 West Area. Health Care Centers provide initial medical care to patients with occupational injuries or illnesses that do not require hospitalization. Ambulance service is provided by the Hanford Fire Department.
- Site Decontamination Facilities: Personnel decontamination sites are located in several locations in the 100, 200, and 300 Areas.

Agreements shall be in place between RL and local hospitals for backup medical treatment. A copy of each MOU is contained in Appendix B.

11.1.5 State and County Emergency Centers

The Benton County Emergency Center is located in Richland, Washington.

The Franklin County Emergency Center is located in Pasco, Washington.

The Grant County Emergency Center is located in Moses Lake, Washington.

The Washington State Emergency Center is located at Camp Murray in Tacoma, Washington.

The Oregon Department of Energy Emergency Center is located in Salem, Oregon.

11.2 EMERGENCY EQUIPMENT[1]

Adequate personal protective equipment and other equipment and supplies (e.g., detectors, decontamination equipment) shall be available and operable to meet emergency preparedness requirements and the needs determined by the results of the EPHA, if required, and for emergency response personnel to carry out their respective duties and responsibilities.

Emergency and backup equipment (including monitoring devices) shall be located in readily accessible areas away from the scene of the potential accident. Equipment shall be available, as appropriate, to provide functions for the potential, credible emergencies such as:

- emergency dosimetry;
- personnel protection;
- radiation control monitoring instrumentation;
- monitoring of personnel, facilities, and the environment onsite and offsite;
- emergency medical treatment onsite;
- meteorological evaluation;
- handling of personnel contaminated with radioactive or toxic materials, and fatalities;
- supplying emergency power, water, and sanitation;
- emergency transportation for personnel evacuation;
- movement of earth or heavy loads; and
- emergency communications, including portable and secure communications equipment, as required.

To ensure equipment reliability, emergency equipment should, to the extent practical, be the same equipment used for routine operations. RL/ORP/PNSO and the site contractors maintain a variety of light and heavy equipment and supplies that could be diverted from routine use to emergency use, if needed.

All equipment that could be used in an emergency response is listed in site contractor property system databases, which can be quickly accessed to determine the current status of each piece of equipment.

As applicable, the BED/BW/IC and/or the Onsite Recovery Director and staff shall ensure that all equipment is cleaned and fit for its intended use before operations are resumed. This may include actions to ensure that depleted stocks of neutralizing and absorbing materials are replenished, self-contained breathing apparatus are cleaned and refilled, fire extinguishers are recharged or replaced, and protective clothing is cleaned (or disposed of) and restocked.

11.2.1 Assessment Equipment

Emergency equipment shall be available, as appropriate, to allow an early and reliable determination of the seriousness of an accident. The equipment for both emergency and continuing assessment of the facilities and environment at the Hanford Site consists of dosimeters, criticality detectors and alarms, and effluent and environmental monitoring equipment.

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[1] Permit requirement:Subsection 11.2, Class 1 Modification 12/31/08

Aerial surveillance and monitoring, performed by the Aerial Measuring System (DOE Nevada Operations Office), may be requested as a DOE emergency response asset.

11.2.1.1 Nuclear Accident Dosimeter. The Hanford Site nuclear accident dosimeter is a stationary device that provides neutron and gamma dose information following a criticality or high-level radiation event. The dosimeter satisfies the requirements for an emergency dosimetry system by providing a system capable of determining the:

- neutron dose (in rads);
- photon dose in the presence of neutrons (from 10 to 10,000 rads); and
- neutron flux in each of five energy intervals, which permits calculation of the neutron dose equivalent in rem.

Instructions for recovery of these dosimeters are contained in site contractor procedures.

11.2.1.2 Emergency Instrumentation. Under emergency conditions, many needed supplies and equipment would be drawn from the instrument and equipment pool used for normal operations at the Hanford Site. This ensures that multiple sources of supplies are available and that the equipment is calibrated, maintained, and ready for use by personnel involved in controlling the emergency.

11.2.2 Fire Control Equipment

Buildings are equipped with fire control equipment, such as automatic fire-suppression (sprinkler) systems and portable fire extinguishers, in accordance with National Fire Protection Association (NFPA) codes and standards. The fire protection equipment is inspected, tested, and maintained in accordance with NFPA codes and standards.

11.2.3 Personal Protective Equipment

Buildings shall have safety showers and eyewash stations, located as necessary, in accordance with applicable regulations. Drainage from these stations shall be contained. In addition to these stations, portable eyewash equipment shall be maintained at protective storage areas as necessary. The eyewash and shower stations shall be inspected regularly.

Protective clothing and respiratory protective equipment shall be maintained for use during both routine and emergency operations. Equipment not provided by the Hanford Fire Department shall be identified in low-hazards and hazardous facility documentation (e.g., building emergency plans/procedures).

11.2.4 Spill Control and Contamination Supplies

Spill control and contamination supplies shall be located in facilities as necessary. Supplies may include absorbent materials for organic or inorganic materials; diatomaceous earth for liquid waste spills; neutralizing sorbents for response to acid or caustic spills; containers and salvage containers (e.g., overpacks); and brooms, shovels, and miscellaneous spill response supplies.

11.2.5 Decontamination Operation Equipment

The T Plant Complex, located in the 200 West Area, provides equipment decontamination services for the Hanford Site that is not time urgent.

11.2.6 Evacuation Vehicles

Building management shall ensure that vehicles are available to move all personnel from their facility. This may be accomplished by a combination of government-owned and private vehicles. If insufficient vehicles are available, the BED can coordinate the response of additional transportation assets through the Hanford EOC.

11.2.7 Hanford Patrol

Hanford Patrol maintains a large inventory of security response equipment, including transportation, weaponry, protective equipment, and communication.

11.2.8 Hanford Fire Department[2]

The Hanford Fire Department maintains a large inventory of firefighting, hazardous material response, and rescue equipment. The Hanford Fire Department also operates the site ambulance service from the various area fire stations. Mutual aid agreements with local fire departments provide additional backup capabilities.

11.3 MAINTENANCE AND TESTING OF ALARM AND COMMUNICATION SYSTEMS

Building management shall ensure that preventive maintenance is performed on facility emergency sirens and criticality alarm systems by the responsible maintenance organizations in accordance with the established preventive maintenance procedures. The site contractor responsible for the Hanford Site Emergency Alerting System and river sirens shall ensure that preventive maintenance is performed in accordance with DOE-0223, *Emergency Plan Implementing Procedures*.

Testing of facility emergency siren and criticality alarm systems, area sirens, the Hanford Site Emergency Alerting System, and river sirens shall be performed in accordance with DOE-0223, *Emergency Plan Implementing Procedures*, to ensure operability.

As applicable, the organization(s) responsible for communications with DOE-HQ and offsite agencies shall test communications systems at least annually or as often as needed to ensure that communication systems are operational.

11.4 INVENTORY OF EMERGENCY EQUIPMENT

Emergency equipment shall be inventoried in accordance with site contractor inventory control procedures to ensure availability in the event of an emergency.

[2] Permit requirement:Subsection 11.2.8, Class 1 Modification 6/30/10

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12.0 TRAINING AND DRILLS

In addition to training that site personnel receive on their day-to-day functions, a comprehensive, coordinated, and documented program of training and drills for developing and/or maintaining specific emergency response capabilities shall be an integral part of the Hanford Site emergency management program. The program shall apply to emergency response personnel and organizations that are expected to respond to onsite emergencies. Training and drills are part of the DOE O 151.1C Operational Emergency Base and Operational Emergency Hazardous Material Programs.

12.1 GENERAL TRAINING REQUIREMENTS

12.1.1 General Employee Training

Initial training and periodic drills shall be provided to all workers who may be required to take protective actions (e.g., assembly, evacuation) when they are employed, when their expected actions change, or when the facility-specific emergency plan/procedure changes. This may be provided through general employee training and participation in drills or exercises.

Refresher training shall be provided annually to Hanford Site employees who are likely to witness a hazardous material release and who are required to notify proper authorities of the release.

In addition, site personnel are provided information on the specific emergency response documentation for their facility. Information is also provided to each employee, which describes the emergency signals, basic instructions, and the emergency response structure. By telephone, site personnel can hear a recording of the emergency signals. Drills and exercises provide additional training for site personnel on the specific actions of their building.

12.2 HANFORD EMERGENCY RESPONSE ORGANIZATION TRAINING REQUIREMENTS

A formal training program shall be provided for the instruction of all personnel (i.e., primary and alternate) comprising the Hanford Site ERO to include both initial training and annual refresher training. Training shall include the requisite National Incident Management System training, as deemed required by position.

Training programs should be systematic and performance based (i.e., based on the analysis of tasks to be performed during an emergency) and developed using performance objectives that place emphasis on team training and facility-specific emergency response scenarios. Training requirements for each ERO position should be identified in a formal training program description or plan. Training methods should include a mix of classroom instruction/training, tabletop exercises or walk-throughs, and drills.

Annual refresher training should include lessons learned from past drills and exercises, changes to plans and procedures, and lessons learned from actual events at DOE and other industrial facilities. Training on changes may need to occur prior to scheduled refresher training to ensure safe and effective response.

12.2.1 Hanford Emergency Operations Center Staff Training

Site personnel assigned to the Hanford EOC shall receive training prior to assignment to an activation list and at least annually thereafter. If requested, offsite personnel with designated positions in the Hanford EOC receive initial orientation training.

12.2.2 Incident Command Organization Training

Personnel working in assigned roles of the Incident Command Organization shall, as applicable, receive incident command and task-specific training or an overview prior to assignment and at least annually thereafter. The training or overview shall include roles, responsibilities, and authorities for the respective position within the Incident Command Organization.

Personnel directing or supervising response actions must be trained for all tasks they assign to be performed and have the same level of qualification for emergency response as the personnel being directed.

12.2.2.1 Facility/Building Emergency Response Organization Training. Minimum training requirements for standard facility/building ERO positions (including designated supplementary personnel) for general purpose, low hazards and hazardous facilities are listed in Table 12-1. Each site contractor shall evaluate, as applicable, the need for additional training, and the training level requirements commensurate with the hazards for each emergency response duty.

12.2.2.2 Site Contractor Emergency Response Personnel Training. Site contractor emergency response personnel requiring certification/qualification are identified as 911 dispatchers, ICs, firefighters performing defensive or offensive operations in the incident scene hazard area, and/or emergency medical personnel. These personnel shall obtain and maintain such certification/qualification.

12.2.2.3 Other Emergency Response Support Personnel Training. Skilled support personnel and specialist employees are not designated members of the Hanford ERO and, as such, are not required to meet specific Hanford ERO training requirements. However, other safety measures or training are required, as delineated in the following subsections, to ensure that such personnel are protected against hazards that may be present at the event scene.

12.2.2.3.1 Skilled Support Personnel. Site support personnel who are skilled in the operation of certain equipment, such as mechanized earth moving or digging equipment or crane and hoisting equipment, and who are needed temporarily to perform immediate emergency support work that will or may expose them to hazards at the event scene shall be given an initial briefing prior to their participation in any emergency response. The initial briefing shall include instruction in the wearing of appropriate personal protective equipment, what hazards are involved, and what duties are to be performed. All other appropriate safety and health precautions shall be used to assure the safety and health of these personnel. This training meets the requirements of 29 CFR 1910.120(q)(4).

12.2.2.3.2 Specialist Personnel. Personnel who, in the course of their regular job duties, work with and are trained in the hazards of specific hazardous (radiological and nonradiological) substances and who will be called upon to provide technical advice or assistance to the IC shall receive training or demonstrate competency in the area of their specialization annually. This training meets the requirements of 29 CFR 1910.120(q)(5).

Table 12-1

Facility/Building Emergency Response Organization Training Requirements

GENERAL PURPOSE FACILITY ERO	
Position	**Required Training**
BED/BW	HAMMER/Hanford training: • General purpose facility[1] OR Contractor developed facility-specific training to address: • An overview of Hanford ICS[1] AND Contractor developed facility-specific training to address: • BED/BW responsibilities[1] • Facility emergency procedures, as applicable[1] • Emergency checklist duties (identified in DOE-0223)[1]
Staging Area Manager Personnel Accountability Aide (or other contractor title for personnel performing the same or similar function)	Contractor developed facility-specific training to include: • Staging Area Manager/Personnel Accountability Aide orientation[1]

[1]Before assignment and annually thereafter

Table 12-1

Facility/Building Emergency Response Organization Training Requirements (cont.)

LOW-HAZARDS FACILITY ERO	
Position	**Required Training**
BED/BW	HAMMER/Hanford training: • Low-hazards facility[1] OR Contractor developed facility-specific training to address: • An overview of Hanford ICS[1] AND Contractor developed facility-specific training to address: • BED/BW responsibilities[1] • Hazard communications and waste management[1] • Facility emergency procedures, Health and Safety Plans, as applicable[1] • Emergency checklist duties (identified in DOE-0223)[1]
Staging Area Manager Personnel Accountability Aide (or other contractor title for personnel performing the same or similar function)	Contractor developed facility-specific training to include: • Staging Area Manager/Personnel Accountability Aide responsibilities[1]

[1]Before assignment and annually thereafter

Table 12-1

Facility/Building Emergency Response Organization Training Requirements (cont.)

HAZARDOUS FACILITY ERO	
Position	**Required Training**
BED	HAMMER/Hanford training: • BED[1] • Hanford ICS[1] Contractor developed facility-specific training to address: • Hazard communication and waste management[1] • Safety Basis, EPHAs, building emergency plans, etc.[1] • Facility emergency procedures (EALs, emergency response procedures, etc.), as applicable)[1] • Emergency checklist duties (identified in DOE-0223) [1] • Demonstrate proficiency in evaluated drill or exercise[1]
Facility Operations Specialist	HAMMER/Hanford training: • Hanford ICS[1] Contractor developed facility-specific training to include: • Hazard communication and waste management[1] • Building emergency plans[1] • Facility emergency procedures (emergency response procedures, etc.), as applicable [1] • Emergency checklist duties (identified in DOE-0223)[1] • Demonstrate proficiency in evaluated drill or exercise[2]
ICP Communicator ICP Hazards Communicator Hazard Assessor (chemical/radiological)	HAMMER/Hanford training: • Hanford ICS[1] Contractor developed facility-specific training to include: • Hazard communication and waste management[1] • Facility emergency procedures (emergency response procedures, etc.), as applicable [1] • Emergency checklist duties (identified in DOE-0223)[1] • Demonstrate proficiency in evaluated drill or exercise[2]

Table 12-1

Facility/Building Emergency Response Organization Training Requirements (cont.)

HAZARDOUS FACILITY ERO (cont.)	
Position	**Required Training**
Staging Area Manager	HAMMER/Hanford training: • Hanford ICS[1] Contractor developed facility-specific training to include: • Hazard communication and waste management[1] • Facility emergency procedures (emergency response procedures, etc.), as applicable[1] • Emergency checklist duties (identified in DOE-0223) [1]
Personnel Accountability Aide (or other contractor title for personnel performing the same or similar function)	Contractor developed facility-specific training to include: • Personnel Accountability Aide responsibilities[1]
Supplementary ERO personnel (facility personnel that do not have emergency checklist duties identified in DOE-0223 but are assigned to support the facility ERO during event response)	HAMMER/Hanford training: • Hanford ICS[1] OR Contractor developed facility-specific training to include: • An overview of Hanford ICS (e.g., Hanford ICS template or equivalent)[1]

[1]Before assignment and annually thereafter
[2]Annually

12.3 TRAINING PROGRAM EVALUATION

Emergency preparedness training programs shall include evaluation methods to ensure that all emergency response personnel are trained in the program elements pertinent to their position and are able to respond effectively in an emergency.

The effectiveness of the emergency preparedness training program shall be evaluated during the conduct of drills and exercises. Performance shall be documented as part of the drill and exercise critiques and will be used for program improvements.

The programs shall also contain self-assessment activities that analyze overall training program effectiveness. Results of self-assessment activities will be utilized to upgrade and improve the emergency preparedness training program.

12.4 RECORD KEEPING

The emergency preparedness training programs for the Hanford Site will include a consistent, auditable method for maintaining training records. The system will include a means for tracking attendance and for reminding employees when refresher training is needed.

The system should be incorporated into site contractor/site central training record organizations when possible.

12.5 VISITOR ORIENTATION

Visitors such as vendors, subcontractors, consultants, and regulatory agency personnel that are issued a Hanford-specific badge will receive orientation information regarding safety, security, and emergency preparedness requirements prior to entering the Hanford Site. The host for visitors from other DOE sites or Federal agencies possessing a government-issued personal identity verification credential is responsible for escorting the visitors or providing the orientation information.

12.6 OFFSITE TRAINING SUPPORT

No offsite training support has been identified to substitute for existing emergency preparedness training courses. However, emergency response personnel may participate in training opportunities offered by other field elements or offsite agencies that may benefit the emergency response organization.

12.7 OFFSITE PERSONNEL TRAINING

Emergency-related information, transportation information, and training on site-specific conditions and hazards shall be made available to offsite personnel who may be required to participate in response to an emergency at the Hanford Site. The training will be provided in support of, and in conjunction with, the counties, tribes, and states at their request.

Offsite agencies that participate in the Hanford EOC are given the opportunity to participate in training and drills related to their respective functions.

Area hospitals and local ambulance providers receive training on the handling and care of radiologically contaminated patients from Energy Northwest and county emergency management organizations.

12.8 INSTRUCTOR TRAINING AND QUALIFICATION

The emergency preparedness training programs shall identify and document course instructor qualifications. Instructor qualification criteria shall be in accordance with contractor procedures where applicable. Emergency preparedness program managers have the responsibility for qualification of instructors for each course offered. The qualification process shall identify required experience and/or academic requirements for instructors.

12.9 DRILLS

Drills shall be conducted as necessary to ensure that Hanford Site personnel are knowledgeable of response to alarms (e.g., fire, evacuation, take cover, etc.).

Additionally, drills shall provide supervised, "hands-on" training and application sessions for members of the facility/building ERO. These sessions provide an opportunity to demonstrate and maintain individual and organizational proficiency. Drills should be of sufficient scope and frequency to ensure an adequately staffed and trained facility/building ERO. At a minimum, facility/building ERO members shall participate in a drill or exercise at least annually as defined in contractor-specific procedures or other documentation. In order to ensure response proficiency is maintained, drills will be assessed and/or graded to identify and document training needs and areas of less than adequate performance.

12.9.1 Drill Definitions

There are five types of drills conducted at the Hanford Site – protective action, functional, operational, emergency preparedness, and no-notice.

12.9.1.1 Protective Action Drill. Protective action drills focus on employee safety to ensure that facility personnel are knowledgeable of response to alarms, including take cover or an evacuation to a staging area. Examples of such drills include plume release, fire, and bomb threat. Protective action drills may be combined with operational or emergency preparedness drills, or with area-wide take cover or evacuation drills for facilities located on the Hanford Site.

12.9.1.2 Functional Drill. Functional drills involve a specific function of the emergency response organization not normally associated with a specific facility. Examples of a functional drill include field team dispatch and control, Columbia River alerting, Hanford EOC, Hanford EOC Shift Office staff, POC staff, Emergency Duty Officers, and Hanford Fire Department responders.

12.9.1.3 Operational Drill. Operational drills focus on an event that can be mitigated through the use of facility response procedures and allows for the demonstration of nonemergency notifications. Operational drills may also include the use of the appropriate *Emergency Plan Implementing Procedures* (DOE-0223) or other contractor-specific emergency management documentation and may be performed using a tabletop format. The drills should be performed at the direction of the facility/building manager and documented to include concerns or demonstrated lack of knowledge regarding action(s) taken. Examples of operational drills include alarm response, contamination spread, and other applicable operating functions. Operational drills may be evaluated during operational readiness reviews, readiness assessments, conduct of operation assessments, and assessments performed for compliance with DOE O 426.2, *Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities* (if included in contractor contract).

12.9.1.4 Emergency Preparedness Drill. Emergency preparedness drills involve designated facility emergency response personnel and the Hanford Incident Command System. Such drills could include tabletop drills, ICP limited drills, walk-through training drills (controller interaction with players as coaches or instructors), and evaluated drills (no controller interaction with players for coaching or instruction). The type of drill to be conducted shall be clearly communicated to all participants, observers, and evaluators.

Emergency preparedness drills require the use of the appropriate *Emergency Plan Implementing Procedures* (DOE-0223) or other contractor-specific emergency management documentation and, at a minimum, should demonstrate:

- implementation and coordination of facility and/or area (i.e., 100 Area, 200 Area, 300 Area, etc.) protective actions such as take cover or evacuation;
- event recognition and categorization/classification (hazardous facilities only);

- event mitigation;
- emergency and environmental notifications and communications; and
- interface with other Incident Command Organization functions and other affected facilities.

12.9.1.5 No-Notice Drill. No-notice drills are conducted without prior notification to the participants to evaluate response. No-notice drills require implementation of adequate drill controls such as precautions, limitations, simulations, and trained controllers staged at appropriate locations when necessary.

12.9.2 Drill Development and Conduct

Minimum drill requirements are delineated in the following subsections. Additional criteria may be contained in contractor-specific documentation.

12.9.2.1 General Purpose Facilities. Protective action drills shall be conducted at general purpose facilities, as applicable, to meet DOE O 151.1C Operational Emergency Base Program requirements. At a minimum, contractors with such facilities shall conduct building evacuation drills (e.g., fire drill), consistent with Federal regulations (e.g., 41 CFR 102-74-360), local ordinances, or National Fire Protection Association Standards. Drills shall be conducted at least annually to ensure that personnel are able to safely evacuate their work area. In addition, general purpose facility personnel located on the Hanford Site and within a plume exposure EPZ shall participate in a take cover or evacuation drill each calendar year to ensure that facility personnel are knowledgeable of response to alarms. Each contractor is responsible for ensuring that drills are conducted and documented for their respective facilities as applicable.

12.9.2.2 Low-hazards Facilities. Protective action, operational, and emergency preparedness drills shall be conducted at low-hazards facilities, as applicable, to meet DOE O 151.1C Operational Emergency Base Program requirements. Contractors with such facilities shall ensure that personnel are knowledgeable of response to facility-specific alarms and establish a drill program to ensure adequate training and proficiency for all emergency response personnel. Each contractor is responsible for ensuring that drills are conducted and documented for their respective facilities, as applicable.

Drills should be designed to demonstrate proficiency for as many of the following items, as appropriate, for the facility being drilled:

- initial event discovery and notification;
- response to fire and medical emergencies;
- response to spills and releases of hazardous materials including the detection and monitoring of such releases;
- protective actions (including take cover or evacuation);
- activation of the initial ICP;
- personnel accountability;
- event assessment to determine RCRA contingency plan implementation and notification; and
- personnel decontamination.

NOTE: Low-hazards facilities operating under the governing requirements of 29 CFR 1910.38 (i.e., those facilities where personnel evacuate from the danger area when an emergency occurs and are not permitted to assist in handling the emergency) need only meet the annual protective action drill requirement as identified in subsection 12.9.2.1 of this plan.

12.9.2.3 Hazardous Facilities. Protective action, operational, and emergency preparedness drills shall be conducted at hazardous facilities, as applicable, to meet DOE O 151.1C Operational Emergency Hazardous Material Program requirements. Contractors with such facilities shall ensure that facility personnel are knowledgeable of required responses to facility-specific alarms and establish a drill program to ensure adequate training and proficiency for all facility emergency response personnel.

A graded approach to the number, type, and extent of facility emergency preparedness and functional drills shall be based on the hazards present in the facility or those to which the functional organization would be expected to respond. Each contractor required to conduct drills shall develop an annual drill schedule.

Drills should be designed to demonstrate proficiency for as many of the following items, as appropriate, for the facility being drilled:

- initial event discovery and notification;
- response to fire and medical emergencies;
- response to spills and releases of hazardous materials including the detection and monitoring of such releases;
- protective actions (including take cover or evacuation);
- activation of the initial ICP;
- event classification and notification;
- event assessment to determine RCRA contingency plan implementation and notification;
- personnel accountability;
- personnel decontamination; and
- event termination including reentry and recovery.

Each contractor shall identify an emergency preparedness coordinator who is responsible for the design and execution of the facility/contractor emergency preparedness drill program. The responsibilities of the emergency preparedness coordinator include, but are not limited to:

- ensuring the adequacy of the drill package, including the scenario;
- selecting the drill control organization;
- assigning a grade to the drill and issuing the drill report; and
- entering findings into the appropriate commitment tracking system.

The emergency preparedness coordinator should serve as the lead controller for emergency preparedness drills whenever possible.

Emergency preparedness drills shall be conducted by a qualified, trained, and experienced control organization. Each contractor shall identify an adequate number of drill coordinators who have successfully completed drill coordinator training or demonstrated equivalent training or experience. Additionally, drill controllers shall be qualified to control areas of performance assigned; and for emergency preparedness and functional drills shall have attended drill controller/evaluator training. Site contractors, however, may authorize equivalent training.

Emergency preparedness and functional drill packages contain, as a minimum:

- drill scope, objectives, and limitations;
- scenario and timeline;
- technical data (e.g., realistic plant conditions, proper source terms, etc.); and
- evaluation criteria.

An evaluated emergency preparedness drill that consists of a drill package identified above, a list of participants, and a facility-level evaluation and critique (drill report) meets the DOE O 151.1C annual facility exercise requirement (see subsection 13.1 of this plan).

Operational and/or emergency preparedness drills shall be conducted with a frequency sufficient to provide proficiency and complete confidence in response capability. Personnel assigned emergency duties should participate in drills covering emergency events or hazardous conditions in their respective facility (e.g., fire, injury, spill, radiological release, loss of power, or loss of ventilation). Where proficiency is not achieved, more than one drill per event or hazardous condition should be considered.

Evacuation drills shall be conducted at least annually for hazardous facilities having a criticality event potential to maintain familiarity with emergency procedures.

12.9.3 Drill Scheduling and Coordination

Drills that require support or resources outside of the facility or project, including the POC, Hanford EOC Shift Office, Hanford Fire Department, Hanford Patrol, Hanford EOC, Hanford Site Emergency Alerting System activation, or MSA drill team, shall be coordinated though the MSA Emergency Management Program. In addition, drills that require Hanford Fire Department and/or Hanford Patrol resources to enter radiological or other areas that require exit controls (i.e., monitoring, sign in/out, etc.) that could delay Hanford Fire Department and/or Hanford Patrol response shall be submitted to Hanford Fire Department and/or Hanford Patrol management for review and written approval prior to conducting the drill.

No-notice drills require coordination with the MSA Emergency Management Program to ensure that appropriate controls are in place to prevent safety, security, or operations-related issues from arising during the conduct of the drill, and to ensure that players fully understand the extent of play required.

12.9.4 Emergency Preparedness and Functional Drill Evaluation

For evaluated emergency preparedness and functional drills, each drill objective and the overall drill shall be graded. The evaluation process and definition of each grade shall be delineated in contractor-specific procedures or other documentation.

A participant critique (debrief or hot wash) shall be conducted as soon as possible following the drill to provide preliminary feedback on objectives and to allow participants to conduct a self-assessment. Areas of inadequate response or improvement should also be addressed.

The emergency preparedness coordinator is responsible for the drill and will receive the report from the lead controller. For evaluated emergency preparedness drills conducted to meet the DOE O 151.1C annual facility exercise requirement, the final drill report shall be submitted to RL SES and the respective DOE Emergency Preparedness office, as applicable.

13.0 EXERCISES

Exercises provide the opportunity for participants to demonstrate their proficiency in assigned emergency response duties, and are used to determine or validate the adequacy of emergency procedures, facilities, equipment, training, and personnel response. As such, each element of the Hanford Site ERO shall participate in a drill or exercise at least annually.

13.1 EXERCISE PROGRAM

The Hanford Site Emergency Exercise Program organization shall establish and maintain a formal exercise program to validate all elements of the Hanford Site emergency management program over a five-year period. Each exercise shall have specific objectives and shall be fully documented (e.g., by scenario packages that include objectives, scope, timelines, injects, controller instructions, and evaluation criteria).

Exercises shall be evaluated as applicable and a critique process, which includes gathering and documenting observations of the participants, shall be established. Corrective action items that are identified as a result of the critique process shall be incorporated into the Hanford Site emergency management program.

The Hanford Site Emergency Exercise Program organization shall exercise the emergency preparedness response capability of selected hazardous facilities annually as designated in the exercise schedule.

NOTE: Hazardous facilities (or groups of hazardous facilities with a common facility-level ERO) that are not selected in the annual site exercise schedule shall exercise its emergency response capability annually and include at least facility-level evaluation and critique. An evaluated emergency preparedness drill, as delineated in subsection 12.9.2.3 of this plan, meets the DOE O 151.1C annual facility exercise requirement.

Evaluations of annual facility exercises or evaluated emergency preparedness drills by DOE entities (e.g., RL/ORP/PNSO or DOE-HQ organizations) shall be performed periodically so that each facility has external DOE evaluation at least every three years.

Site contractors with hazardous facilities or that have organizations and functions that respond to events shall:

- comply with annual exercise schedule issued by RL Security and Emergency Services (SES);
- support development, conduct, and evaluation of exercises at their facility or involving their functional areas;
- provide members to participate in the scenario development process when their facility or function is involved;
- provide controllers and or evaluators for conduct and evaluation of exercises; and
- require participation by their appropriate staff in exercise and associated training.

The Hanford EOC elements and resources shall participate in one evaluated exercise annually as designated in the exercise schedule. This exercise shall be designed to test and demonstrate the site's integrated emergency response capability. The basis for the exercises shall be rotated among hazardous facilities.

Adherence to Operational Emergency notification and reporting requirements shall be demonstrated in all emergency management exercises.

13.2 EXERCISE DEFINITIONS

There are two types of exercises conducted at the Hanford Site – limited and field. Each exercise is defined in the following subsections.

13.2.1 Limited Exercise

A limited exercise tests and validates the responsibilities of the Incident Command Organization (event scene response), and allows POC, Hanford EOC Shift Office, and Hanford EOC staff to practice their assigned emergency response duties. As such, only the Incident Command Organization is evaluated. There is no offsite involvement.

Communication links, at a minimum, should include the:

- POC;
- Hanford EOC Shift Office;
- IC to the Site Emergency Director;
- ICP Communicator to Event Scene Liaison; and
- ICP Hazards Communicator to the UDAC Hazards Communicator.

The Hanford Site shall conduct three limited exercises per year, unless otherwise directed by RL.

13.2.2 Field Exercise

A field exercise tests and validates the responsibilities of all aspects of the Hanford Site ERO, which includes the Incident Command Organization, Hanford EOC, POC, and the Hanford EOC Shift Office. Offsite involvement may include DOE-HQ, state and county emergency centers, and supporting staff such as radiological field teams. The Hanford Site shall conduct one field exercise per year, unless otherwise directed by RL.

A tabletop or dress rehearsal exercise may be conducted prior to the field exercise. A tabletop exercise allows the Hanford Site ERO and designated offsite responders to work through a scenario in one room, under tabletop conditions, to demonstrate how each facet of a major response organization contributes to an emergency response. A dress rehearsal provides an opportunity for the Hanford Site ERO to work together as a team. No evaluation is conducted for the tabletop or rehearsal exercise.

13.3 EXERCISE DEVELOPMENT AND CONDUCT

Exercises shall be of sufficient scope and frequency to ensure the development and maintenance of an adequate response capability.

The Hanford Site Emergency Exercise Program organization shall be responsible for:

- developing and maintaining procedures to implement the requirements of the exercise program;
- developing, maintaining, and communicating a five-year and annual schedule of exercises;
- developing and maintaining an exercise objectives matrix that identifies the elements to be tested during the conduct of exercises and determining appropriate objectives based on approved procedures to be tested and verified; and
- providing controller/evaluator training to ensure trained controllers/evaluators are available for exercises.

Exercises that require Hanford Fire Department and/or Hanford Patrol resources to enter radiological or other areas that require exit controls (i.e., monitoring, sign in/out, etc.) that could delay Hanford Fire Department and/or Hanford Patrol response shall be submitted to Hanford Fire Department and/or Hanford Patrol management for review and written approval prior to conducting the exercise.

Proposed goals and objectives shall be provided to RL SES for review prior to each exercise. A scenario shall be developed to ensure that events occur to address the objectives. A draft exercise package shall be submitted to RL SES for review, comment, and approval. The package shall be supported by documentation that contains, but is not limited to, the exercise scope, its objectives and corresponding evaluation criteria, a narrative description of the scenario, timeline, and a list of participants. For field exercises, the approved exercise package is submitted to the Program Secretarial Officer and the DOE-HQ Office of Emergency Operations director for information, preferably 30 days prior to conduct of the field exercise.

Exercise package records shall be maintained in accordance with the DOE Records Schedules and the General Record Schedules published by the National Archives and Records Administration.

13.4 EXERCISE EVALUATION AND CORRECTIVE ACTION

The Hanford Site Emergency Exercise Program organization shall ensure that an evaluation is conducted for each exercise. Exercise evaluations shall be based on specific standards and criteria issued by DOE-HQ.

Exercise evaluation reports must be completed within 30 working days and submitted to RL SES. Evaluation reports for field exercises shall also be submitted to the Program Secretarial Officer, and the DOE-HQ Office of Emergency Operations director.

Corrective action plans for limited and field exercises shall be completed within 30 working days of receipt of the final evaluation report.

Completion of exercise corrective actions shall include a verification and validation process, independent of those who performed the corrective actions, that verifies that the corrective action has been put in place and that validates that the corrective action has been effective in resolving the original finding. Corrective actions involving revision of procedures or training should be completed before the next exercise.

A system to formally track exercise deficiencies and weaknesses to completion shall be maintained. Improvement items will be provided to the appropriate organization for implementation as required. A system to provide trending and lessons learned shall also be maintained for exercises.

Quarterly reports shall be provided to RL SES on the status of all formally tracked corrective actions.

13.5 OFFSITE COORDINATION

Offsite agencies, including DOE-HQ, state, local, and appropriate Federal organizations, shall be invited to participate in the annual field exercises (and preparatory tabletop exercise, if conducted). Participation by offsite agencies is dependent upon the scenario and the agencies desired level of participation.

Coordination of offsite participation shall be accomplished through a Scenario Review Group (SRG), which shall meet periodically prior to an exercise to develop the exercise scenario package. Exercise needs of offsite agencies shall be discussed with the SRG and included in the scenario, to the extent possible, without compromising the onsite exercise requirements.

13.6 NO-NOTICE EXERCISES

The Hanford Site shall participate in a program of no-notice exercises, conducted at the discretion of the DOE-HQ Office of Emergency Operations, to determine if the Hanford Emergency Response Organization accomplishes selected objectives based on applicable plans, procedures, and/or other established requirements. Involvement is limited to providing trusted agents and responding when the exercise is conducted, unless otherwise specified by DOE-HQ Office of Emergency Operations.

14.0 PROGRAM ADMINISTRATION

The basic purpose of program administration is to establish and maintain effective organizational management and control of the emergency management program. While ORP/PNSO and its contractors participate in an integrated Hanford Site emergency management program, RL retains the primary responsibility to oversee, coordinate, and assess the emergency management programs of the Hanford Site contractors. RL will ensure the preparation and maintenance of plans and procedures necessary for RL/ORP/PNSO to carry out its responsibilities during an emergency and will schedule through ORP/PNSO any activities (i.e., drills, exercises, assessments) of ORP/PNSO contractors.

14.1 EMERGENCY MANAGEMENT PROGRAM ADMINISTRATOR

The RL Manager has the responsibility for administering the overall Hanford Site emergency management program and has delegated the authority to develop, implement, and maintain the emergency management program to the RL SES director. The RL Emergency Preparedness Program Manager of RL SES carries out these responsibilities. Key program decisions and/or policy changes will be coordinated with ORP/PNSO prior to implementation. The ORP/PNSO Managers have the responsibility for administering their respective field office emergency management program and for participating in the Hanford Site emergency management program.

Each site contractor shall designate an individual to implement site- and contractor-level emergency management program requirements. This individual shall also assist, as necessary, in the development and maintenance of this plan and applicable implementing procedures; development of Emergency Readiness Assurance Plans (ERAP) and annual updates; development and conduct of training and exercise programs; coordination of assessment activities; development of related documentation; and coordination of emergency resources.

14.1.1 Emergency Management Functions at the Richland Operations Office/Office of River Protection/Pacific Northwest Site Office

The RL/ORP/PNSO Emergency Preparedness staff functions, as appropriate to the responsibilities described above, related to overseeing site contractor emergency preparedness programs include:

- ensuring that EPHAs and hazards surveys are adequately performed and documented;
- reviewing and recommending approval of the respective ERAPs, and submitting the ERAP to the respective Program Secretarial Officer and the DOE-HQ Office of Emergency Operations director for inclusion in the annual report;
- assessing facility emergency preparedness programs to verify compliance with appropriate Federal and state directives and policy;
- submitting DOE Order requirement exemption requests, as necessary, for approval by the respective Program Secretarial Officer and Office of Emergency Operations director;
- reviewing exercise packages and exercise evaluation reports for their respective field office; and
- reviewing written reports of evaluations of declared events.

RL Emergency Preparedness Program Manager functions to ensure that RL/ORP/PNSO can carry out its responsibilities in an emergency include:

- assigning a senior emergency preparedness representative to the Emergency Management Advisory Committee;
- revising and updating this plan and the *Emergency Plan Implementing Procedures* (DOE-0223) in accordance with the current version of DOE O 151.1 and other appropriate Federal and state regulations, and ensuring integration within the overall emergency management program;
- implementing and maintaining the Hanford Site emergency exercise program, approving site exercise packages prior to the exercise, and issuing exercise evaluation reports;
- interfacing with Federal, tribal, state, and local emergency management organizations;
- maintaining and negotiating agreements with state and county response agencies, Federal assistance agencies, and maintaining agreements with medical and fire support agencies;
- providing training to state and local emergency response personnel, as requested;
- recruiting and training staff for the Hanford EOC; and
- maintaining the Hanford EOC facility and equipment.

14.2 EMERGENCY READINESS ASSURANCE PROGRAM

The emergency readiness assurance program shall establish a framework and associated mechanisms for assuring that emergency plans, implementing procedures, and resources are adequate by ensuring that they are sufficiently maintained, exercised, and evaluated (including assessment and appraisal) and that appropriate and timely improvements are made in response to needs identified through coordinated and comprehensive emergency planning, training and drills, exercises, and evaluations. The emergency readiness assurance program shall consist of evaluations, improvements, and ERAPs.

14.2.1 Evaluations

Evaluations identify findings in emergency management programs and/or provide assurance that emergency capabilities are sufficient to implement emergency plans. Readiness assurance evaluation activities include program and exercise evaluations, tracking performance indicators, and no-notice exercises.

14.2.1.1 Program Evaluations. Contractors shall conduct an annual self-assessment of their emergency management programs.

RL shall assess the Hanford Site emergency management program annually. In addition, RL/ORP/PNSO shall evaluate the emergency management program of each site contractor under its supervision at least once every three years. RL/ORP/PNSO shall notify the Program Secretarial Officer of its evaluation schedule.

Program evaluations (including appraisals and assessments) shall be based on specific standards and criteria issued by the DOE-HQ Office of Emergency Operations. Program evaluation results shall be documented in the ERAP.

14.2.1.2 Exercise Evaluations. Exercise evaluation requirements are delineated in section 13.4 of this plan.

14.2.1.3 Performance Indicators. RL/ORP/PNSO and its contractors shall participate in a program of performance indicators (including performance measures and metrics) to capture and track objective data regarding the performance of emergency management programs in key functional areas. Performance indicator data shall be collected and subsequently included in annual ERAPs.

14.2.1.4 No-Notice Exercises. No-notice exercise requirements are delineated in section 13.6 of this plan.

14.2.2 Improvements

Appropriate and timely improvements are made in response to needs identified through coordinated emergency planning, program assistance activities, evaluations, training, drills, and exercises.

14.2.2.1 Corrective Actions. The following corrective action requirements supplement those in DOE O 414.1A, *Quality Assurance*. Continuous improvement in the emergency management program results from implementation of corrective actions for findings (e.g., deficiencies, weaknesses) in all types of evaluations, including both internal and external evaluations.

Reports of RL/ORP/PNSO evaluations of site contractor emergency management programs shall be submitted to the Program Secretarial Officer and the Office of Emergency Operations director. Evaluation reports must be completed within 30-working days.

Corrective action plans shall be developed within 30-working days of receipt of the final evaluation report. Corrective actions shall be completed as soon as possible. Corrective actions addressing revision of procedures or training of personnel should be completed before the next annual self-assessment of the program.

Completion of corrective actions shall include a verification and validation process, independent of those who performed the corrective action, that verifies that the corrective action has been put in place, and validates that the corrective action has been effective in resolving the original finding.

14.2.2.2 Lessons Learned. RL/ORP/PNSO and site contractor emergency management programs shall include a system for incorporating, tracking, and trending lessons learned from training, drills, exercises, actual responses, and a site-wide lessons learned program. In addition, RL/ORP/PNSO/and site contractors shall participate in the DOE Corporate Lessons Learned Program.

Lessons learned should be used to determine scope, objectives, and frequency of future drills and exercises.

14.2.3 Emergency Readiness Assurance Plans

RL/ORP and their respective site contractor Emergency Preparedness personnel shall participate in the preparation of a consolidated ERAP. As such, individual facility ERAPS are not provided.

The ERAP is a planning tool to identify and develop needed resources and improvements, and to highlight changes and achievements in the emergency management program. In keeping with 31 U.S.C. 1115 and 1116, the ERAP shall identify what the goals were for the fiscal year that ended (e.g., September 30) and the degree to which these goals were accomplished. This ERAP shall also identify the goals for the next fiscal year (e.g., which starts on October 1).

Site contractor Emergency Preparedness personnel shall submit initial or updated emergency planning and preparedness activities information, as indicated above, to RL SES by September 30 each year, or as otherwise directed by RL SES, for review and inclusion in the consolidated ERAP.

The RL Emergency Preparedness Program Manager shall review and finalize the consolidated ERAP for approval by the RL Manager (or designee). Concurrence from ORP shall be obtained prior to approval by the RL Manager. The consolidated ERAP shall be submitted to the Program Secretarial Officer and DOE-HQ Office of Emergency Operations director by November 30 each year.

PNSO and PNNL shall submit information through the DOE Office of Science as directed.

14.3 DOCUMENT CONTROL

This plan and RL/ORP/PNSO and site contractor implementing procedures shall be controlled distribution documents. RL/ORP/PNSO and site contractors shall use a document control system to ensure that controlled copies are up to date and available at locations where they may be needed in an emergency. RL/ORP/PNSO and site contractors shall determine the internal and external controlled copy distribution of the emergency plan and respective implementing procedures.

14.3.1 Review and Update of the Hanford Emergency Management Plan and Richland Operations Office/Office of River Protection/Pacific Northwest Site Office and Site Contractor Implementing Procedures

This plan and DOE-0223, *Emergency Plan Implementing Procedures*, will be reviewed at least annually. Revision of this plan and DOE-0223 may be initiated at any time deemed necessary and shall be concurred upon by RL/ORP/PNSO and site contractors, as applicable. Plan revisions shall be approved by the RL Manager (or designee). A procedure describing the development, revision, review, and approval process is delineated in DOE-0223.

A controlled copy of the approved plan and DOE-0223 (if requested) shall be submitted to the DOE-HQ Office of Emergency Operations and the Program Secretarial Officer.

Site contractor emergency plans (e.g., building emergency plans) and implementing procedures shall be reviewed at least annually.

14.3.1.1 Review and Update Based on WAC 173-303.[1] Portions of this plan, together with Hanford Site location/activity-specific documentation established to meet contingency plan requirements, must be reviewed and immediately amended, if necessary, whenever:

- applicable regulations or the Hanford Facility RCRA Permit are revised;
- this plan or the location/activity-specific building emergency plan/procedure fails in an emergency;
- the Hanford Site facilities/activities change (e.g., design, operation, maintenance, etc.) in a way that materially increases the potential for fires, explosions, or releases of dangerous waste or dangerous waste constituents, or in a way that changes the response necessary in an emergency; or
- the list of emergency equipment changes.

[1] Permit requirement: Subsection 14.3.1.1, Class [1]1 Modification 9/30/00

14.3.2 Review of Agreements

Agreements with local, state, and Federal officials and agencies (as contained in Appendix B) are maintained by RL SES and are reviewed periodically (unless otherwise stated) and revised as needed. Updates may be initiated either by RL or by the agreement official or agency. RL SES shall maintain documentation of the review.

14.3.3 Classified Information

RL/ORP/PNSO and site contractors shall ensure that emergency preparedness documents, such as plans, procedures, scenarios, and assessments, are reviewed, as necessary, for classified and Unclassified Controlled Nuclear Information (UCNI) by an authorized derivative classifier or UCNI reviewing official.

14.3.4 Supporting Documents

RL SES shall maintain copies of documents and records that support the emergency management program (i.e., technical data, hazards assessments, ERAPs, and plans and procedures). Records of training, drills, and exercises shall be maintained to document status of the program and provide direction for improvements.

Hanford Site contractors shall maintain records that will provide documentation of the facility emergency preparedness program and to support the preparation of the ERAP, work plans, etc.

14.3.5 Vital Records

A program shall be established to ensure that emergency documents, regardless of media, essential to continued functioning or reconstruction of an organization during and after an emergency, are identified as vital records and managed per 36 CFR 1223, DOE O 243.2, *Vital Records*, and additional contract-specific documents, if applicable. The vital records program ensures the protection and availability of information critical to effective emergency response management.

RL/ORP/PNSO and site contractors shall review their respective emergency documents identified as vital records at least annually to ensure that the documents are up-to-date and immediately accessible, and to determine necessary additions to or deletions from the vital records list.

The *Emergency Plan Implementing Procedures* (DOE-0223) and contractor EPHAs shall be stored at the Hanford EOC (primary and alternate) in paper form so they can be used without reliance on mechanical equipment. Other emergency operating records designated as vital shall be stored at the Hanford EOC (primary and alternate) in electronic format.

14.3.6 Emergency Records

RL/ORP/PNSO and site contractor emergency procedures that contain information for review and reconstruction of major communications and actions taken during a declared emergency shall be regarded as emergency records. These records include, but are not limited to, logs and documentation produced by the respective emergency response organizations (i.e., Incident Command Organization and the Hanford EOC). RL SES shall maintain emergency records generated during the operation of the Hanford EOC and may also request copies of emergency records generated at other emergency response locations.

In addition, provisions shall be in place for the control, monitoring, and maintenance of permanent records of onsite personnel exposures to internal/external radiological and nonradiological hazardous materials in response to emergency conditions. Exposure records shall be stored in accordance with existing site records retention requirements.

14.3.7 Plan Locations[2]

Copies of this plan are maintained at:

- RL and ORP Emergency Preparedness program offices;
- each contractor Emergency Preparedness office and other locations as specified by the respective contractor;
- Hanford Fire Department (area fire stations);
- Hanford EOC Shift Office;
- Hanford Emergency Operations Center (primary and alternate); and
- the Patrol Operations Center.

Copies of the plan are also maintained at the following offsite agencies (per their request) to meet the WAC 173-303-350(4) requirement:

- Pasco Police Department;
- Adams County Sheriff's Office;
- Pasco Fire Department;
- College Place Fire Department;
- Kadlec Medical Center;
- Lourdes Medical Center;
- Kennewick General Hospital;
- Benton County Emergency Management Center;
- Franklin County Emergency Management Center; and
- Grant County Emergency Management Center.

Copies of location-specific documentation are provided to offsite agencies as requested.

[2] Permit requirement: Subsection 14.3.7, Class 1 Modification 12/31/12

15.0 REFERENCES

Atomic Energy Act of 1954, 42 USC 2011 et seq., Public Law 83-703, as amended.

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

DOE, 2005, *Comprehensive Emergency Management System*, DOE O 151.1C, U.S. Department of Energy, Washington, D.C.

DOE, 2011, *Accident Investigations*, DOE O 225.1B, U.S. Department of Energy, Washington, D.C.

DOE, 2011, *Occurrence Reporting and Processing of Operations Information*, DOE O 232.2, U.S. Department of Energy, Washington, D.C.

DOE, 2010, *Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities*, DOE O 426.2, U.S. Department of Energy, Washington, D.C.

DOE, 2007, *Worker Protection Program for DOE (Including the National Nuclear Security Administration) Federal Employees*, DOE O 440.1B, U.S. Department of Energy, Washington, D.C.

DOE, 2007, *Emergency Management Guide*, U.S. Department of Energy, Washington, D.C.

DOE, 1992a, *U.S. Department of Energy, Richland Operations Office, Emergency Plan Implementing Procedures*, DOE-0223, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL, 2008, *U.S. Department of Energy Radiological Assistance Program Response Plan Region 8*, DOE/RL-92-49, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Emergency Planning and Community Right-to-Know Act of 1986, 42 USC 11001 et seq.

EPA, 1992, *Manual of Protective Action Guides and Protective Actions for Nuclear Incidents*, U.S. Environmental Protection Agency, Washington, D.C.

NFPA 101, *Life Safety Code*, National Fire Protection Association, (latest edition).

NFPA 471, *Recommended Practice for Responding to Hazardous Materials Incidents*, National Fire Protection Association, (latest edition).

NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*, National Fire Protection Association, (latest edition).

NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, National Fire Protection Association, (latest edition).

NFPA 1561, *Standard on Emergency Services Incident Management System*, National Fire Protection Association, (latest edition).

NFPA 1620, *Recommended Practice for Pre-Incident Planning*, National Fire Protection Association, (latest edition).

Oregon State Hanford Emergency Response Program, 1993, Oregon Department of Energy, Salem, Oregon.

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

Superfund Amendment and Reauthorization Act of 1986, 42 USC 11001 et seq.

Washington State Hanford Emergency Response Plan, Washington State Department of Community, Trade, and Economic Development, Olympia, Washington.

10 CFR 835.1301, General Provisions et seq.

10 CFR 851, Worker Safety and Health Program

29 CFR 1910.38, Emergency Action Plans.

29 CFR 1910.120, Hazardous Waste Operations and Emergency Response.

36 CFR 1223, Maintaining Vital Records.

40 CFR 761, Polychlorinated biphenyls (PCB) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions,

49 CFR, Transportation et seq.

WAC 173-303-040, Definitions.

WAC-173-303-090, Dangerous Waste Characteristics.

WAC 173-303-100, Dangerous Waste Criteria.

WAC 173-303-350, Contingency Plan and Emergency Procedures.

WAC 173-303-360, Emergencies.

APPENDIX A

DOCUMENTATION CROSSWALK MATRIX

REQUIREMENT SOURCE	REQUIREMENT DESCRIPTION	HOW IS REQUIREMENT MET?
WAC 173-303-340 Introduction	Preparedness and prevention. Facilities must be designed, constructed, maintained, and operated to minimize the possibility of fire, explosion, or any unplanned sudden or nonsudden release of dangerous waste or dangerous waste constituents to air, soil, or surface or ground water, which could threaten the public health or the environment. This Section describes preparations and preventive measures, which help avoid or mitigate such situations.	The Hanford Site is a singular facility made of individual TSD units.
WAC 173-303-340(1) (Permit requirement)	Required equipment. Required equipment. All facilities must be equipped with the following, unless it can be demonstrated to the department that none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below: (a) An internal communications or alarm system capable of providing immediate emergency instruction to facility personnel; (b) A device, such as a telephone or a hand-held, two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or state or local emergency response teams; (c) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment; and (d) Water at adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers, or water spray systems. All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to assure its proper operation in time of emergency.	Unit level: Equipment is documented in accordance WAC 173-303-350(3)(e) in Parts III, V, and VI of the Hanford Facility Dangerous Waste Permit (WA7890008967).
WAC 173-303-340(2) (Permit requirement)	Access to communications or alarms. Personnel must have immediate access to the signaling devices described in the situations below: (a) Whenever dangerous waste is being poured, mixed, spread, or otherwise handled, all personnel involved must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless such a device is not required in subsection (1) of this Section; (b) If there is ever just one employee on the premises while the facility is operating, he must have immediate access to a device, such as a telephone or a hand-held, two-way radio, capable of summoning external emergency assistance, unless such a device is not required in subsection (1) of this Section.	Site personnel are provided access to signaling devices.
WAC 173-303-340(3) (Permit requirement)	Aisle space. The owner or operator must maintain aisle space to allow the unobstructed movement of personnel. Fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless it can be demonstrated to the department that aisle space is not needed for any of these purposes.	Unit level: Parts III, V, and VI of the Hanford Facility Dangerous Waste Permit (WA7890008967).
WAC 173-303-340(4) (Permit requirement)	Arrangements with local authorities. The owner or operator must attempt to make the following arrangements, as appropriate for the type of waste handled at his facility and the potential need for the services of these organizations, unless the hazards posed by wastes handled at the facility would not require these arrangements: (a) Arrangements to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of dangerous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to roads inside the facility, and possible evacuation routes; (b) Arrangements to familiarize local hospitals with the properties of dangerous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility; (c) Agreements with state emergency response teams, emergency response contractors, and equipment suppliers; and (d) Where more than one party might respond to an emergency, agreements designating primary emergency authority and agreements with any others to provide support to the primary emergency authority.	Site level: DOE/RL-94-02, Sections 3.2.3, 3.3.1, 3.3.2, 3.4, 3.4.1.1, 3.4.1.2, 3.4.1.3, 3.7, and Table 3-1, Memoranda of Understanding.

REQUIREMENT SOURCE	REQUIREMENT DESCRIPTION	HOW IS REQUIREMENT MET?
WAC 173-303-340(5)	Where state or local authorities decline to enter into such agreements, the owner, or operator must document the refusal in the operating record.	Site level: If authorities decline, the documentation will be maintained in the Hanford Facility Operating Record.
WAC 173-303-350(1)	Purpose. The purpose of this Section and WAC 173-303-360 is to lessen the potential impact on the public health and the environment in the event of an emergency circumstance, including a fire, explosion, or unplanned sudden or nonsudden release of dangerous waste or dangerous waste constituents to air, soil, surface water, or ground water by a facility. A contingency plan must be developed to lessen the potential impacts of such emergency circumstances, and the plan must be implemented immediately in such emergency circumstances.	Site level: DOE/RL-94-02 Unit level: Contingency plans for Parts III, V, and VI of the Hanford Facility Dangerous Waste Permit (WA7890008967).
WAC 173-303-350(2)	Each owner or operator must have a contingency plan at his facility. A contingency plan must be developed to lessen the potential impacts of such emergency circumstances, and the plan must be implemented immediately in such emergency circumstances.	Site-level: DOE/RL-94-02 Unit-level: Contingency plans for Parts III, V, and VI of the Hanford Facility Dangerous Waste Permit (WA7890008967).
WAC 173-303-350(3)(a) (Permit requirement)	The contingency plan must contain the following: (a) A description of the actions which facility personnel must take to comply with this Section and WAC 173-303-360;	Site-level: DOE/RL-94-02, Section 1.3.4. Unit-level: Contingency plans for Parts III, V, and VI of the Hanford Facility Dangerous Waste Permit (WA7890008967).
WAC 173-303-350(3)(b) (Permit requirement)	The contingency plan must contain the following: (b) A description of the actions which will be taken in the event that a dangerous waste shipment, which is damaged or otherwise presents a hazard to the public health and the environment, arrives at the facility, and is not acceptable to the owner or operator, but cannot be transported, pursuant to the requirements of WAC 173-303-370(5), Manifest system, reasons for not accepting dangerous waste shipments;	Site-level: DOE/RL-94-02, Section 1.3.4. Unit-level: Contingency plans for Parts III, V, and VI of the Hanford Facility Dangerous Waste Permit (WA7890008967).
WAC 173-303-350(3)(c) (Permit requirement)	The contingency plan must contain the following: (c) A description of the arrangements agreed to by local police departments, fire departments, hospitals, contractors, and state and local emergency response teams to coordinate emergency services as required in WAC 173-303-340(4);	Site-level: DOE/RL-94-02, Sections 3.2.3, 3.3.1, 3.3.2, 3.4, 3.4.1.1, 3.4.1.2, 3.4.1.3, 3.7, and Table 3-1.
WAC 173-303-350(3)(d) (Permit requirement)	The contingency plan must contain the following: (d) A current list of names, addresses, and phone numbers (office and home) of all persons qualified to act as the emergency coordinator required under WAC 173-303-360(1). Where more than one person is listed, one must be named as primary emergency coordinator, and others must be listed in the order in which they will assume responsibility as alternates. For new facilities only, this list may be provided to the department at the time of facility certification (as required by WAC 173-303-810(14)(a)(i)), rather than as part of the permit application;	Site-level: DOE/RL-94-02, Section 2.2, discusses personnel job titles, which will fill duties and responsibilities of the Emergency Coordinator, described in WAC 173-303-360. Unit-level: Contingency plans for Parts III, V, and VI of the Hanford Facility Dangerous Waste Permit (WA7890008967).
WAC 173-303-350(3)(e) (Permit requirement)	The contingency plan must contain the following: (e) A list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems, and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.	Site-level: DOE/RL-94-02, Section 11.2.8.Unit-level: Contingency plans for Parts III, V, and VI of the Hanford Facility Dangerous Waste Permit (WA7890008967).

REQUIREMENT SOURCE	REQUIREMENT DESCRIPTION	HOW IS REQUIREMENT MET?
WAC 173-303-350(3)(f) (Permit requirement)	The contingency plan must contain the following: (f) An evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe the signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes.	Site-level: DOE/RL-94-02, Figure 7-3, and Table 5-1. Unit-level: Contingency plans for Parts III, V, and VI of the Hanford Facility Dangerous Waste Permit (WA7890008967).
WAC 173-303-350(4) (Permit requirement)	Copies of contingency plan. A copy of the contingency plan and all revisions to the plan shall be: (a) Maintained at the facility; and (b) Submitted to all local police departments, fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services.	Site-level: DOE/RL-94-02, Section 14.3.7.
WAC 173-303-350(5) (Permit requirement)	Amendments. The owner or operator shall review and immediately amend the contingency plan, if necessary, whenever: (a) Applicable regulations or the facility permit are revised; (b) The plan fails in an emergency; (c) The facility changes (in its design, construction, operation, maintenance, or other circumstances) in a way that materially increases the potential for fires, explosions, or releases of dangerous waste or dangerous waste constituents, or in a way that changes the response necessary in an emergency; (d) The list of emergency coordinators changes; or (e) The list of emergency equipment changes.	Site-level: DOE/RL-94-02, Section 14.3.1.1.
WAC 173-303-355(1) (Permit requirement)	Owners or operators must coordinate preparedness and prevention planning and contingency planning efforts, conducted under WAC 173-303-340 and -350 with local emergency planning committees established pursuant to Title III of the 1986 Superfund Amendments and Reauthorization Act.	Site-level: DOE/RL-94-02, Sections 3.1, 3.1.1, and 3.4.
WAC 173-303-355(2)	Appropriate and generally accepted computer models should be utilized to determine the impacts of a potential catastrophic air release due to fire, explosion, or other accidental releases of hazardous constituents. Evacuation plans prepared pursuant to WAC 173-303-350(3)(d) must include those effected persons and areas identified through these modeling efforts.	Site-level: DOE/RL-94-02, Sections 2.2.2.3.3, and 1.3.3.2.
WAC 173-303-360(1) (Permit requirement)	Emergency coordinator. At all times, there must be at least one employee either on the facility premises or on call with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, required by WAC 173-303-350(2), all operations and activities at the facility, the location and properties of all wastes handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.	Site-level: DOE/RL-94-02, Section 1.3.4 and 2.2.
WAC 173-303-360(2)(a) (Permit requirement)	Emergency procedures. The following procedures must be implemented in the event of an emergency. (a) Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) must immediately: (i) Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and (ii) Notify appropriate state or local agencies with designated response roles if their help is needed.	Site-level: DOE/RL-94-02, Sections 1.3.4 and 5.2.1.
WAC 173-303-360(2)(b) (Permit requirement)	Emergency procedures. (b) Whenever there is a release, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and areal extent of any released materials.	Site-level: DOE/RL-94-02, Sections 2.2.1.1.2(f) and 2.2.1.1.3(g).
WAC 173-303-360(2)(c) (Permit requirement)	Emergency procedures. (c) Concurrently, the emergency coordinator shall assess possible hazards to human health and the environment (considering direct, indirect, immediate, and long-term effects) that may result from the release, fire, or explosion.	Site-level: DOE/RL-94-02, Section 4.2.

REQUIREMENT SOURCE	REQUIREMENT DESCRIPTION	HOW IS REQUIREMENT MET?
WAC 173-303-360(2)(d) (Permit requirement)	Emergency procedures. (d) If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health or the environment, he must report his findings as follows: (i) If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and (ii) He must immediately notify the department and either the government official designated as the on-scene coordinator, or the National Response Center (using their 24-hour toll free number (800) 424-8802).	Site-level: DOE/RL-94-02, Sections 2.2.1.1.2(a) & (d), 2.2.1.1.3 (a), & (e), 5.1.1, 5.1.1.2, 5.1.2, and 5.1.2.1.
WAC 173-303-360(2)(e) (Permit requirement)	Emergency procedures. (e) His assessment report must include: (i) Name and telephone number of reporter; (ii) Name and address of facility; (iii) Time and type of incident (e.g., release, fire); (iv) Name and quantity of material(s) involved, to the extent known; (v) The extent of injuries, if any; and (vi) The possible hazards to human health or the environment outside the facility.	Site-level: DOE/RL-94-02, Sections 2.2.1.1.2(d), 2.2.1.1.3(e), 5.1.1, 5.1.1.2, and 5.1.2.1.
WAC 173-303-360(2)(f) (Permit requirement)	Emergency procedures. (f) During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other dangerous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting, and containing released waste, and removing or isolating containers.	Site-level: DOE/RL-94-02, Sections 2.2.1.1.2.f and 2.2.1.1.3.g.
WAC 173-303-360(2)(g) (Permit requirement)	Emergency procedures. (g) If the facility stops operations in response to a fire, explosion, or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.	Site-level: DOE/RL-94-02, Sections 2.2.1.1.2.f and 2.2.1.1.3.g.
WAC 173-303-360(2)(h) (Permit requirement)	Emergency procedures. (h) Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.	Site-level: DOE/RL-94-02, Section 9.2.3.
WAC 173-303-360(2)(i) (Permit requirement)	Emergency procedures. (i) The emergency coordinator must ensure that, in the affected area(s) of the facility: (i) No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and (ii) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.	Site-level: (i) DOE/RL-94-02, Section 9.2.3. Site-level: (ii) DOE/RL-94-02, Section 11.2.
WAC 173-303-360(2)(j) (Permit requirement)	Emergency procedures. (j) The owner or operator must notify the department, and appropriate local authorities, that the facility is in compliance with (i) of this subsection before operations are resumed in the affected area(s) of the facility.	Site-level: DOE/RL-94-02, Section 5.1.2.3.
WAC 173-303-360(2)(k) (Permit requirement)	Emergency procedures. (k) The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within fifteen days after the incident, he must submit a written report on the incident to the department. The report must include: (i) Name, address, and telephone number of the owner or operator; (ii) Name, address, and telephone number of the facility; (iii) Date, time, and type of incident (e.g., fire, explosion); (iv) Name and quantity of material(s) involved; (v) The extent of injuries, if any; (vi) An assessment of actual or potential hazards to human health or the environment, where this is applicable; (vii) Estimated quantity and disposition of recovered material that resulted from the incident; (viii) Cause of incident; and (ix) Description of corrective action taken to prevent reoccurrence of the incident.	Site-level: DOE/RL-94-02, Section 5.1.2.2.

REQUIREMENT SOURCE	REQUIREMENT DESCRIPTION	HOW IS REQUIREMENT MET?
40 CFR 761.65(c)(1)(iv) and (c)(7)(ii) SPCC Plans for PCBs	Temporary Storage Areas (less than 30-days). (c)(1)(iv): PCB containers containing liquid PCBs at concentrations of ≥50 ppm, provided a Spill Prevention, Control and Countermeasure Plan has been prepared for the temporary storage area in accordance with part 112 of this chapter and the liquid PCB waste is in packaging authorized in the DOT Hazardous Materials Regulations at 49 CFR parts 171 through 180 or stationary bulk storage tanks (including rolling stock such as, but not limited to, tanker trucks, as specified by DOT). (c)(7)(ii): The owners or operators of any facility using containers described in paragraph (c)(7)(i) of this Section, shall prepare and implement a Spill Prevention Control and Countermeasure (SPCC) Plan as described in Part 112 of this title. In complying with 40 CFR Part 112, the owner or operator shall read "oil(s)" as "PCB(s)" whenever it appears. The exemptions for storage capacity, 40 CFR 112.1(d)(2), and the amendment of SPCC plans by the Regional Administrator, 40 CFR 112.4, shall not apply unless some fraction of the liquids stored in the container are oils as defined by Section 311 of the Clean Water Act.	Site-level: DOE/RL-94-02, Sections 1.1 (fourth paragraph), 1.2 (first bullet, sixth dash and second bullet, fourth dash), and 2.2.1.1.2 (first paragraph). Unit-level: Contingency plans for Parts III, V, and VI of the Hanford Facility Dangerous Waste Permit (WA7890008967).

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APPENDIX B

MEMORANDA OF UNDERSTANDING

This appendix contains copies of memoranda of understanding between the U.S. Department of Energy Richland Operations Office and the agencies listed in the table below.

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MEMORANDUM OF UNDERSTANDING
BETWEEN
U.S. DEPARTMENT OF ENERGY, RICHLAND OPERATIONS OFFICE
AND
WASHINGTON STATE
FOR
EMERGENCY PREPAREDNESS

I. PURPOSE

The purpose of this Memorandum of Understanding (MOU) is to describe the areas of cooperation between the State of Washington (State) and the U.S. Department of Energy (DOE), Richland Operations Office (RL) and Office of River Protection (ORP) (hereafter DOE Hanford), in their planning for and response to emergencies at the Hanford Site. It also describes assistance DOE Hanford will provide to the State for other radiological emergencies that originate on, or may affect, the Hanford Site.

The concept of operations, specific responsibilities and requirements that apply to the parties to this MOU are described in their respective emergency response plans and implementing procedures.

II. REFERENCES AND AUTHORITY

Hanford Emergency Management Plan, DOE/RL-94-02

DOE/RL Emergency Plan Implementing Procedures, DOE-0223

National Response Plan, December 2004

Washington State Integrated Fixed Facility Radiological & Chemical Protection Plan, May 2004.

Washington State Emergency Operations Plan, May 2000.

Chapter 38.52, Revised Code of Washington (RCW)

III. AREA OF RESPONSIBILITY

For the purpose of emergency preparedness planning ONLY, the following definitions of areas of responsibility shall generally apply:

A. DOE Hanford

DOE Hanford is responsible for working with state and local governments to protect public health and safety in the event of an accident at Hanford. DOE Hanford is responsible for those areas within Hanford Site boundaries, excluding lands north and east of the Columbia River, river islands, lands owned or used by the Bonneville Power Administration, lands leased to Energy Northwest and lands owned or leased to the State of Washington. RL shall coordinate all aspects of this agreement on behalf of RL and ORP.

B. State of Washington

Washington State is responsible for safeguarding the citizens, property, environment, and economy in those areas outside Hanford, up to approximately a fifty-mile radius around Hanford, except for portions within the State of Oregon.

IV. RESPONSE

A. Protective Action Criteria

The Protective Action Guides (PAGs) utilized by DOE Hanford to determine emergency classification and associated protective actions for radiological releases will be consistent with those contained in the Washington State Department of Health, Division of Radiation Protection, Radiological Emergency Response Plan and Procedures. The Emergency Response Planning Guides (ERPGs) utilized by DOE Hanford to determine emergency classification and associated protective actions for non-radiological releases will be those developed and approved by the American Industrial Hygiene Association.

B. Protective Action Recommendations

In the early phase of an emergency DOE Hanford has the responsibility for consequence assessment and developing associated Protective Action Recommendations (PARs). Consequence assessment and PAR development takes place in the Unified Dose Assessment Center (UDAC) located in the DOE Hanford Emergency Operations Center (EOC). In the early phase, DOE Hanford takes the lead in determining the radioactive plume footprint both onsite and offsite. In the intermediate and late phases the State has responsibility for consequence assessment and developing associated PARs and plume footprint. DOE Hanford will make the resources of the UDAC available to the State in the intermediate and late phases for purposes of dose assessment and PAR development.

C. Protective Action Decisions

DOE Hanford is responsible for making and implementing Protective Action Decisions (PADs) for all personnel within the Hanford Site boundaries. Washington State and affected counties are responsible for making and implementing PADs for emergency workers and the public within affected areas outside Hanford Site boundaries.

D. Radiological Support

As available, DOE Hanford will provide radiological monitoring field teams to assist in the identification of the plume footprint and relocation and food control boundaries. DOE Hanford will also provide radiological monitoring resources to assist the State in conducting monitoring and decontamination of the public at designated boat launches on the Columbia River. If requested, DOE Hanford will provide the State assistance in radiation exposure evaluation. These resources will be provided until other resources are available.

E. Medical Treatment Support

As available, DOE Hanford will provide the State assistance in health hazards assessment and medical treatment advice until such time as other resources are available to assist the State.

F. Exchange of Emergency Information

1. Notifications

DOE Hanford will maintain a Crash telephone and fax machine system, which enables DOE Hanford to provide prompt emergency notifications of events, including emergency classification levels and PARs to Washington State Military Department, Emergency Management Division (EMD) and the Hanford plume emergency planning zone (EPZ) counties of Benton, Franklin and Grant simultaneously. Washington State Military Department, EMD, as the single point of contact for the State, will provide notifications to ingestion EPZ counties and any other state agencies that are procedurally required.

DOE Hanford and the State will provide liaisons to each other's EOCs, as available, to assist in information exchange.

2. Technical Data

As participants in the UDAC, State staff will have access to all technical data. Prior to arrival of State staff, DOE Hanford will transmit technical data directly to the State EOC and counties, as appropriate.

3. Emergency Public Information

During an emergency, media releases from DOE Hanford and the State will be coordinated to the maximum extent practical. DOE Hanford will activate a Joint Information Center (JIC), which is the primary location from which information will be released by DOE Hanford and the offsite agencies represented there. Each agency will focus its statements on issues within its responsibility. DOE Hanford agrees to provide accommodations and timely information within the JIC for the State to fulfill its public information responsibilities.

V. PREPAREDNESS

A. Coordination

DOE Hanford and the State will provide copies of applicable emergency plans and procedures to each other to ensure consistency.. DOE Hanford and the State shall meet periodically to review the status of plans, procedures, agreements, and capabilities that may require revision and/or further development.

B. Exercises

DOE Hanford shall provide an opportunity for State participation in an annual exercise, to the extent negotiated between DOE Hanford and the State. Washington State Emergency Management Division will coordinate the participation of other state agencies, as appropriate.

C. Public Education

Upon request, DOE Hanford will assist the State in the development of educational materials concerning Hanford hazards and appropriate actions to be taken by the general public in the event of an accident at the Hanford Site.

VI. NON-EMERGENCY EVENT INFORMATION

Events may occur on the Hanford Site that do not meet emergency criteria but may generate public concern or could possibly escalate into an emergency. DOE Hanford will notify EMD and the plume EPZ Counties of non-emergency events, called Abnormal Events, in accordance with DOE Hanford plans and procedures. No offsite actions are necessary in response to these non-emergency events.

VII. OTHER EMERGENCIES

In the event of a radiological emergency not occurring at a DOE facility but originating on, or potentially affecting the Hanford Site, DOE Hanford will provide radiological monitoring assistance to the State, as available. These resources will be provided until other resources are available.

In the event a Columbia Generating Station emergency requires evacuation of the Columbia River, DOE Hanford will provide radiological monitoring resources to assist the State in conducting monitoring and decontamination of the public at designated boat launches, in accordance with county and State procedures.

VIII. EFFECTIVE DATE, MODIFICATION AND TERMINATION

The period of performance of this agreement shall commence as of the final dated signature and full execution of this agreement and end on **February 28, 2013**. The agreement may be amended at any time by mutual written consent of the parties. Any party may terminate this agreement by providing 60 days written notice to the other party. It is also provided that this agreement may be renewed every **six** years upon written notification by either party of the intent to do so, no later than 30 days before the conclusion of the performance period. Each party will review the MOU annually and EMD will document completion of the review.

IN WITNESS WHEREOF, the PARTIES hereto have executed this AGREEMENT as of the last date written below:

APPROVED FOR THE STATE OF WASHINGTON

Christine Gregoire — 6/20/07

Governor Christine Gregoire — Date

Spencer W. Daniels 1-16-07

Assistant Attorney General — Date

APPROVED FOR THE U.S. DEPARTMENT OF ENERGY, RICHLAND OPERATIONS OFFICE

5/7/07

Keith A. Klein, Manager — Date

RECORD OF CONCURRENCE
MEMORANDUM OF UNDERSTANDING
BETWEEN
THE STATE OF WASHINGTON
AND
U.S. DEPARTMENT OF ENERGY-RICHLAND OPERATIONS OFFICE

Major General Timothy J. Lowenberg
The Adjutant General
Director, Washington Military Department

DATE: 13 June 2007

Valoria Loveland, Director
Washington State
Department of Agriculture

DATE: 2/16/07

Mary Selecky, Secretary
Washington State
Department of Health

DATE: 3/6/07

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Memorandum of Understanding between U.S. Department of Energy, Richland Operations Office and the State of Oregon for Emergency Preparedness

I. PURPOSE

This Memorandum of Understanding (MOU) establishes a framework for cooperation and outlines responsibilities between the U.S. Department of Energy (DOE), Richland Operations Office (RL) and Office of River Protection (ORP) (hereafter DOE Hanford) and the State of Oregon (hereafter Oregon) for preparedness and response to emergencies at the Hanford Site. This MOU also documents agreements to provide non-emergency event information to Oregon.

An accident involving one of Hanford's facilities could result in the release of radioactive materials into the environment. This could impact Oregon residents, natural resources, agricultural products, and the Columbia River. These facilities include, but are not limited to, nuclear reactors, hazardous waste processing and storage facilities, underground waste storage tanks and research laboratories.

The responsibilities, requirements, and obligations identified in this MOU are consistent with DOE Hanford's and Oregon's emergency response plans and implementing procedures.

II. AUTHORITY

A. DOE Hanford

DOE Hanford is responsible for working with state and local governments to protect public health and safety in the event of an accident at Hanford. DOE Hanford is responsible for activities that occur in those areas within the Hanford Site boundaries, excluding lands north and east of the Columbia River, river islands, lands owned or used by the Bonneville Power Administration, lands leased to Energy Northwest and lands owned or leased to the State of Washington. RL will coordinate all aspects of this agreement on behalf of RL and ORP.

B. Oregon

The Governor of Oregon is responsible for emergency preparedness and response in Oregon (ORS 401). The Oregon Department of Energy (Oregon Energy) has authority and responsibility for emergency preparedness and response to radiological accidents at fixed facilities and nuclear power plants (ORS 469) with potential impacts to Oregon. Oregon will coordinate all aspects of this agreement on behalf of its jurisdictions. For Hanford emergencies, this includes portions of Morrow and Umatilla counties within 50 miles of the Hanford Site.

III. OBJECTIVES

DOE Hanford and Oregon agree to coordinate their emergency preparedness programs for accidents at Hanford to establish and ensure consistent policies and procedures to:

- protect public health, safety and the environment, and
- promote public awareness of and confidence in Oregon's and DOE Hanford's response to an accident.

IV. EMERGENCY RESPONSIBILITIES

In the event of a Hanford Alert, Site Area or General Emergency, as defined in the Hanford Emergency Management Plan DOE/RL-94-02, DOE Hanford will promptly notify Oregon of the event. Notification includes providing the emergency classification and other pertinent information if available. The Oregon Emergency Operations Center (EOC) and the DOE Hanford Emergency Operations Center (EOC) will be activated and field teams will be dispatched as appropriate. Oregon will notify and provide information to ingestion counties (Morrow and Umatilla).

Emergency Phase: (Plume)	DOE Hanford will advise Oregon of recommended actions to protect residents as determined in emergency plans and procedures.
Intermediate Phase: (Ingestion)	Oregon and Morrow and Umatilla Counties, with the assistance of DOE Hanford, will identify Food Control Areas.
Recovery Phase:	Oregon will direct recovery operations to restore conditions in Morrow and Umatilla Counties to the pre-emergency status.

A. Emergency Information

During a Hanford emergency, the exchange of information between DOE Hanford and Oregon will be via commercial telephone, fax machine, and Crash telephone system. Oregon may send representatives to the DOE Hanford EOC and/or the Unified Dose Assessment Center (UDAC) to facilitate information exchange. DOE Hanford may send a representative to the Oregon EOC for the same purpose.

- **Notification**

  DOE Hanford is responsible for providing prompt notification to Oregon about emergencies on the Site. The Hanford Occurrence Notification Center (ONC) will notify the Oregon Emergency Response System via the Crash telephone and will also page the Oregon Energy Duty Officer to provide the notification. These notifications will be followed-up by a fax notification.

  Oregon Energy will immediately initiate appropriate notifications as described in the Oregon CGS/Hanford Emergency Response Plan. Oregon will maintain communications with DOE Hanford via the ONC, fax and the Crash Telephone when the Oregon Energy EOC is activated.

  Prior to the activation of the DOE Hanford EOC, the ONC will provide all essential information to Oregon by fax on an emergency notification form. Once the DOE Hanford EOC is operational, technical data and other important information will be provided from the EOC.

- **Technical Data**

  Oregon representatives at the UDAC will have access to all technical data. Prior to the arrival of Oregon staff, DOE Hanford will transmit technical information directly to the Oregon EOC.

- **Emergency Public Information**

  Emergency information released to the media and the public will be coordinated between DOE Hanford and offsite agencies to the extent practical. DOE Hanford will activate a Joint Information Center (JIC) to coordinate the release of emergency information from DOE Hanford and offsite agencies. Each response organization will focus its news releases on issues within its responsibility.

  Oregon and Morrow and Umatilla Counties will disseminate emergency information regarding Oregon's protective action decisions (PADs) for emergency workers and the public. Information on state and local emergency response activities will also be included in the news releases. DOE Hanford will provide timely information and accommodations within the JIC for Oregon representatives to fulfill public information responsibilities.

B. Emergency Measures and Criteria

The emergency measures identified and defined in this section provide for resources and actions necessary to protect the health and safety of emergency workers and the public within the plume and ingestion Emergency Planning Zones (EPZs) in the event of a Hanford accident.

- **Monitoring and Assessment**

  DOE Hanford is responsible for monitoring and assessment within the Hanford Site boundaries. DOE Hanford will assist Washington and Oregon with assessment and, as resources are available, with offsite radiological monitoring. DOE Hanford and Oregon will maintain procedures to ensure the coordination of onsite and offsite monitoring and assessment. To ensure the coordination of these activities, DOE Hanford will establish and maintain a UDAC at the DOE Hanford EOC. Oregon representatives responding to the UDAC will work with DOE Hanford staff to determine the magnitude and location of radioactive material releases to the environment.

  Emergency Phase: DOE Hanford takes the lead in determining the radioactive plume footprint both onsite and offsite.

  Intermediate Phase: Oregon takes the lead in determining relocation and Food Control Areas within Oregon. DOE Hanford will continue to provide UDAC staff to assist Oregon activities.

  DOE Hanford will provide radiological monitoring field teams, as available, to assist offsite monitoring. DOE Hanford will assist Oregon in identifying and securing additional federal resources if necessary.

- **Protective Actions**

  DOE Hanford will assist Oregon in developing ingestion protective action recommendations (PARs) for emergency workers and the public. PARs will be developed based on Oregon's Protective Action Guides (PAGs). Oregon's PAGs are consistent with the Food and Drug Administration PAGs. The PAGs apply the quantity and duration of a radiological release with the analysis of field team and instrumentation data to develop PARs. Prior to the arrival of Oregon staff, DOE Hanford UDAC staff will provide the Oregon EOC with the necessary technical data to develop the PARs.

  DOE Hanford is responsible for making and implementing Protective Action Decisions (PADs) for all personnel within the Hanford Site boundaries. Oregon is responsible for making and implementing PADs for emergency workers and the public offsite within affected areas of Oregon.

- **Recovery/Reentry Operations**

  Onsite recovery/reentry operations will be conducted in accordance with the DOE Hanford Emergency Management Plan and Emergency Implementing Procedures.

  A Recovery/Reentry Decision Group will be established to coordinate offsite activities following emergencies at Hanford as described in the Oregon emergency plan. DOE Hanford will provide a representative and assistance to the Decision Group upon request.

C. Preparedness

- **Coordination**

  DOE Hanford, Oregon, and Morrow and Umatilla Counties will meet periodically to review the status of plans, procedures, agreements, and capabilities that may require discussion, revision, and/or further development.

- **Exercises**

  DOE Hanford will provide an opportunity for offsite participation in annual exercises. Oregon will determine the level of participation in the annual DOE Hanford exercise.

- **Public Education**

  Upon request, DOE Hanford will assist Oregon in the development of educational materials concerning radiation and its hazards. Other educational materials include the appropriate actions to be taken by the public in the event of a Hanford accident.

V. NON-EMERGENCY EVENT INFORMATION

Events may occur on the Hanford Site that do not meet emergency criteria but may generate public concern or could possibly escalate into an emergency. In order to enable Oregon to respond effectively to these events, DOE Hanford will notify Oregon of non-emergency events in accordance with DOE Hanford plans and procedures. Non-emergency events include those that meet criteria for Abnormal Events and Occurrence Reporting. No offsite actions are necessary in response to non-emergency events.

A. Abnormal Events

These events could potentially escalate into emergencies or generate public concern or media interest. The ONC will notify Oregon as soon as possible and in all cases within 30 minutes following categorization of the event. The ONC will page the Oregon Energy Duty Officer to provide this notification.

B. Occurrence Reports

Occurrence Reports are prepared for incidents that may have some degree of impact on safe facility operations, worker or public safety and health, regulatory compliance, or public/business interests. The ONC will send Occurrence Reports to Oregon on a weekly basis.

VI. TERMS OF AGREEMENT

This agreement will become effective upon approval and shall remain in effect until canceled by either party by 30 days prior written notice to the other party. This agreement may be amended or modified only upon written agreement signed by all parties to the agreement.

APPROVED AS TO FORM:

Mary H. Williams, Deputy Attorney General
Oregon Department of Justice

2.23.09
Date

APPROVED FOR THE STATE OF OREGON:

Michael W. Grainey, Director
Oregon Department of Energy

1/28/09
Date

APPROVED FOR THE U.S. DEPARTMENT OF ENERGY, RICHLAND OPERATIONS OFFICE

David A. Brockman, Manager

3/6/09
Date

REVISED 082511

MEMORANDUM OF UNDERSTANDING BETWEEN U.S. DEPARTMENT OF ENERGY, RICHLAND OPERATIONS OFFICE AND BENTON COUNTY EMERGENCY SERVICES FOR EMERGENCY PREPAREDNESS

I. PURPOSE

The purpose of this Memorandum of Understanding (MOU) is to describe the areas of cooperation between Benton County and its incorporated jurisdictions and the U.S. Department of Energy (DOE), Richland Operations Office (RL) and Office of River Protection (ORP) (hereafter DOE Hanford), in their planning for and response to emergencies at the Hanford Site. It also describes assistance DOE Hanford will provide to Benton County for other radiological emergencies that originate on, or may affect, the Hanford Site.

The concept of operations, specific responsibilities and requirements that apply to the parties to this MOU are described in detail in their respective emergency response plans and procedures.

II. AREAS OF RESPONSIBILITY

For the purpose of emergency preparedness planning ONLY, the following definitions of areas of responsibility shall generally apply:

A. Benton County

This agreement applies to Benton County and its incorporated jurisdictions. Benton County Emergency Services (BCES), as an interlocal government agency under RCW 39.34, is responsible for emergency management activities and shall coordinate all aspects of this agreement on behalf of the jurisdictions within Benton County.

B. DOE Hanford

DOE Hanford is responsible for those areas within Hanford Site boundaries, excluding lands north and east of the Columbia River, river islands, lands owned or used by the Bonneville Power Administration, lands leased to Energy Northwest and lands owned or leased to the State of Washington. RL shall coordinate all aspects of this agreement on behalf of RL and ORP.

III. RESPONSE

A. Protective Action Criteria

The Protective Action Guides (PAGs) utilized by DOE Hanford to determine emergency classification and associated protective actions for radiological releases will be consistent with those contained in the *Washington State Department of Health, Division of Radiation Protection, Radiological Emergency Response Plan and Procedures*. The protective action criteria utilized by DOE Hanford to determine emergency classification and associated protective actions for non-radiological releases will be, listed in order of preference, Acute Exposure Guideline Levels (AEGLs) promulgated by the U.S. Environmental Protection Agency (EPA), Emergency Response Planning Guidelines (ERPGs) published by the American Industrial Hygiene Association, and Temporary Emergency Exposure Limits (TEELs) developed by DOE's Subcommittee on Consequence Assessment and Protective Actions.

B. Protective Action Recommendations

In the early phase of an emergency, DOE Hanford has the responsibility for dose assessment and developing associated Protective Action Recommendations (PARs) to provide to BCES. Dose assessment and PAR development takes place in the Unified Dose Assessment Center (UDAC) located in the DOE Hanford Emergency Operations Center (EOC). In the intermediate and late phases, Washington State has responsibility for dose assessment and developing associated PARs to provide to BCES. DOE Hanford will make the resources of the UDAC available to Washington State in the intermediate and late phases for purposes of dose assessment and PAR development.

C. Radiological Support

As available, DOE Hanford will provide radiological monitoring field teams to assist in the identification of the plume footprint and relocation and food control boundaries in Benton County. DOE Hanford will also provide radiological monitoring resources to assist Washington State in conducting monitoring and decontamination of the public at designated boat launches on the Columbia River. These resources will be provided until other resources are available.

D. Columbia River Alerting

DOE Hanford will maintain ten emergency sirens along the Columbia River, located between the Vernita Bridge and the Old Hanford Townsite, to alert boaters that may be on the river in the event of an emergency. Benton, Franklin, and Grant Counties will be responsible to determine when to alert the boaters and to activate the siren system. In order to facilitate siren activation by the Counties, DOE Hanford will maintain siren control stations at the Benton and Franklin County EOCs. In the event that the Benton and Franklin County EOCs are unable to activate the sirens, activation will be performed by DOE Hanford at the direction of the Counties. Upon request, DOE Hanford will provide personnel in boats to respond to designated

locations to warn boaters to avoid the evacuated area.

Special projects on the Hanford Site may require DOE Hanford to have the capability to provide emergency warning to boaters on the Columbia River with DOE's own resources. In the event of an emergency at one of these special projects, DOE will assume responsibility to warn boaters and control access to the potentially affected area of the river. Benton, Franklin or Grant Counties will provide personnel in boats to relieve Hanford resources as available. As part of the special project planning, DOE Hanford will coordinate with Benton, Franklin and Grant Counties to revise emergency procedures to enable DOE Hanford to activate the emergency river sirens and send DOE resources to warn boaters.

E. Exchange of Emergency Information

1. Notifications

DOE Hanford will maintain a Crash telephone system, which enables DOE Hanford to provide prompt emergency notifications and protective action recommendations to BCES. Southeast Communications will be the single point of contact for BCES until the Benton County EOC is declared operational.

DOE Hanford and BCES will provide liaisons to each other's EOCs, as available, to assist in information exchange.

2. Emergency Public Information

During an emergency, media releases from DOE Hanford and BCES will be coordinated to the maximum extent practical. DOE Hanford will activate a Joint Information Center (JIC), which is the primary location from which information will be released by DOE Hanford and the offsite agencies represented there. Each agency will focus its statements on issues within its responsibility. DOE Hanford agrees to provide accommodations and timely information within the JIC for BCES and/or Benton County to fulfill its public information responsibilities.

IV. PREPAREDNESS

A. Coordination

DOE Hanford and BCES will provide copies of applicable emergency plans and procedures to each other to ensure consistency. DOE Hanford and BCES shall meet periodically to review the status of plans, procedures, agreements, and capabilities that may require revision and/or further development.

B. Exercises

DOE Hanford shall provide an opportunity for BCES participation in an annual exercise, to the extent negotiated between DOE Hanford and BCES. BCES will coordinate the participation of emergency response organizations within the County.

C. Public Education

Upon request, DOE Hanford will assist BCES in the development of educational materials concerning Hanford hazards and appropriate actions to be taken by the general public in the event of an emergency at the Hanford Site.

V. OTHER EMERGENCIES

In the event a Columbia Generating Station emergency requires evacuation of the Columbia River, DOE Hanford will provide radiological monitoring resources to assist Washington State in conducting monitoring and decontamination of the public at designated boat launches. At the request of BCES, DOE Hanford will provide personnel and boats to designated locations to warn boaters to avoid the evacuated area.

VI. TERMS OF AGREEMENT

This agreement will become effective upon signature and will continue until it is canceled by any party in writing with at least thirty (30) days advance notice to the other parties. This agreement may be amended or modified only upon written agreement signed by all parties to the agreement.

APPROVED AS TO FORM

Attorney
City of Richland / BCES

8/26/11
Date

APPROVED FOR BENTON COUNTY EMERGENCY SERVICES

Chairman
Benton County Emergency Services Executive Board

8/25/11
Date

APPROVED FOR THE U.S. DEPARTMENT OF ENERGY, RICHLAND OPERATIONS OFFICE

Matt S. McCormick, Manager

11/28/11
Date

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MEMORANDUM OF UNDERSTANDING BETWEEN U.S. DEPARTMENT OF ENERGY, RICHLAND OPERATIONS OFFICE AND FRANKLIN COUNTY FOR EMERGENCY PREPAREDNESS

I. PURPOSE

The purpose of this Memorandum of Understanding (MOU) is to describe the areas of cooperation between Franklin County and its incorporated jurisdictions and the U.S. Department of Energy, Richland Operations Office (RL) and Office of River Protection (ORP) (hereafter DOE Hanford), in their planning for and response to emergencies at the Hanford Site. It also describes assistance DOE Hanford will provide to Franklin County, for other radiological emergencies that originate on, or may affect, the Hanford Site.

The concept of operations, specific responsibilities and requirements that apply to the parties to this MOU are described in their respective emergency response plans and procedures.

II. AREAS OF RESPONSIBILITY

For the purpose of emergency preparedness planning ONLY, the following definitions of areas of responsibility shall generally apply:

A. Franklin County

This agreement applies to Franklin County and its incorporated jurisdictions. Franklin County Emergency Management, as the political subdivision of Franklin County responsible for emergency management activities, shall coordinate all aspects of this agreement on behalf of the jurisdictions within Franklin County.

B. DOE Hanford

DOE Hanford is responsible for those areas within Hanford Site boundaries, excluding lands north and east of the Columbia River, river islands, lands owned or used by the Bonneville Power Administration, lands leased to Energy Northwest and lands owned or leased to the State of Washington. RL shall coordinate all aspects of this agreement on behalf of RL and ORP.

III. RESPONSE

A. Protective Action Criteria

The Protective Action Guides (PAGs) utilized by DOE Hanford to determine emergency classification and associated protective actions for radiological releases will be consistent with those contained in the *Washington State Department of Health, Division of Radiation Protection, Radiological Emergency Response Plan and Procedures*. The protective action criteria utilized by DOE Hanford to determine emergency classification and associated protective actions for non-radiological releases will be, listed in order of preference, Acute Exposure Guideline Levels (AEGLs) promulgated by the U.S. Environmental Protection Agency (EPA), Emergency Response Planning Guidelines (ERPGs) published by the American Industrial Hygiene Association, and Temporary Emergency Exposure Limits (TEELs) developed by DOE's Subcommittee on Consequence Assessment and Protective Actions.

B. Protective Action Recommendations

In the early phase of an emergency DOE Hanford has the responsibility for dose assessment and developing associated Protective Action Recommendations (PARs) to provide to Franklin County. Dose assessment and PAR development takes place in the Unified Dose Assessment Center (UDAC) located in the DOE Hanford Emergency Operations Center (EOC). In the intermediate and late phases Washington State has responsibility for dose assessment and developing associated PARs to provide to Franklin County. DOE Hanford will make the resources of the UDAC available to Washington State in the intermediate and late phases for purposes of dose assessment and PAR development.

C. Radiological Support

As available, DOE Hanford will provide radiological monitoring field teams to assist in the identification of the plume footprint and relocation and food control boundaries in Franklin County. DOE Hanford will also provide radiological monitoring resources to assist Washington State in conducting monitoring and decontamination of the public at designated boat launches on the Columbia River. These resources will be provided until other resources are available.

D. Columbia River Alerting

DOE Hanford will maintain ten emergency sirens along the Columbia River, located between the Vernita Bridge and the Old Hanford Townsite, to alert boaters that may be on the river in the event of an emergency. Benton, Franklin and Grant Counties will be responsible to determine when to alert the boaters and to activate the siren system. In order to facilitate siren activation by the Counties, DOE Hanford will maintain siren control stations at the Benton and Franklin County EOCs. In the event that the Benton and Franklin County EOCs are unable to activate the sirens, activation will be performed by DOE Hanford at the direction of the Counties. Upon

request, DOE Hanford will provide personnel in boats to respond to designated locations to warn boaters to avoid the evacuated area.

Special projects on the Hanford Site may require DOE Hanford to have the capability to provide emergency warning to boaters on the Columbia River with DOE's own resources. In the event of an emergency at one of these special projects, DOE will assume responsibility to warn boaters and control access to the potentially affected area of the river. Benton, Franklin or Grant Counties will provide personnel in boats to relieve Hanford resources as available. As part of the special project planning, DOE Hanford will coordinate with Benton, Franklin and Grant Counties to revise emergency procedures to enable DOE Hanford to activate the emergency river sirens and send DOE Hanford resources to warn boaters.

E. Exchange of Emergency Information

1. Notifications

DOE Hanford will maintain a CRASH telephone system, which enables DOE Hanford to provide prompt emergency notifications and protective action recommendations to Franklin County. Franklin County Dispatch will be the single point of contact for Franklin County until the Franklin County EOC is declared operational.

DOE Hanford and Franklin County will provide liaisons to each other's EOCs, as available, to assist in information exchange.

2. Emergency Public Information

During an emergency, media releases from DOE Hanford and Franklin County will be coordinated to the maximum extent practical. DOE Hanford will activate a Joint Information Center (JIC), which is the primary location from which information will be released by DOE Hanford and the offsite agencies represented there. Each agency will focus its statements on issues within its responsibility. DOE Hanford agrees to provide accommodations and timely information within the JIC for Franklin County to fulfill its public information responsibilities.

IV. PREPAREDNESS

A. Coordination

DOE Hanford and Franklin County will provide copies of applicable emergency plans and procedures to each other to ensure consistency. DOE Hanford and Franklin County shall meet periodically to review the status of plans, procedures, agreements, and capabilities that may require revision and/or further development.

B. Exercises

DOE Hanford shall provide an opportunity for Franklin County participation in an annual exercise, to the extent negotiated between DOE Hanford and Franklin County. Franklin County will coordinate the participation of emergency response organizations within the County.

C. Public Education

Upon request, DOE Hanford will assist Franklin County in the development of educational materials concerning Hanford hazards and appropriate actions to be taken by the general public in the event of an accident at the Hanford Site.

V. OTHER EMERGENCIES

In the event a Columbia Generating Station emergency requires evacuation of the Columbia River, DOE Hanford will provide radiological monitoring resources to assist Washington State in conducting monitoring and decontamination of the public at designated boat launches. At the request of Franklin County, DOE Hanford will provide personnel and boats to designated locations to warn boaters to avoid the evacuated area.

VI. TERMS OF AGREEMENT

This agreement will become effective upon signature and will continue until it is canceled by either party in writing with at least thirty (30) days advance notice to the other party. This agreement may be amended or modified only upon written agreement signed by all parties to the agreement.

APPROVED AS TO FORM

Shawn Sant, Prosecuting Attorney — Date 12/1/2011

APPROVED FOR FRANKLIN COUNTY

Matt Watkins, Chairman
Franklin County Emergency Management Executive Board — Date 12/9/11

APPROVED FOR THE U.S. DEPARTMENT OF ENERGY, RICHLAND OPERATIONS OFFICE

Matt S. McCormick, Manager — Date 12/28/11

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MEMORANDUM OF UNDERSTANDING BETWEEN U.S. DEPARTMENT OF ENERGY, RICHLAND OPERATIONS OFFICE AND GRANT COUNTY FOR EMERGENCY PREPAREDNESS

I. PURPOSE

The purpose of this Memorandum of Understanding (MOU) is to describe the areas of cooperation between Grant County and its incorporated jurisdictions and the U.S. Department of Energy (DOE), Richland Operations Office (RL) and Office of River Protection (ORP) (hereafter DOE Hanford), in their planning for and response to emergencies at the Hanford Site. It also describes assistance DOE Hanford will provide to Grant County for other radiological emergencies that originate on, or may affect, the Hanford Site.

The concept of operations, specific responsibilities and requirements that apply to the parties to this MOU are described in detail in their respective emergency response plans and procedures.

II. AREAS OF RESPONSIBILITY

For the purpose of emergency preparedness planning ONLY, the following definitions of areas of responsibility shall generally apply:

A. Grant County

This agreement applies to Grant County and its incorporated jurisdictions. Grant County Emergency Management shall coordinate all aspects of this agreement on behalf of the jurisdictions within Grant County.

B. DOE Hanford

DOE Hanford is responsible for those areas within Hanford Site boundaries, excluding lands north and east of the Columbia River, river islands, lands owned or used by the Bonneville Power Administration, lands leased to Energy Northwest and lands owned or leased to the State of Washington. RL shall coordinate all aspects of this agreement on behalf of RL and ORP.

III. RESPONSE

A. Protective Action Criteria

The Protective Action Guides (PAGs) utilized by DOE Hanford to determine emergency classification and associated protective actions for radiological releases will be consistent with those contained in the Washington State Department of Health, Division of Radiation Protection, Radiological Emergency Response Plan and Procedures. The protective action criteria utilized by DOE Hanford to determine emergency classification and associated protective actions for non-radiological releases will be, listed in order of preference, Acute Exposure Guideline Levels (AEGLs) promulgated by the U.S. Environmental Protection Agency (EPA), Emergency Response Planning Guidelines (ERPGs) published by the American Industrial Hygiene Association, and Temporary Emergency Exposure Limits (TEELs) developed by DOE's Subcommittee on Consequence Assessment and Protective Actions.

B. Protective Action Recommendations

In the early phase of an emergency DOE Hanford has the responsibility for dose assessment and developing associated Protective Action Recommendations (PARs) to provide to Grant County. Dose assessment and PAR development takes place in the Unified Dose Assessment Center (UDAC) located in the DOE Hanford Emergency Operations Center (EOC). In the intermediate and late phases, Washington State has responsibility for dose assessment and developing associated PARs to provide to Grant County. DOE Hanford will make the resources of the UDAC available to Washington State in the intermediate and late phases for purposes of dose assessment and PAR development.

C. Radiological Support

As available, DOE Hanford will provide radiological monitoring field teams to assist in the identification of the plume footprint and relocation and food control boundaries in Grant County. DOE Hanford will also provide radiological monitoring resources to assist Washington State in conducting monitoring and decontamination of the public at designated boat launches on the Columbia River. These resources will be provided until other resources are available.

D. Columbia River Alerting

DOE Hanford will maintain ten emergency sirens along the Columbia River, located between the Vernita Bridge and the Old Hanford Townsite, to alert boaters that may be on the river in the event of an emergency. Benton, Franklin and Grant Counties will be responsible to determine when to alert the boaters and to activate the siren system. In order to facilitate siren activation by the Counties, DOE Hanford will maintain siren control stations at the Benton and Franklin County EOCs. In the event that the Benton and Franklin County EOCs are unable to activate the sirens, activation will be performed by DOE Hanford at the direction of the Counties. Upon request, DOE Hanford will provide personnel in boats to respond to designated

locations to warn boaters to avoid the evacuated area.

Special projects on the Hanford Site may require DOE Hanford to have the capability to provide emergency warning to boaters on the Columbia River with DOE's own resources. In the event of an emergency at one of these special projects, DOE will assume responsibility to warn boaters and control access to the potentially affected area of the river. Benton, Franklin or Grant Counties will provide personnel in boats to relieve Hanford resources as available. As part of the special project planning, DOE Hanford will coordinate with Benton, Franklin and Grant Counties to revise emergency procedures to enable DOE Hanford to activate the emergency river sirens and send DOE Hanford resources to warn boaters.

E. Exchange of Emergency Information

1. Notifications

DOE Hanford will maintain a Crash telephone system, which enables DOE Hanford to provide prompt emergency notifications and protective action recommendations to Grant County. The Multi-Agency Communications Center will be the single point of contact for Grant County until the Grant County EOC is declared operational.

DOE Hanford and Grant County will provide liaisons to each other's EOCs, as available, to assist in information exchange.

2. Emergency Public Information

During an emergency, media releases from DOE Hanford and Grant County will be coordinated to the maximum extent practical. DOE Hanford will activate a Joint Information Center (JIC), which is the primary location from which information will be released by DOE Hanford and the offsite agencies represented there. Each agency will focus its statements on issues within its responsibility. DOE Hanford agrees to provide accommodations and timely information within the JIC for Grant County to fulfill its public information responsibilities.

IV. PREPAREDNESS

A. Coordination

DOE Hanford and Grant County will provide copies of applicable emergency plans and procedures to each other to ensure consistency. DOE Hanford and Grant County shall meet periodically to review the status of plans, procedures, agreements, and capabilities that may require revision and/or further development.

B. Exercises

DOE Hanford shall provide an opportunity for Grant County participation in an annual exercise to the extent negotiated between DOE Hanford and Grant County. Grant

County will coordinate the participation of emergency response organizations within the County.

C. Public Education

Upon request, DOE Hanford will assist Grant County in the development of educational materials concerning Hanford hazards and appropriate actions to be taken by the general public in the event of an accident at the Hanford Site.

V. OTHER EMERGENCIES

In the event a Columbia Generating Station emergency requires evacuation of the Columbia River, DOE Hanford will provide radiological monitoring resources to assist Washington State in conducting monitoring and decontamination of the public at designated boat launches. At the request of Grant County, DOE Hanford will provide personnel and boats to designated locations to warn boaters to avoid the evacuated area.

VI. TERMS OF AGREEMENT

This agreement will become effective upon signature and will continue until it is canceled by either party in writing with at least thirty (30) days advance notice to the other party. This agreement may be amended or modified only upon written agreement signed by all parties to the agreement.

APPROVED AS TO FORM

Derek A Lee, Prosecuting Attorney

11/30/11
Date

APPROVED FOR GRANT COUNTY

Carolann Swartz, Chairperson
Grant County Board of Commissioners

12/5/11
Date

APPROVED FOR THE U.S. DEPARTMENT OF ENERGY, RICHLAND OPERATIONS OFFICE

Matt S. McCormick, Manager

12/28/11
Date

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MEMORANDUM OF UNDERSTANDING
BETWEEN
ENERGY NORTHWEST
AND
U.S. DEPARTMENT OF ENERGY, RICHLAND OPERATIONS OFFICE,
FOR
EMERGENCY PREPAREDNESS AND RESPONSE

I. PURPOSE

This memorandum of understanding (MOU) reaffirms the established framework of cooperation between Energy Northwest and the U.S. Department of Energy (DOE), Richland Operations Office (RL) and Office of River Protection (ORP) (hereafter referred to as DOE Hanford), in the planning for and response to emergencies at the Hanford Site. Fire and ambulance response is covered under a separate agreement.

II. BACKGROUND

Emergencies occurring at Hanford facilities or the Columbia Generating Station may affect other facilities on the Hanford Site. In addition, both parties actively coordinate emergency preparedness activities and provide support to some of the same local and state agencies, which present further opportunities for coordination and resource sharing.

The Columbia Generating Station Site is defined as the 1.2 mile Exclusion Area plus the pipeline corridor leading to the Columbia River pump house.

The Hanford Site is defined as those areas within the Hanford Site boundaries, excluding lands north and east of the Columbia River, river islands, lands owned or used by the Bonneville Power Administration, lands leased to Energy Northwest, and lands owned or leased to the State of Washington.

III. OBJECTIVE

The objective of this MOU is to identify responsibilities and areas of cooperation and assistance that may be provided for emergency preparedness and response.

IV. RESPONSIBILITIES

DOE Hanford is responsible for direction and overview for all emergency response actions required within the Hanford Site, as defined above. DOE-RL shall coordinate all aspects of this agreement on behalf of DOE-RL and DOE-ORP.

Energy Northwest is responsible for direction and overview of emergency response actions required on the Columbia Generating Station Site. Both parties are responsible to provide prompt notification to designated points of contact and, as necessary, protective action recommendations to the other in the event of an emergency at their facilities.

V. IMPLEMENTATION

A. Communications

Energy Northwest will use existing DOE Hanford communications systems through the Patrol Operations Center (POC) and Occurrence Notification Center (ONC) for emergency communications between Energy Northwest and DOE Hanford. Energy Northwest will provide emergency communications capabilities in the form of a radio link to the POC and DOE Hanford Emergency Operations Center (EOC), and a special telephone circuit between Energy Northwest facilities and POC, DOE Hanford EOC, Benton County EOC, Franklin County EOC, and the State of Washington. DOE Hanford will provide emergency communications capabilities in the form of a special telephone circuit between POC, ONC, and DOE Hanford EOC and Energy Northwest EOF, Benton County EOC, Franklin County EOC, Grant County EOC, the State of Washington, and the State of Oregon. DOE Hanford and Energy Northwest will participate in periodic testing, as necessary, to assure operation of the communications capabilities and to meet any regulatory requirement for this function.

Energy Northwest will allow DOE Hanford radio control access to Energy Northwest's radiological field team radio repeater located on Rattlesnake Ridge. DOE Hanford will provide the leased circuits, interface equipment, and radio control unit necessary to implement this function. DOE Hanford will participate in periodic testing of the system to assure operational readiness and compliance with regulatory requirements.

Energy Northwest and DOE provide equipment to Benton and Franklin Counties for activation control of DOE and Energy Northwest Columbia River sirens. In order to minimize the equipment necessary for the Counties to simultaneously activate both DOE and Energy Northwest river sirens, it is agreed that all the river sirens and associated siren control equipment will operate on the same radio frequencies as the Energy Northwest river sirens. Energy Northwest will maintain the FCC radio frequency licenses for its sirens and DOE will maintain the NTIA radio frequency authorizations for the 10 DOE-owned river sirens which will operate on the same frequencies as the Energy Northwest river sirens.. DOE will maintain the joint river siren control equipment at Benton and Franklin Counties while Energy Northwest will maintain the radio equipment at both sites. The Hanford ONC will obtain approval from Energy Northwest for any changes to the encoding system or test plans.

B. Emergency Facilities and Equipment

Mutual assistance, as needed and available, will be provided in the areas of facilities and equipment for personnel decontamination, first aid, evacuation reassembly areas, respiratory protective equipment, radiological protective clothing, vehicles, radiological survey instruments,and resources for river alerting.

C. Treatment of Radiologically Contaminated Persons

DOE Hanford will provide assistance, as requested and available, in treatment of radiologically contaminated or exposed, injured patients. Assistance will be provided by DOE Hanford contractors specializing in medical treatment and exposure/uptake evaluation.

D. Radiation Control and Meteorology Data

Environmental and meteorology data and radiological release evaluation data will be exchanged. If the emergency is at a DOE Hanford facility or outside the Columbia Generating Station Site, DOE Hanford will have responsibility for primary dose assessment, development of protective action recommendations, and field team control. If the emergency originates at the Columbia Generating Station Site, Energy Northwest will have responsibility for dose assessment and development of protective action recommendations. DOE will retain field team control responsibilities on the Hanford Site. Due to DOE Hanford's unique ownership of Hanford facilities and properties, DOE Hanford shall participate, along with Energy Northwest and the State of Washington in the development of joint dose assessment and protective action recommendations and coordination of field teams in Energy Northwest's Meteorological Unified Dose Assessment Center.

E. Training and Exercises

Coordination of training and exercise opportunities is encouraged. Energy Northwest and DOE Hanford shall coordinate exercises and training opportunities as appropriate.

F. Public Information

In cooperation with Benton and Franklin Counties, DOE Hanford and Energy Northwest will jointly assist these counties in the development of educational materials concerning the emergency preparedness program for the Hanford Site and the Columbia Generating Station Site, including information regarding appropriate actions to be taken by the general public in the event of an emergency.

G. Emergency Public Information

If the emergency originates on the Hanford Site, outside the Columbia Generating Station Site, DOE Hanford will have primary emergency public information responsibility. If the emergency originates at the Columbia Generating Station Site, Energy Northwest will have the primary emergency public information responsibility. DOE Hanford and Energy Northwest shall participate as partners in the Energy Northwest or DOE Hanford Joint Information Center.

VI. LIMITATIONS

The specific areas of assistance, as defined above, will be provided based on availability, and are limited to those actions necessary to protect onsite personnel, the public health and safety, and the environment in the event of an emergency at the Hanford Site and/or the Columbia Generating Station Site.

VII COST RECOVERY

When the parties to this MOU agree to provide equipment, services, etc., this implies each party will pay the attendant costs and expenses associated with that equipment, service, etc., unless otherwise specified. If either party is responding to the other due to an actual (i.e., declared) emergency event, then the parties will act in good faith to take steps to provide a mechanism for reimbursement for all reasonable costs resulting from a request for services consistent with applicable contracting requirements.

IX TERM OF AGREEMENT

This memorandum of understanding will become effective upon the latter date of signature by the parties. It shall continue until cancelled or amended by either of the parties upon 60 days written notice to the other party. Amendments or modification shall be in writing and signed by both parties to this agreement.

APPROVED FOR THE U.S. DEPARTMENT OF ENERGY, RICHLAND OPERATIONS OFFICE:

Keith A. Klein,
Manager

5/7/07
Date

APPROVED FOR ENERGY NORTHWEST:

W.S. Oxenford,
Vice President, Technical Services

3/29/07
Date

Memorandum of Understanding

between

AREVA NP Inc.

and

U.S. Department of Energy, Richland Operations Office

April 2011

PURPOSE

This Memorandum of Understanding (MOU) establishes a means by which the U.S. Department of Energy, Richland Operations Office (RL) can assist AREVA NP Inc. (AREVA NP) through the use of RL facilities during an emergency at the AREVA NP plant site in Richland, Washington.

BACKGROUND

AREVA NP has identified a potential need for an alternate emergency operations center (EOC) and alternate locations at which to conduct consequence assessment and employee staging during an emergency. Due to the close proximity of the AREVA NP site to the Hanford site there is the potential that Hanford facilities and workers could be impacted from an accidental release of hazardous materials at the AREVA NP site. The ability of AREVA NP to conduct effective emergency operations is key to the protection of Hanford workers and property.

STATEMENT OF OBJECTIVES

1. Develop an arrangement to provide support to AREVA NP that will also support RL's ability to protect Hanford workers and facilities;

2. Identify the scope and limitations of RL support to AREVA NP in the event of an AREVA NP emergency; and

3. Identify the activities and associated responsibilities necessary to ensure the preparedness of the Parties to provide and coordinate the requested support.

IMPLEMENTATION

If a hazardous material (toxic chemical or radiological) release occurs at AREVA NP, AREVA NP will notify the Hanford Occurrence Notification Center. This notification will include a brief description of the incident, the emergency classification level, the nature and quantity of hazardous materials released, and protective action recommendations, as available.

If AREVA NP is unable to use their facilities for emergency operations, consequence assessment, or employee staging,

AREVA NP will:

- Notify the Hanford Occurrence Center (376-2900) of the facility support they request.

- If an alternate EOC or employee staging area is requested, AREVA NP will also notify the HAMMER work control (376-5353) to advise that use of HAMMER facilities is required.

- If an alternate location for conducting consequence assessment is needed, AREVA NP will send consequence assessment personnel to the Hanford EOC to perform those functions.

RL will:

- Provide the AREVA NP personnel responding to the Hanford EOC the use of equipment to perform consequence assessment duties.

- Provide space at HAMMER, as available during normal HAMMER business hours, for an alternate AREVA NP EOC when requested. The space should provide adequate shelter for approximately 20 response personnel, and be supplied with chairs, working surfaces and electrical outlets.

- Provide an outdoor location for use as an alternate employee staging area when requested. The location should provide space to hold 600-700 AREVA NP personnel.

As preparation for the emergency support covered under this agreement,

AREVA NP will:

- Provide RL with any AREVA NP tools needed by AREVA NP consequence assessment personnel, e.g. computer software, procedure or supplies.

- Contact HAMMER work control at least two weeks in advance to request use of HAMMER facilities for AREVA NP exercises or drills.

RL will:

- Maintain consequence assessment tools, as provided by AREVA NP, in the Hanford EOC for use by AREVA NP personnel.

LIMITATIONS

The Parties understand that emergencies affecting the Hanford site or Hanford facilities would take precedence over all other uses of the RL facilities.

COST RECOVERY

AREVA NP agrees to reimburse RL on a full cost recovery basis for the use of Hanford facilities.

DISCLOSURE

Any press releases, media announcements, and advertising that pertain to this MOU, shall be provided by both Parties prior to release, except for those done under the Freedom of Information Act (5 U.S.C. 552).

EFFECTIVE DATE / TERMINATION

This agreement will become effective upon signature and will continue until it is canceled by either party in writing with at least thirty (30) days advance notice to the other party. This agreement may be amended or modified only upon written agreement signed by all parties to the agreement.

APPROVED

By: _____
(Signature)

Matthew S. McCormick, Manager
Richland Operations Office
United States Department of Energy

5/6/11
Date

By: _____
(Signature)

R. E. Link, Manager
Environmental, Health, Safety & Licensing
AREVA NP Inc.

4/19/11
Date

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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

SEP 30 1994

Mr. Robert Richey, Chief
Meteorological Services Division
National Weather Service
Western Regional Headquarters
P.O. Box 11188, Federal Building
Salt Lake City, Utah 84147

Dear Mr. Richey:

LETTER OF AGREEMENT

This is an update to our letter of October 23, 1991, on the same topic. The U.S. Department of Energy, Richland Operations Office (RL), would like to renew the agreement with the National Weather Service (NWS), Washington area, for possible response to an emergency at the Hanford Site.

The following conditions would continue to be applicable to this agreement. RL will provide to the NWS:

1. Notification of emergencies occurring on the Hanford Site.

2. Meteorological information including routine hourly surface observations and special observations via Automated Field Operation Services (AFOS). This information will be provided by the Hanford Meteorology Station operated by the Pacific Northwest Laboratory. In the event of emergencies on the Hanford Site, hourly observations will be supplemented with observations from the telemetry station on Rattlesnake Mountain (Station #20) and from other reporting stations as necessary. These supplemental observations will consist of station number, wind speed, and wind direction. Wind speed and direction will be reported in accordance with Federal Meteorological Handbook No. 1 (Surface Observations). (Special observations may be omitted when the forecaster's workload is such that other duties take precedence.)

The NWS will provide to RL:

1. Organizational structure, personnel lists, 24-hour telephone numbers, locations, and areas of responsibility of NWS offices that may be involved with incidents or emergencies on the Hanford Site.

2. Synoptic scale weather information and forecasts in support of activities to mitigate unusual events, incidents, or emergencies on the Hanford Site.

SEP 30 1994

Mr. Robert Richey -2-

This agreement may be terminated by either party upon 30 days written notice to the other party. If these arrangements meet with your approval, please sign below and return one copy of this letter. If you have any questions, please contact Ms. J. L. Tokarz-Hames of my staff at (509) 376-4766.

Sincerely,

John B. Hall

John B. Hall, Acting Director
Quality, Safety, and Health
Programs Division

QSH:JLH

APPROVED: ✓

SIGNATURE: Richard H. Douglas

NAME: RICHARD DOUGLAS

TITLE: Deputy Chief MSD, WRRF

DATE: OCT 5, 94

MEMORANDUM OF UNDERSTANDING BETWEEN THE U.S. DEPARTMENT OF ENERGY RICHLAND OPERATIONS OFFICE AND LOURDES MEDICAL CENTER

I. PURPOSE

This memorandum of understanding (MOU) sets forth the understanding of the parties on the mutual cooperation which the parties seek to provide in instances which could result in Lourdes Medical Center (hereafter Lourdes) admission, treatment, and care of personnel who may have been injured and/or contaminated (radiologically, chemically and/or biologically) while performing work for the U.S. Department of Energy, Richland Operations Office (RL), Office of River Protection (ORP), and Pacific Northwest Site Office (PNSO) (hereafter DOE Hanford), their prime contractors, and subcontractors on the Hanford Site. This memorandum also establishes the cooperative framework by which Lourdes and DOE Hanford will work together in the planning for and response to emergencies at the Hanford Site.

II. BACKGROUND

Emergencies occurring at Hanford facilities have the potential to affect both site and community medical response capabilities. The Lourdes, DOE Hanford, and its contractors take part in the coordination and support of local emergency preparedness activities. This provides opportunity to not only coordinate response actions, but also facilitates the optimal utilization of shared resources.

III. OBJECTIVE

The objective of this MOU is to identify areas of cooperation and assistance that may be provided as a result of emergency response planning activities or during an actual emergency event.

IV. RESPONSIBILITIES

DOE HANFORD

RL shall coordinate all aspects of this agreement on behalf of RL, ORP, and PNSO. Access to specialized professional expertise contained within the Hanford workforce for distinctive issues that can confront DOE Hanford and its contractors is available to Lourdes by contacting the Patrol Operations Center on 373-3800 or the Occurrence Notification Center on 376-2900.

DOE Hanford intends to put forth its best effort in providing the following services and professional resources:

Health physics support to the emergency department staff;

Occupational medical physicians or physician assistant's support to the emergency department as requested;

Material Safety Data Sheets;

The scheduling and planning of joint emergency exercises;

The replacement of material used from any pre-stored radiation emergency kit; and

A liaison to respond to Lourdes to act as an advocate for the patient and provides an information link to the patient's employer.

LOURDES

Lourdes intends to put forth its best effort to:

Contact the Hanford Site Occupational Medical Contractor physician on-call (373-3800 and request medical support) for all Hanford personnel with suspected or confirmed occupational chemical, biologic, or radiation exposure;

Consider in its treatment and/or admission of injured, exposed and/or contaminated personnel, the application of accepted medical practice, and its responsibility to limit admissions to those numbers which can be properly handled; and

Participate in Hanford Emergency Exercises.

AREAS OF COOPERATION

The Hanford Site Occupational Medical Contractor, Lourdes, and DOE Hanford will work cooperatively to address issues including, but not limited to, interaction among the parties, areas of mutual concern, resource requirements, and quality of care.

The Hanford Site Medical Director will work in cooperation with Lourdes medical staff to develop a mutually agreeable set of protocols for diagnosis of work related injuries and illnesses, including cases involving chemical,

biologic, and/or radiation contamination injuries. These protocols will be reviewed and/or modified as necessary.

DOE Hanford and the Hanford Site Occupational Medical Contractor as requested by Lourdes will provide training in the medical management of the radiologically contaminated person.

V. DISCLOSURE

The parties will use their best efforts to assure that press releases, media announcements, and advertising by the parties, pertaining to this MOU, or the joint activities performed hereunder, have been reviewed and approved by both parties prior to release.

VI. TERM OF AGREEMENT

This MOU and its attachment(s) will become effective upon the latter date of the signature by the parties. It shall continue until canceled by either or the parties upon thirty days (30) written notice to the other party. Amendments or modifications of the MOU shall be in writing and signed by both parties to the agreement.

APPROVED FOR THE U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE

Keith Klein, Manager — **Date** 5/7/07

APPROVED FOR LOURDES MEDICAL CENTER

John Serle, President & CEO — **Date** 4-24-07

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MEMORANDUM OF UNDERSTANDING BETWEEN THE U.S. DEPARTMENT OF ENERGY RICHLAND OPERATIONS OFFICE AND KADLEC MEDICAL CENTER

I. PURPOSE

This memorandum of understanding (MOU) sets forth the understanding of the parties on the mutual cooperation which the parties seek to provide in instances which could result in Kadlec Medical Center's (KMC) admission, treatment, and care of personnel who may have been injured and/or contaminated (radiologically, chemically and/or biologically) while performing work for the U.S. Department of Energy, Richland Operations Office (RL), Office of River Protection (ORP), and Pacific Northwest Site Office (PNSO) (hereafter DOE Hanford), their prime contractors, and subcontractors on the Hanford Site. This memorandum also establishes the cooperative framework by which KMC and DOE Hanford will work together in the planning for and response to emergencies at the Hanford Site.

II. BACKGROUND

Emergencies occurring at Hanford facilities have the potential to affect both site and community medical response capabilities. The KMC, DOE Hanford, and its contractors take part in the coordination and support of local emergency preparedness activities. This provides opportunity to not only coordinate response actions, but also facilitates the optimal utilization of shared resources.

III. OBJECTIVE

The objective of this MOU is to identify areas of cooperation and assistance that may be provided as a result of emergency response planning activities or during an actual emergency event.

IV. RESPONSIBILITIES

DOE HANFORD

RL shall coordinate all aspects of this agreement on behalf of RL, ORP, and PNSO. Access to specialized professional expertise contained within the Hanford workforce for distinctive issues that can confront DOE Hanford and its contractors is available to KMC by contacting the Patrol Operations Center on 373-3800 or the Occurrence Notification Center on 376-2900.

DOE Hanford intends to put forth its best effort in providing the following services and professional resources:

Health physics support to the emergency department staff;

Occupational medical physicians or physician assistant's support to the emergency department as requested;

Material Safety Data Sheets;

The scheduling and planning of joint emergency exercises;

The replacement of material used from any pre-stored radiation emergency kit; and

A liaison to respond to KMC to act as an advocate for the patient and provides an information link to the patient's employer.

KMC

KMC intends to put forth its best effort to:

Contact the Hanford Site Occupational Medical Contractor physician on-call (373-3800 and request medical support) for all Hanford personnel with suspected or confirmed occupational chemical, biologic, or radiation exposure;

Consider in its treatment and/or admission of injured, exposed and/or contaminated personnel, the application of accepted medical practice, and its responsibility to limit admissions to those numbers which can be properly handled; and

Participate in Hanford Emergency Exercises.

AREAS OF COOPERATION

The Hanford Site Occupational Medical Contractor, KMC, and DOE Hanford will work cooperatively to address issues including, but not limited to, interaction among the parties, areas of mutual concern, resource requirements, and quality of care.

The Hanford Site Medical Director will work in cooperation with KMC medical staff to develop a mutually agreeable set of protocols for diagnosis of work related injuries and illnesses, including cases involving chemical,

biologic, and/or radiation contamination injuries. These protocols will be reviewed and/or modified as necessary.

DOE Hanford and the Hanford Site Occupational Medical Contractor as requested by KMC will provide training in the medical management of the radiologically contaminated person.

V. DISCLOSURE

The parties will use their best efforts to assure that press releases, media announcements, and advertising by the parties, pertaining to this MOU, or the joint activities performed hereunder, have been reviewed and approved by both parties prior to release.

VI. TERM OF AGREEMENT

This MOU and its attachment(s) will become effective upon the latter date of the signature by the parties. It shall continue until canceled by either or the parties upon thirty days (30) written notice to the other party. Amendments or modifications of the MOU shall be in writing and signed by both parties to the agreement.

APPROVED FOR THE U.S. DEPARTMENT OF ENERGY RICHLAND OPERATIONS OFFICE

Keith Klein, Manager — **Date** 5/7/07

APPROVED FOR KADLEC MEDICAL CENTER

Julie L. Meek, Vice President Finance — **Date** 04/18/07

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MEMORANDUM OF UNDERSTANDING BETWEEN THE U.S. DEPARTMENT OF ENERGY RICHLAND OPERATIONS OFFICE AND KENNEWICK GENERAL HOSPITAL

I. PURPOSE

This memorandum of understanding (MOU) sets forth the understanding of the parties on the mutual cooperation which the parties seek to provide in instances which could result in Kennewick General Hospital (hereafter KGH) admission, treatment, and care of personnel who may have been injured and/or contaminated (radiologically, chemically and/or biologically) while performing work for the U.S. Department of Energy, Richland Operations Office (RL), Office of River Protection (ORP), and Pacific Northwest Site Office (PNSO) (hereafter DOE Hanford), their prime contractors, and subcontractors on the Hanford Site. This memorandum also establishes the cooperative framework by which KGH and DOE Hanford will work together in the planning for and response to emergencies at the Hanford Site.

II. BACKGROUND

Emergencies occurring at Hanford facilities have the potential to affect both site and community medical response capabilities. The KGH, DOE Hanford, and its contractors take part in the coordination and support of local emergency preparedness activities. This provides opportunity to not only coordinate response actions, but also facilitates the optimal utilization of shared resources.

III. OBJECTIVE

The objective of this MOU is to identify areas of cooperation and assistance that may be provided as a result of emergency response planning activities or during an actual emergency event.

IV. RESPONSIBILITIES

DOE HANFORD

RL shall coordinate all aspects of this agreement on behalf of RL, ORP, and PNSO. Access to specialized professional expertise contained within the Hanford workforce for distinctive issues that can confront DOE Hanford and its contractors is available to KGH by contacting the Patrol Operations Center on 373-3800 or the Occurrence Notification Center on 376-2900.

DOE Hanford intends to put forth its best effort in providing the following services and professional resources:

Health physics support to the emergency department staff;

Occupational medical physicians or physician assistant's support to the emergency department as requested;

Material Safety Data Sheets;

The scheduling and planning of joint emergency exercises;

The replacement of material used from any pre-stored radiation emergency kit; and

A liaison to respond to KGH to act as an advocate for the patient and provides an information link to the patient's employer.

KGH

KGH intends to put forth its best effort to:

Contact the Hanford Site Occupational Medical Contractor physician on-call (373-3800 and request medical support) for all Hanford personnel with suspected or confirmed occupational chemical, biologic, or radiation exposure;

Consider in its treatment and/or admission of injured, exposed and/or contaminated personnel, the application of accepted medical practice, and its responsibility to limit admissions to those numbers which can be properly handled; and

Participate in Hanford Emergency Exercises.

AREAS OF COOPERATION

The Hanford Site Occupational Medical Contractor, KGH, and DOE Hanford will work cooperatively to address issues including, but not limited to, interaction among the parties, areas of mutual concern, resource requirements, and quality of care.

The Hanford Site Medical Director will work in cooperation with KGH medical staff to develop a mutually agreeable set of protocols for diagnosis of work related injuries and illnesses, including cases involving chemical,

biologic, and/or radiation contamination injuries. These protocols will be reviewed and/or modified as necessary.

DOE Hanford and the Hanford Site Occupational Medical Contractor as requested by KGH will provide training in the medical management of the radiologically contaminated person.

V. DISCLOSURE

The parties will use their best efforts to assure that press releases, media announcements, and advertising by the parties, pertaining to this MOU, or the joint activities performed hereunder, have been reviewed and approved by both parties prior to release.

VI. TERM OF AGREEMENT

This MOU and its attachment(s) will become effective upon the latter date of the signature by the parties. It shall continue until canceled by either or the parties upon thirty days (30) written notice to the other party. Amendments or modifications of the MOU shall be in writing and signed by both parties to the agreement.

APPROVED FOR THE U.S. DEPARTMENT OF ENERGY RICHLAND OPERATIONS OFFICE

Keith Klein, Manager — **Date** 5/7/07

APPROVED FOR KENNEWICK GENERAL HOSPITAL

Glen Marshall, CEO — **Date** 3/1/07

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Tri-County Mutual Aid Agreement

This Agreement, made and entered into on this 5th day of February, 1998 by and between the Cities of Richland, Kennewick, Pasco, Prosser, and College Place; Benton County Emergency Services; Franklin County Emergency Management; and the Fire Protection Districts of Benton County #1, Benton County #2, Benton County #3, Benton County #4, Benton County #5, Benton County #6, Franklin County #3, Walla Walla County #4, Walla Walla County #5 and the United States Department of Energy, Richland Operations Office, which maintains an organized and equipped fire department, hereinafter referred to as the "Hanford Fire Department" and collectively referred to hereafter as "The Parties."

The Parties, pursuant to authority granted by RCW 39.34.030, RCW Title 52, and Public Law 46 (Title 42 USC, Section 1856), do hereby agree to respond in accordance with the terms and conditions as set forth below;

Witnesseth:
Whereas, each of The Parties, who are signatories, hereto maintains equipment and personnel for the suppression of fires within its own jurisdiction and areas, and

Whereas, The Parties desire the ability to augment the fire and emergency medical protection available in their various establishments, districts, agencies, and municipalities in the event of large fires or conflagrations or other disasters, and

Whereas, the lands or districts of The Parties are situated in such a manner so that mutual assistance in a fire or medical emergency is operationally feasible, and

Whereas, it is the policy of The Parties and of their governing bodies to conclude such agreements wherever practicable, and

Whereas, it is mutually deemed sound, desirable, practicable, and beneficial for The Parties to render assistance to one another in accordance with these terms:

Therefore Be It Agreed That:

1. Whenever it is considered necessary by the commanding officer of a fire agency belonging to a party to this agreement, or by the commanding officer of any such fire agency actually present at any fire or other emergency, including medical emergency, to request assistance under the terms of this agreement, is authorized to do so, and the commanding officer of the department receiving the request, or any authorized representatives of such commanding officer, shall expeditiously take the following actions:

A. Immediately determine if apparatus and personnel can be spared in response to the call and advise the requesting commander if such assistance is not available.

B. Determine what apparatus and personnel might be most effectively dispatched,

C. Determine the mission to be assigned in accordance with the detailed plans and procedures of operation drawn in accordance with this agreement by the technical heads of the fire agencies concerned.

D. Promptly dispatch apparatus and personnel with instructions as to their mission.

2. A. Rendering assistance under the terms of this agreement shall not be mandatory.

B. The Parties recognize that additional special risks exist at the Hanford Site. During incidents involving radiological, mixed hazardous waste, and special conditions, assistance to the Hanford Fire Department will be provided as requested.

3. A. Each party to this agreement waives all claims against the other party or parties for compensation for any loss, damage, personal injury or death occurring in consequence of the performance of this agreement.

B. Parties to this agreement can seek reimbursement for services under contractual or service agreements.

C. No party to this Agreement shall be required to pay compensation to any other party for services rendered. The mutual advantages and protection afforded by this Agreement shall be adequate consideration.

D. Each party shall indemnify and hold harmless each of the other parties, their officers, agents, contractors, servants and employees from any and all liability for such losses, expenses, damages, personal injury or death arising out of fire protection assistance rendered pursuant to this agreement. All such claims and related rights are hereby expressly waived with the exception of claims for injuries and property damage resulting from nuclear incidents as defined at 42 USC Section 2014(q) which may be subject to indemnification under the provisions of the Price-Anderson Act, 42 USC Section 2210.

E. Parties to this agreement will not hold any joint properties.

Tri-County Mutual Aid Agreement ***February 5, 1998***

4. The commanding officer requesting assistance shall assume full charge of the incident. Command of an incident may only be assumed under a written delegation of authority. However, the involved agency maintains overall responsibility of the incident. If the officer specifically requests that a senior officer of a fire agency furnishing assistance assist with command, the requesting officer shall not, by requesting assistance be relieved of his responsibility for the operation. The apparatus, personnel and equipment of the agency rendering assistance shall be under the immediate supervision of and shall be the immediate responsibility of the senior responding officer or the commanding officer of the department rendering assistance.

5. Inherent in this plan is the need and requirement for training of all participating district/departments. Individual, company, and agency training is required as a prerequisite and must be on-going and upgraded to ensure the qualification of personnel and the quality of the responses in performance, integration, and safety.

6. The chief fire officer and personnel of the fire agencies of The Parties are invited and encouraged on a reciprocal basis, to frequently visit each other's activities for guided familiarization tours consistent with local security requirements and as feasible, to jointly conduct pre-fire planning inspections, drills, and interdepartmental multi-agency training exercises may be conducted to maintain proficiency on an agreed-upon schedule.

7. The commanding officers of the cooperating fire agencies shall constitute the administrations board and are authorized to meet and draft any detailed plans and operational procedures necessary to effectively implement this agreement. Such plans and procedures of operation shall become effective upon ratification by the signatory parties.

8. It is agreed to by the participating parties that future participation by additional entities shall be subject to approval by the Tri-County Fire Chiefs' Association. The governing bodies of the participating entities hereby delegate this approval authority to their respective representatives.

9. This agreement shall become effective upon the date entered and remain in full force and effect until canceled by mutual agreement of the parties'. Individuals/single parties will provide written notice of withdrawal by any party to the other parties giving a minimum of ten (10) days' notice of said cancellation.

Tri-County Mutual Aid Agreement *February 5, 1998*

In Witness Whereof, the parties hereto have executed this agreement the day and year first above written.

11/4/97	City of Richland — Date	11/4/97	City of Kennewick — Date
11-3-97	City of Pasco — Date	10-28-97	City of Prosser — Date
10/27/97	City of College Place — Date		Benton County Fire District #1 — Date
11/3/97	Benton County Fire District #2 — Date	10-28-97	Benton County Fire District #3 — Date
10-21-97	Benton County Fire District #4 — Date	11-5-97	Benton County Fire District #5 — Date
10-21-97	Benton County Fire District #6 — Date	11/10/97	Franklin County Fire District #3 — Date
10/22/97	Walla Walla County Fire District #4 — Date		Walla Walla County Fire District #5 — Date
10-17-97	Benton County Emergency Services — Date	11-06-97	Franklin County Emergency Mgmt. — Date
11/21/97	John D. Wagoner, Manager — Date U.S. Department of Energy Richland Operations Office		

MEMORANDUM OF UNDERSTANDING
FOR MUTUAL LAW ENFORCEMENT ASSISTANCE
(March 13, 2009)

This Memorandum of Understanding (MOU) is entered into between the U.S. Department of Energy (DOE), Richland Operations Office (RL), Security and Emergency Services Division (SES), and the following law enforcement agencies:

- Adams County Sheriff's Office, Adams County, Washington
- Benton County Sheriff's Office, Benton County, Washington
- Franklin County Sheriff's Office, Franklin County, Washington
- Grant County Sheriff's Office, Grant County, Washington
- Yakima County Sheriff's Office, Yakima County, Washington
- Kennewick Police Department, Kennewick, Washington
- Pasco Police Department, Pasco, Washington
- Richland Police Department, Richland, Washington
- West Richland Police Department, West Richland, Washington
- Tri-City Detachment, Washington State Patrol, Kennewick, Washington

RECITALS

1. The above listed departments are the principal law enforcement agencies of their respective municipalities and/or counties. The Hanford Site is located in Benton County and adjacent to Adams, Franklin, Yakima, and Grant Counties.

2. This agreement is entered into by DOE pursuant to the Economy Act, 31 U.S.C. § 1535, the Atomic Energy Act of 1954, 42 U.S.C. § 7256, as amended, and DOE Manual 470.4-3, and by the above listed law enforcement agencies pursuant to RCW 10.93.130, which provides that any law enforcement agency may contract with any other such agency to provide mutual law enforcement assistance in order that the parties may perform their responsibilities described above. This MOU will be reviewed annually.

3. The sheriffs and police chiefs of the above listed agencies and the SES Director shall jointly administer this agreement.

4. There shall be no funds or property held under this agreement.

ARTICLE I – Scope

The general scope of this agreement includes mutual law enforcement assistance, loan of special equipment, and other assistance (i.e. canine support), which may be identified by the parties from time to time. Specifically, the parties agree as follows:

A. The sheriffs and police chiefs of the above listed agencies, at their discretion and to the extent allowed by law, agree to commit available manpower and other resources to assist RL security or law enforcement in emergencies on the Hanford Site. DOE will provide training and special equipment and materials to facilitate response by the above listed enforcement agencies.

B. RL, at its discretion and to the extent allowed by law, will provide assistance to the above listed law enforcement agencies in the execution of their law enforcement responsibilities. Assistance may include temporary use of certain property and equipment, including where appropriate and necessary, operators of such equipment; and use of facilities (to include, but not be limited to, the Emergency Vehicle Operations Course). RL may require individual employees of the law enforcement agencies to sign general release and indemnification agreements as a condition of granting approval for use of, or training with, DOE property or facilities (to include but not be limited to EVOC).

ARTICLE II – Request for Assistance

A. Requests for assistance from RL shall generally be made by the sheriffs and police chiefs or their official designees and shall be addressed to the SES Director. Each request shall be subject to approval on an individual basis. Upon approval, the requested assistance will be provided, subject to the provisions of this agreement and any additional conditions to which the parties agree.

   - Exception: Requests by the law enforcement agencies for assistance from RL requiring an immediate or emergency response shall be made through the on-duty Hanford Patrol Shift Commander.

B. Requests for assistance from the law enforcement agencies shall generally be made by the SES Director, and shall be addressed to affected sheriffs and police chiefs. Each request shall be subject to approval on an individual basis. Assistance provided by the aforementioned law enforcement agencies shall be subject to the provisions of this agreement and any additional conditions to which the parties agree.

   - Exception: In the event of a Hanford Site security emergency, the on-duty Hanford Patrol Shift Commander shall request assistance from the aforementioned law enforcement agencies via the South East Communications Center (SECOM).
   - These requests will be in accordance with specific RL response plans and will comply to the extent possible, with the polices and/or guidelines of the enforcement agencies and may include:

     - Support on the Hanford Site with personnel and/or equipment;
     - Support for fresh pursuit either on or beyond the Hanford Site for the purposes of preventing the escape or effecting the detainment of any person who commits a misdemeanor or felony or is suspected of having committed a misdemeanor or felony on the Hanford Site. Such support may include:

       (a) Establishing road blocks at requested locations at the outer perimeter of the Hanford Site if possible and safe;
       (b) Deployment of spike strips;
       (c) Secondary pursuit support to Hanford Patrol units; and
       (d) Other assistance as determined at the time of need.

C. If the assistance provided by any of the parties includes providing personnel, such personnel may operate under the general direction of, but shall not be deemed to be an employee of, the

receiving parties.

D. RL may at its option provide any assistance requested through one or more of its Hanford on-site operating contractors.

ARTICLE III – Termination

This agreement shall commence on the date(s) indicated in ARTICLE V, and is intended to be of indefinite duration. This agreement or any activity there under may be terminated upon 30 days written notice by either party to the other party. Notwithstanding the above, the parties agree to exercise their best efforts to avoid terminating any individual activity in order to support the ability of each party to fulfill its mission This agreement may be amended in writing at any time by agreement of the undersigned parties.

ARTICLE IV – Compensation
Except as otherwise agreed in individual cases, no compensation shall be paid by the DOE or by the law enforcement agencies for assistance rendered pursuant to this agreement.

ARTICLE V – Effect of this MOU

This MOU is neither a fiscal nor a funds obligation document.

This agreement is strictly for internal management purposes for each of the parties. It is not legally enforceable and shall not be construed to create any legal obligation on the part of any of the parties. This agreement shall not be construed to provide a private right or cause of action for or by any person or entity.

All agreements herein are subject to, and will be carried out in compliance with, all Federal applicable laws, regulations and other legal requirements.

ARTICLE VI – Disclaimer of Warrantees

Neither the DOE nor the aforementioned law enforcement agencies make any representations or warranty as to the physical condition or usefulness of any equipment, information, or other assistance exchanged under this agreement or the fitness for any particular purpose to which any such equipment, information, or other assistance may be put by the recipient.

ARTICLE VII – Loss or Damage to Property or Equipment

Property and equipment, which may be loaned by one party to the other under this agreement, shall be returned in as good condition as when it was received by the using party, reasonable wear and tear accepted. The using party agrees to reimburse the lending party for any loss or damage of any nature to the property or equipment that is caused by or arises from activities of the user.

ARTICLE VIII – Agreement

The sheriffs and police chiefs of the aforementioned law enforcement agencies shall not assign this agreement or any interest therein or any claim there under, except as expressly authorized in writing by DOE.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the dates indicated below (a separate signature/approval page is provided for each agency).

APPROVED:

Adams County Sheriff

By: Doug Barger, Sheriff

Date: 04-07-09

Richland Operations Office
Security and Emergency Services Division

By: Gary S. Loiacono, Director

Date: 3/30/09

RECEIVED
APR 10 2009
DOE-RLCC

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the dates indicated below (a separate signature/approval page is provided for each agency).

APPROVED:

Benton County Sheriff

By: Larry Taylor, Sheriff

4-3-09
Date

Richland Operations Office
Office of Security and Emergency Services

By: Gary S. Loiacono, Director

3/30/09
Date

RECEIVED
APR 07 2009
DOE-RLCC

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the dates indicated below (a separate signature/approval page is provided for each agency).

APPROVED:

Franklin County Sheriff

By: Richard Lathim, Sheriff

Date: 4/7/09

Richland Operations Office
Security and Emergency Services Division

By: Gary S. Loiacono, Director

Date: 3/30/09

RECEIVED
APR - 9 2009
DOE-RLCC

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the dates indicated below (a separate signature/approval page is provided for each agency).

APPROVED:

Grant County Sheriff Office

Frank DeTrolio — 4-6-09

By: Sheriff Frank T. DeTrolio — Date:

Richland Operations Office
Security and Emergency Services Division

G. S. Loiacono — 3/30/09

By: Gary S. Loiacono, Director — Date:

RECEIVED
APR - 8 2009
DOE-RLCC

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the dates indicated below (a separate signature/approval page is provided for each agency).

APPROVED:

Yakima County Sheriff

By: Ken Irwin, Sheriff

Date: 4-7-09

Richland Operations Office
Security and Emergency Services Division

By: Gary S. Loiacono, Director

Date: 3/30/09

RECEIVED
APR 10 2009
DOE-RLCC

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the dates indicated below (a separate signature/approval page is provided for each agency).

APPROVED:

Kennewick Police Department

By: Ken Hohenberg, Chief

Date: 04/27/09

Richland Operations Office
Security and Emergency Services Division

By: Gary S. Loiacono, Director

Date: 3/20/09

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the dates indicated below (a separate signature/approval page is provided for each agency).

APPROVED:

Pasco Police Department

Denis Austin

By: Denis Austin, Chief

4-3-09

Date:

Richland Operations Office
Security and Emergency Services Division

G. S. Loiacono

By: Gary S. Loiacono, Director

3/30/09

Date:

RECEIVED
APR 07 2009
DOE-RLCC

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the dates indicated below (a separate signature/approval page is provided for each agency).

APPROVED:

Richland Police Department

By: Tony Corsi, Chief

Date: 04 02 09

Richland Operations Office
Security and Emergency Services Division

By: Gary S. Loiacono, Director

Date: 3/30/09

RECEIVED
R 07 2009
OE-RLCC

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the dates indicated below (a separate signature/approval page is provided for each agency).

APPROVED:

West Richland Police Department

By: ~~Mark Panther~~, Chief
Layne Erdman

Date: 4-2-09

Richland Operations Office
Security and Emergency Services Division

By: Gary S. Loiacono, Director

Date: 3/30/09

RECEIVED
APR - 8 2009
DOE-RLCC

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the dates indicated below (a separate signature/approval page is provided for each agency).

APPROVED:

Washington State Patrol

By: John R. Batiste, Chief

4.29.09
Date:

Richland Operations Office
Security and Emergency Services Division

By: Gary S. Loiacono, Director

3/30/09
Date:

APPROVED AS TO FORM

ASSISTANT ATTORNEY GENERAL

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MEMORANDUM OF UNDERSTANDING FOR MUTUAL LAW ENFORCEMENT ASSISTANCE (July 2, 2009)

This Memorandum of Understanding (MOU) is entered into between the U.S. Department of Energy (DOE), Richland Operations Office (RL), Security and Emergency Services Division (SES), and the U.S. Fish and Wildlife Service (FWS), Region 1, Office of Refuge Law Enforcement (ORLE) and Mid-Columbia River National Wildlife Refuge Complex (NWRC), for mutual law enforcement assistance on the Hanford Site and the Hanford Reach National Monument.

RECITALS

1. The RL protective forces (Hanford Patrol) exercise law enforcement authority and maintain security on the Hanford Site as federal officers authorized to carry firearms and make arrests pursuant to Section 161(k) of the Atomic Energy Act of 1954, as amended (42 U.S.C. § 2201(k»).

2. This agreement is entered into by both agencies pursuant to the Economy Act, 31 U.S.C. § 1535, by the DOE pursuant to the authority of the Atomic Energy Act of 1954, 42 U.S.C. § 7256, as amended, and DOE Manual 470.4.3, and by the FWS pursuant to the authority of the Fish & Wildlife Act of 1956, 16 U.S.C. § 742 and the Fish & Wildlife Coordination Act, 16 U.S.C. §§ 661 through 667, and will be reviewed annually.

3. The Region 1, Chief ORLE, the Project Leader, Mid-Columbia River NWRC, and the SES Director shall jointly administer this agreement.

4. There shall be no funds or property held or transferred under this agreement.

ARTICLE I - Scope

The general scope of this agreement includes mutual law enforcement assistance, loan of special equipment, and other assistance, which may be identified by the parties from time to time. Specifically, the parties agree as follows:

A. The FWS Region 1 ORLE and Mid-Columbia River NWRC at their discretion and to the extent allowed by law, agree to commit available manpower and other resources to assist RL with security or law enforcement emergencies on the Hanford Site. DOE will provide training and special equipment and materials to facilitate response by FWS officers.

B. RL, at its discretion and to the extent allowed by law, will provide assistance to the FWS in the execution of its law enforcement responsibilities. Assistance may include law enforcement backup assistance on the Hanford Reach National Monument; temporary use of certain property and equipment, including where appropriate and necessary, operators of such equipment; and utilization of facilities (to include, but not be limited to, the Emergency Vehicle Operations Course (EVOC), Firearms Training Facilities, and

secondary Dispatch Services);. RL may, as appropriate, require individual employees of FWS to sign general release and indemnification agreements as a condition of granting approval for use of, or training with, DOE property or facilities (to include but not be limited to EVOC).

ARTICLE II - Request for Assistance

A. Requests for assistance from RL shall generally be made by the Region 1 Chief ORLE, Project Leader Mid-Columbia River NWRC or their official designees and shall be addressed to the SES Director. Each request shall be subject to approval on an individual basis. Upon approval, the requested assistance will be provided, subject to the provisions of this agreement and any additional conditions to which the parties agree.

   ~ Exception: Requests by the FWS for assistance from RL requiring an immediate or emergency response shall be made through the on-duty Hanford Patrol Shift Commander.

B. Requests for assistance from the FWS shall generally be made by the SES Director, and shall be addressed to the Region 1 Chief ORLE or Project Leader Mid-Columbia River NWRC. Each request shall be subject to approval on an individual basis. Assistance provided by the aforementioned law enforcement agencies shall be subject to the provisions of this agreement and any additional conditions to which the parties agree.

   ~ Exception: In the event of a Hanford Site security emergency, the on-duty Hanford Patrol Shift Commander shall request assistance from the FWS North Columbia Basin Zone Officer, or nearest available FWS Officer via the South East Communications Center (SECOM) or Washington State Patrol Dispatch. These requests will be in accordance with specific RL response plans and will comply, to the extent possible, with the policies and/or guidelines of the FWS and may include:

   - Support on the Hanford Site with personnel and/or equipment;
   - Support for fresh pursuit either on or beyond the Hanford Site for the purposes of preventing the escape or effecting the detainment of any person who commits a misdemeanor or felony or is suspected of having committed a misdemeanor or felony on the Hanford Site. Such assistance may include:

     (a) Establishing road blocks at requested locations at the outer perimeter of the Hanford Site if possible and safe;
     (b) Deployment of spike strips;
     (c) Secondary pursuit supports to Hanford Patrol units; and
     (d) other assistance as determined at the time of need.

C. If the assistance provided by any of the parties includes providing personnel, such personnel may operate under the general direction of, but shall not be deemed to be an employee of, the receiving parties.

D. RL may, at its option, provide any assistance requested pursuant to this MOU through one or more of its Hanford on-site operating contractors.

ARTICLE III - Termination

This agreement shall commence on the date(s) indicated in ARTICLE V, and is intended to be of indefinite duration. This agreement or any activity there under may be terminated upon 30 days' written notice by either party to the other party. Notwithstanding the above, the parties agree to exercise their best efforts to avoid terminating any individual activity in order to support the ability of each party to fulfill its mission. This agreement may be amended in writing at any time by mutual agreement of the undersigned parties.

ARTICLE IV - Compensation

Except as otherwise agreed in individual cases, no compensation shall be paid by the DOE or by the FWS for assistance rendered pursuant to this agreement.

ARTICLE V - Effect of this MOU

1. This MOU is neither a fiscal nor a funds obligation document.

2. This Agreement is strictly for internal management purposes for each of the Parties. It is not legally enforceable and shall not be construed to create any legal obligation on the part of any of the Parties. This Agreement shall not be construed to provide a private right or cause of action for or by any person or entity.

3. All agreements herein are subject to, and will be carried out in compliance with, all Federal applicable laws, regulations, policies and other legal requirements.

ARTICLE VI – Agreement

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the dates indicated below (a separate signature/approval page is provided for each agency).

APPROVED:

Region 1, Office of Refuge Law Enforcement

7/15/09

By: Jon Storey, Chief / Date

Project Leader, Mid-Columbia River NWRC

7/16/09

By: Greg Hughes, Project Leader / Date

DOE Richland Operations Office
Security and Emergency Services Division

7/28/09

By: Gary S. Loiacono, Acting Director / Date

MEMORANDUM OF UNDERSTANDING FOR LAW ENFORCEMENT ASSISTANCE

This Memorandum of Understanding (MOU) is between the U.S. Department of Energy (DOE), Richland Operations Office (RL), Security and Emergency Services Division (SES), and the Washington Department of Fish and Wildlife (WDFW) Enforcement Program.

RECITALS

1. The RL protective forces (Hanford Patrol) exercise law enforcement authority and maintain security on the Hanford Site as federal officers authorized to carry firearms and make arrests pursuant to Section 161(k) of the Atomic Energy Act of 1954 (42 U.S.C. § 2201(k)), as amended.
2. WDFW Fish and Wildlife Officers (FWOs) are general authority law enforcement officers for Washington State, who routinely enforce all State laws pursuant to RCW 10.93 and 77.15.075.
3. This agreement is pursuant to the authority of the Atomic Energy Act of 1954, as amended, and RCW 10.93.130, which provides for mutual law enforcement assistance in Washington.
4. The Chief of the WDFW Enforcement Program and the SES Director shall jointly administer this agreement.
5. There shall be no funds transferred or held under this agreement.

ARTICLE I – Scope

The general scope of this agreement includes mutual law enforcement assistance, loan of equipment, and other assistance, which may be identified by the parties from time to time. Specifically, the parties agree as follows:

A. The Chief of the WDFW Enforcement Program, at his or her discretion and to the extent allowed by law, agrees to commit available manpower and other resources to assist RL in dealing with security or law enforcement emergencies on the Hanford Site. DOE will provide training and special equipment and materials to facilitate the response by WDFW.

   Additionally, while conducting routine boat patrols on the Hanford Reach of the Columbia River, FWOs will enforce trespass and other laws on the federal lands adjacent to the river, particularly in the area from the Vernita Bridge to the Bonneville Power Administration powerlines.

B. WDFW may loan road-worthy, used vehicles to the HAMMER Training Facility for use on the Emergency Vehicle Operations Course (EVOC). With prior coordination with HAMMER scheduling personnel, WDFW staff may use these vehicles on the HAMMER EVOC

C. RL will assist WDFW in its law enforcement responsibilities. Assistance may include temporary use of certain property and equipment (which may include individuals to operate such equipment), utilization of facilities (including, but not limited to EVOC and firearms ranges), and other forms of assistance. RL may require individual WDFW staff to sign

general release and indemnification agreements, as a condition of granting approval for use of, or training with or in, U.S. government property or facilities.

ARTICLE II – Routine Requests for Assistance

A. The WDFW Chief of Enforcement or designee shall submit routine requests for assistance from RL to the SES Director. Each request shall be subject to approval on an individual basis. RL may, at its option, provide requested assistance through one or more of its Hanford on-site operating contractors. Assistance provided by RL shall be subject to the provisions of this agreement and any additional conditions to which the parties agree.

B. The SES Director or designee shall submit routine requests for assistance from WDFW to the Chief of Enforcement. Each request shall be subject to approval on an individual basis. Assistance provided by WDFW shall be subject to the provisions of this agreement and any additional conditions to which the parties agree.

ARTICLE III – Emergency Requests for Assistance

A. During a Hanford Site security emergency, the on-duty Hanford Patrol Shift Commander may request assistance from WDFW by contacting Washington State Patrol Communications in Kennewick or FWOs directly via radio or cell phone. WDFW may provide support on the Hanford Site with personnel and/or equipment, secondary pursuit support to Hanford Patrol units, and other law enforcement assistance as determined at the time of need.

B. In an emergency on or adjacent to the Hanford Site, WDFW FWOs may request assistance from the on-duty Hanford Patrol Shift Commander by radio or cell phone. Hanford Patrol may provide emergency support to FWOs on the Hanford Site and other law enforcement assistance as determined at the time of need.

C. The law enforcement officers providing emergency assistance may operate under the general direction of, but shall not be deemed to be an employee of, the receiving parties.

ARTICLE IV– Duration and Termination

This agreement shall commence on the date indicated in ARTICLE IX for an indefinite duration. This agreement or any activity thereunder may be terminated upon 30 days written notice by either party to the other party. The parties agree to attempt to avoid terminating any individual activity in order to support the ability of each party to fulfill its mission. This agreement may be amended in writing at any time by agreement of the parties.

ARTICLE V – Waiver of Claims

A. Except as otherwise provided in ARTICLE VIII, the United States of America, by and through DOE, for the sole consideration of any benefits derived from this agreement, hereby waives, relinquishes, remises, releases and forever discharges the Washington Department of Fish and Wildlife from any and all claims, actions, causes of actions, demands, rights, damages, costs, loss of service, expenses, and compensation whatsoever, which the

undersigned now has/have or which may hereafter accrue on account of or in any way growing out of any and all known and unknown, foreseen and unforeseen bodily and personal injuries and property damage and the consequences thereof, resulting or to result in consequence of assistance rendered or activity conducted by WDFW under this agreement or resulting or to result in consequences of use of WDFW property.

B. Except as otherwise provided in ARTICLE VIII, Washington State, by and through WDFW, for the sole consideration of any benefits derived from this agreement, hereby waives, relinquishes, remises, release and forever discharges DOE, its officers, contractors, and employees from any and all claims, actions, cause of actions, demands, rights, damages, costs, loss of service, expenses, and compensation whatsoever, which the undersigned now has/have or which may hereafter accrue on account of or in any way growing out of any and all known and unknown, foreseen and unforeseen bodily and personal injuries and property damage and the consequences thereof, resulting or to result in consequence of assistance rendered or activity conducted by the aforementioned law enforcement agencies under this agreement, or resulting or to result in consequences of use of DOE property or facilities.

ARTICLE VI – Payment

Except as otherwise agreed by the parties in individual cases, no compensation shall be paid by the DOE or the WDFW for law enforcement assistance rendered pursuant to this agreement.

ARTICLE VII – Disclaimer of Warrantees

Either the DOE nor WDFW make any representations or warranty as to the physical condition or usefulness of any equipment, information, or other assistance exchanged under this agreement or the fitness for any particular purpose to which any such equipment, information, or other assistance may be put by the recipient.

ARTICLE VIII – Loss or Damage to Property or Equipment

The parties may loan property or equipment to one another. The property or equipment should be returned to the lender in the same general condition as it was when borrowed. Should the borrowed property or equipment be lost or damaged, the borrowing party shall repair, replace or pay the cost of replacing the item to the lending party. The parties may, however, agree to an alternative arrangement, such as rendering services in exchange for the lost or damaged equipment or providing alternative property or equipment.

ARTICLE IX – Agreement

A. This MOU is neither a fiscal nor a funds obligation document.

B. This Agreement is strictly for internal management purposes for each of the Parties. It is not legally enforceable and shall not be construed to create any legal obligation on the part of any of the Parties. This Agreement shall not be construed to provide a private right or cause of action for or by any person or entity.

C. All agreements herein are subject to, and will be carried out in compliance with, all Federal applicable laws, regulations and other legal requirements.

D. WDFW shall not assign this agreement or any interest therein or any claim thereunder, except as expressly authorized in writing by DOE.

IN WITNESS WHEREOF, the parties have executed this agreement as of the dates indicated below.

APPROVALS:

For the **Washington Department of Fish and Wildlife**

By: Bruce Bjork, WDFW Chief of Enforcement — Date: 4-16-09

By: William Brooks, *C.P.M.*, WDFW Contracts Officer — Date: APR 15 2009

For **Richland Operations Office**
Security and Emergency Services Division

By: Gary L. Loiacono, Acting Director — Date: 4/28/09

Hanford Facility RCRA Permit Modification Notification Forms

Part III, Operating Unit 16

400 Area Waste Management Unit

Index

Page 2 of 3 Hanford Facility RCRA Permit III.16 Conditions

Page 3 of 3 Addendum C, Sections C.1.1 and C.1.1.1

Submitted by Co-Operator: 12/27/12 Date

Reviewed by RL Program Office: 11.20.12 Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
400 Area Waste Management	**Part III, Operating Unit 16**

Description of Modification:

Hanford Facility RCRA Permit III.16:

PART III, OPERATING UNIT GROUP 16 PERMIT CONDITIONS
400 Area Waste Management Unit

UNIT DESCRIPTION:

The 400 Area Waste Management Unit (WMU) is in the Property Protected Area (PPA) at the Fast Flux Test Facility (FFTF), in Hanford's 400 Area. The 400 Area WMU consists of two container storage units:

- Fuel Storage Facility (FSF, Building 403). The FSF is a large steel-frame, metal-sided, high bay building. Its dimensions are 34 x 27 x 12 meters (112 x 90 x 40 feet). The container storage unit is on the ground-level floor. In it are two large steel boxes that store sodium-contaminated core component pots (CCPs). The Permittees do not plan to store more mixed waste than is currently stored in the facility; however, the FSF is physically capable of storing additional mixed waste. They will store any additional wastes at the 400 Area WMU in the Interim Storage Area.
- Interim Storage Area, 4718 (ISA). The ISA consists of 156 x 247 meters (513 x 247 feet) totally fenced area. This area is for aboveground dry cask storage of spent fuel. A concrete pad in the ISA, which measures 27 x 37 meters (90 x 120 feet), was used for dry cask storage, but will not necessarily be used for mixed waste management. The rest of the ISA surface is gravel. The ISA is generally flat. However, it is graded to drain in accordance with the general drainage plan for the FFTF PPA. Inside the ISA, there is also one building along the west fence line, and open on the side. This building, Building 432A, is not authorized for mixed waste management.

The scale map in Addendum A shows the location of each storage unit. The only mixed waste stored in these two container storage units is elemental sodium, and sodium potassium (D001, D003, and WSC2), sodium hydroxide (D002), and potassium hydroxide (D002) and debris (e.g., piping, equipment, and components) contaminated with elemental sodium, sodium potassium, sodium hydroxide, and potassium hydroxide. The 400 Area WMU will not store, treat, or dispose of bulk metallic sodium or bulk sodium hydroxide.

LIST OF ADDENDA SPECIFIC TO OPERATING UNIT GROUP 16

Addendum A	Part A Form, dated June 30, 2012
Addendum B	Waste Analysis Plan, dated June 30, 2012
Addendum C	Process Information, dated ~~June 30~~December 31, 2012
Addendum D	Groundwater Monitoring – Reserved
Addendum E	Security Requirements, dated June 30, 2009
Addendum F	Preparedness and Prevention, dated September 30, 2012
Addendum G	Personnel Training, dated September 30, 2012
Addendum H	Closure Plan, dated June 30, 2009
Addendum I	Inspection Requirements, dated September 30, 2009
Addendum J	Contingency Plan, dated December 31, 2011

WAC 173-303-830 Modification Class [1] [2]	Class 1	Class [1]1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1

Enter wording of WAC 173-303-830, Appendix I Modification citation:

Administrative and informational changes.

Modification Approved: ☒ Yes ☐ No (state reason for denial)

Reason for denial:

Reviewed by Ecology:

E R Skinnarland 11/19/12

E R. Skinnarland Date

[1] Class 1 modifications requiring prior Agency approval.

[2] If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class [1]1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
400 Area Waste Management	**Part III, Operating Unit 16**

Description of Modification:
Addendum C, Sections C.1.1 and C.1.1.1:

C.1.1 Description of Containers

All mixed waste stored at the 400 Area WMU is packaged in containers. The specific size and type of container is dictated by the size, shape, or form of the waste. Containers generally consist of:

- Standard metal containers [e.g., 208-liter (55-gallon) drums]
- Large metal boxes [e.g., 1.2 meters by 1.2 meters by 2.4 meters (4 feet by 4 feet by 8 feet), 2.7 meters by 2.7 meters by 3.7 meters (9 feet by 9 feet by 12 feet), 4.9 meters by 2.7 meters by 2.9 meters (14.8 feet by 8 feet by 8.8 feet] fabricated to accommodate the size and shape of a particular component or piece of debris
- Unique components removed from FFTF that, when closed in accordance with WAC 173-303-630(5)(a), can serve as a primary container (e.g., large pumps, valves, tube bundles, cold traps)

Specific debris or components removed from FFTF may .....

C.1.1.1 Description of Containers in the FSF (Building 403)

The Core Component Pots (CPPs), cylindrical containers previously used to hold assemblies and other components are stored in FSF (Building 403) in two large metal boxes. ~~Each box measures 1.78 meters by 2.29 meters by 3.56 meters (5.84 feet by 7.51 feet by 11.68 feet).~~ The box serves as the primary container for the residual sodium inside the CCPs. Each CCP has been emptied of sodium to the extent practicable, but a maximum of 14 liters (3.7 gallons) of radiologically contaminated sodium remains in each CCP.

The volume of actual sodium in each box is estimated to be less than 757 liters (200 gallons). Each box lid is closed with an elastomer gasket and bolted flange closures. An inert gas (argon or nitrogen) cover is maintained on storage of each box to prevent contact of the metallic sodium with the water vapor in the air. Shielding is provided for worker protection and to meet as low as reasonably achievable (ALARA) requirements.

WAC 173-303-830 Modification Class [1 2]	Class 1	Class [1]1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1
Enter wording of WAC 173-303-830, Appendix I Modification citation: Administrative and information changes. The boxes at the FSF were recently measured, and permit language is being corrected to state the dimension of the containers at the FSF. Information is being updated in C.1.1.

The boxes are the primary containers. There is no change in container management. There is no change in container storage capacity at the unit. There is no change to protection of human health and the environment.

Modification Approved: [X] Yes [ ] No (state reason for denial) Reason for denial:	Reviewed by Ecology: E R Skinnarland 11/14/12 E R. Skinnarland Date

[1] Class 1 modifications requiring prior Agency approval.

[2] If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class [1]1, if appropriate.

Remove and Replace the Following Sections:

Remove Part III Permit Conditions, dated September 30, 2012, and replace with Permit Conditions, dated December 31, 2012.

Remove Addendum C, dated June 30, 2012, and replace with Addendum C, dated December 31, 2012.

PART III, OPERATING UNIT GROUP 16 PERMIT CONDITIONS

400 Area Waste Management Unit

UNIT DESCRIPTION:

The 400 Area Waste Management Unit (WMU) is in the Property Protected Area (PPA) at the Fast Flux Test Facility (FFTF), in Hanford's 400 Area. The 400 Area WMU consists of two container storage units:

- Fuel Storage Facility (FSF, Building 403). The FSF is a large steel-frame, metal-sided, high bay building. Its dimensions are 34 x 27 x 12 meters (112 x 90 x 40 feet). The container storage unit is on the ground-level floor. In it are two large steel boxes that store sodium-contaminated core component pots (CCPs). The Permittees do not plan to store more mixed waste than is currently stored in the facility; however, the FSF is physically capable of storing additional mixed waste. They will store any additional wastes at the 400 Area WMU in the Interim Storage Area.
- Interim Storage Area, 4718 (ISA). The ISA consists of 156 x 247 meters (513 x 247 feet) totally fenced area. This area is for aboveground dry cask storage of spent fuel. A concrete pad in the ISA, which measures 27 x 37 meters (90 x 120 feet), was used for dry cask storage, but will not necessarily be used for mixed waste management. The rest of the ISA surface is gravel. The ISA is generally flat. However, it is graded to drain in accordance with the general drainage plan for the FFTF PPA. Inside the ISA, there is also one building along the west fence line, and open on the side. This building, Building 432A, is not authorized for mixed waste management.

The scale map in Addendum A shows the location of each storage unit. The only mixed waste stored in these two container storage units is elemental sodium, and sodium potassium (D001, D003, and WSC2), sodium hydroxide (D002), and potassium hydroxide (D002) and debris (e.g., piping, equipment, and components) contaminated with elemental sodium, sodium potassium, sodium hydroxide, and potassium hydroxide. The 400 Area WMU will not store, treat, or dispose of bulk metallic sodium or bulk sodium hydroxide.

LIST OF ADDENDA SPECIFIC TO OPERATING UNIT GROUP 16

Addendum A	Part A Form, dated June 30, 2012
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Addendum H	Closure Plan, dated June 30, 2009
Addendum I	Inspection Requirements, dated September 30, 2009
Addendum J	Contingency Plan, dated December 31, 2011

DEFINITIONS

The term **"CCP" or Core Component Pot** means one of 109 cylindrical containers, each containing 3.75 gallons of un-reacted sodium totaling 405 gallons, currently stored as mixed waste in the FFTF Fuel Storage Facility. The CCPs were previously filled with sodium and used in the FFTF Interim Decay Storage Vessel to store spent FFTF Driver Fuel Assemblies under inert gas.

ACRONYMS

FFTF	Fast Flux Test Facility
CCP	Core Component Pot
PPA	Property Protected Area
ISA	Interim Storage Area
FSF	Fuel Storage Facility
WMU	Waste Management Unit

III.16.A COMPLIANCE WITH UNIT-SPECIFIC PERMIT CONDITIONS

III.16.A.1 The Permittees will comply with all conditions in this Chapter and its addenda with respect to dangerous waste management and dangerous waste management units in the 400 Area WMU, in addition to conditions in Permit Parts I and II.

III.16.B GENERAL WASTE MANAGEMENT

III.16.B.1 The Permittees are authorized to accept, according to the waste acceptance procedure documented in Addendum B, Section B.2, mixed debris generated from demolition and decommissioning of the Fast Flux Test Facility reactor system containing or contaminated with residual elemental sodium and sodium hydroxide. The Permittee will store these wastes in the ISA.

III.16.B.2 The Permittees are authorized to store core component pots generated prior to the effective date of this permit in two large metal boxes in the 400 Area WMU, FSF.

III.16.B.3 The Permittees are authorized store mixed waste in the ISA up to a maximum capacity of 19,000 gallons.

III.16.B.4 The Permittees will maintain the physical structure of dangerous waste management units in the 400 Area WMU as documented in the Unit Description above and Addendum C, Figures C.1 and C.2.

III.16.B.5 The Permittees will maintain appropriate administrative controls and work practices to ensure that only wastes specified in Permit Condition III.16.B.1, are received by the ISA for storage, and that no co-mingling or cross-contamination of the waste stream specified in Permit Condition III.16.B.1 with any other waste stream may occur.

III.16.C WASTE ANALYSIS

III.16.C.1 The Permittees will have an accurate and complete waste profile for the waste stream identified in Permit Condition III.16.B.1. This waste profile will be signed and dated upon approval by the 400 Area WMU authorized representative. [WAC 173-303-380(1)(a)]

III.16.C.2 The Permittees will make a copy of the waste profile required by Permit Condition III.16.C.1 available upon request. [WAC 173-303-815(2)(b)(ii)]

III.16.D RECORDKEEPING AND REPORTING

III.16.D.1 The Permittees will place the following into the Hanford Facility Operating Record, 400 Area WMU File required by Permit Condition II.I.2. [WAC 173-303-380]

III.16.D.2 Records required by WAC 173-303-380(1)(o), incorporated by reference;

III.16.E SECURITY

III.16.E.1 The Permittees will post warning signs at all entrances to the FSF and the ISA specified in Addendum E, Section E.1.1. [WAC 173-303-310(2)(a)]

III.16.F PREPAREDNESS AND PREVENTION

III.16.F.1 The Permittees will comply with the Addendum F, Preparedness and Prevention requirements specific to the 400 Area WMU. [WAC 173-303-340]

III.16.G CONTINGENCY PLAN

III.16.G.1 The Permittees will comply with Addendum J, Contingency Plan in addition to the requirements of Permit Condition II.A when applicable. [WAC 173-303-350]

III.16.H INSPECTIONS

III.16.H.1 The Permittees will perform inspections of the 400 Area WMU according to Addendum I, Inspection Plan for inspecting all monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment that help prevent, detect, or respond to hazards to the public health or the environment pursuant to the requirements of WAC 173-303-320 [WAC 173-303-320(2)]

III.16.I TRAINING PLAN

III.16.I.1 The Permittees will include Addendum G unit-specific training requirements in the written training plan required by Permit Condition II.C. [WAC 173-303-330]

III.16.J OTHER GENERAL REQUIREMENTS

III.16.J.1 The Permittees will comply with the requirements of WAC 173-303-395(1)(a)-(c), incorporated by reference, for prevention of reaction of ignitable, reactive, or incompatible wastes.

III.16.J.2 Land Disposal Restriction Requirements

III.16.J.2.a The Permittees will ensure a schedule of compliance and any applicable associated work requirements are included in the land disposal restrictions report required by the HFFACO Milestone M-26, incorporated by reference by Permit Condition II.O for treatment and/or acquisition of treatment capacity for wastes which are or are expected to be stored in the 400 Area WMU container storage units.

III.16.K CLOSURE

III.16.K.1 The Permittees will close the 400 Area WMU Container Storage Units in accordance with Addendum H, Closure Plan. [WAC 173-303-610(4)]

III.16.L POST CLOSURE

Reserved

III.16.M CRITICAL SYSTEMS

Reserved

III.16.N RESERVED

III.16.O CONTAINERS

III.16.O.1 Container Management Standards

III.16.O.1.a The Permittees will ensure that all containers remain in good condition. If a container holding mixed waste is not in good condition (e.g., severe rusting or corrosion, or apparent structural defects), or if it begins to leak, the Permittee must transfer the waste from the container to a container that is in good condition or place the leaking container in an appropriate over-pack container. [WAC 173-303-630(2)]

III.16.O.1.b The Permittees shall ensure that all containers are constructed of carbon steel or stainless steel, or other materials compatible with metallic sodium and sodium hydroxide. [WAC 173-303-630(4)]

III.16.O.1.c The Permittees must remove spilled or leaked waste within secondary containment pursuant to WAC 173-303-630(7)(a)(ii), incorporated by reference.

III.16.O.1.d Requirements for the Fuel Storage Facility

III.16.O.1.e The Permittee will maintain an inert gas (argon or nitrogen) cover within each large metal box to prevent contact of the metallic sodium with the water vapor in the air and the formation of free liquids.

III.16.O.1.f The Permittees will place large boxes stored in the FSF in drip pans to ensure a base free of cracks or gaps, and ensure that the large boxes are elevated or otherwise protected from contact with accumulated liquids.

III.16.O.1.g Requirements for the Interim Storage Area

III.16.O.1.h The Permittee may store wastes in the ISA in standard metal containers (e.g., 208-liter drums), large metal boxes fabricated to accommodate the size and shape of a particular component or debris, or unique components removed from FFTF that when closed in accordance with WAC 173-303-630(5)(a) serve as a primary container.

III.16.O.1.i The Permittees will manage unique components stored in the ISA on the gravel surface with sufficient open space between components and between components and the fence line to accommodate inspections and movement of equipment.

III.16.O.1.j The Permittees will not place wastes in the open-sided structure (Building 432A) within the ISA identified in the Unit Description above.

Addendum C Process Information

C. PROCESS INFORMATION....C.1

C.1 CONTAINERS....C.1
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C.1.1.1 Description of Containers in the FSF (Building 403)....C.1
C.1.1.2 Description of Containers in the ISA....C.2
C.1.2 Container Management Practices....C.2
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C.1.2.3 Container Labeling....C.4
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C.1.3.1 Secondary Containment System Design and Operation....C.4
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Figure C.2. Container Management Area....C.8

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C. PROCESS INFORMATION

This Addendum discusses the processes used to store (Na) and sodium potassium (NaK)-contaminated waste at the 400 Area WMU. It includes a description of the containers used to store mixed waste at the two waste storage areas, the container management practices, the use of secondary containment systems, and special procedures related to ignitable, reactive, and incompatible wastes.

C.1 CONTAINERS

The following sections provide a description of 400 Area WMU waste containers, their management, their secondary containment, and removal of liquids from secondary containment systems.

C.1.1 Description of Containers

All mixed waste stored at the 400 Area WMU is packaged in containers. The specific size and type of container is dictated by the size, shape, or form of the waste. Containers generally consist of:

- Standard metal containers [e.g., 208-liter (55-gallon) drums]
- Large metal boxes [e.g., 1.2 meters by 1.2 meters by 2.4 meters (4 feet by 4 feet by 8 feet), 2.7 meters by 2.7 meters by 3.7 meters (9 feet by 9 feet by 12 feet), 4.9 meters by 2.7 meters by 2.9 meters (14.8 feet by 8 feet by 8.8 feet] fabricated to accommodate the size and shape of a particular component or piece of debris
- Unique components removed from FFTF that, when closed in accordance with WAC 173-303-630(5)(a), can serve as a primary container (e.g., large pumps, valves, tube bundles, cold traps).

Specific debris or components removed from FFTF may require the design and fabrication of additional boxes and, in some cases, containers smaller than 208-liter (55-gallon) may be appropriate for the waste type. The remainder of this Addendum describes storage of Na and NaK-contaminated waste in standard metal containers [e.g., 208-liter (55-gallon) drums], large metal boxes, and unique components. Metallic containers (either carbon steel or stainless steel) are compatible with Na and NaK for storage.

Na and NaK-contaminated waste stored at the 400 Area WMU is designated ignitable (D001) and reactive (D003) per WAC 173-303-090(7). In addition to D003, this waste may also exhibit the characteristics of corrosivity from generation of small quantities of sodium hydroxide or potassium hydroxide due to the reaction of waste residuals with atmospheric moisture. Therefore, waste managed in the FSF and the ISA are also designated as D002 (corrosive liquids) and WSC2 (corrosive solid).

The quantity of the NaK stored in the ISA is estimated to be 0.8 liters (28 fluid ounces). The NaK is contained within debris stored in the ISA containers.

The sodium in the CCPs stored in the FSF have approximately 0.02 volume percent potassium due to the mixing of NaK into the Na. This small quantity would represent an impurity or trace amount and would not affect the chemical properties of the Na in the CCPs.

The 400 Area WMU consists of two container storage dangerous waste management units: the FSF (Building 403) and the ISA. The ISA is an outdoor storage area with a concrete pad and a gravel-surface pad. Refer to the map in Addendum A, Part A Form, and Figures C.1 and C.2 in this Addendum for locations of these storage sites within the FFTF PPA. A combined maximum of 75,686 liters (20,000 gallons, 1,000 gallons in the FSF and 19,000 gallons in the ISA) of the Na or NaK contaminant could potentially be stored in the two 400 Area WMU container storage units.

C.1.1.1 Description of Containers in the FSF (Building 403)

The Core Component Pots (CPPs), cylindrical containers previously used to hold assemblies and other components are stored in FSF (Building 403) in two large metal boxes. The box serves as the primary container for the residual sodium inside the CCPs. Each CCP has been emptied of sodium to the extent

practicable, but a maximum of 14 liters (3.7 gallons) of radiologically contaminated sodium remains in each CCP.

The volume of actual sodium in each box is estimated to be less than 757 liters (200 gallons). Each box lid is closed with an elastomer gasket and bolted flange closures. An inert gas (argon or nitrogen) cover is maintained on storage of each box to prevent contact of the metallic sodium with the water vapor in the air. Shielding is provided for worker protection and to meet as low as reasonably achievable (ALARA) requirements.

C.1.1.2 Description of Containers in the ISA

The ISA is an outdoor storage area, which includes a concrete pad and an additional area of open level ground. The three types of containers anticipated to be stored in the ISA are the standard metal containers, large metal boxes, and unique components described in Sections C.1.1.2.1 through C.1.1.2.3 respectively.

C.1.1.2.1 Storage of Standard Metal Containers in the ISA

The standard metal containers stored in the ISA are contained in container storage modules, specifically configured for the storage of reactive, ignitable, and corrosive waste. Each module is totally enclosed to protect the containers from the weather. The modules are placed directly onto the gravel pad and anchored by conventional methods (e.g., screw anchor or conventional dead man).

C.1.1.2.2 Storage of Large Metal Boxes in the ISA

Large metal boxes can be stored in the ISA. Waste placed in the large metal boxes will not be amenable for storage in standard metal containers, but does not require development of a unique package. Large metal boxes are commercially available and will be placed within secondary containment in the ISA.

C.1.1.2.3 Storage of Unique Components in the ISA

Unique components can be stored in the ISA. Unique components are anticipated to be removed as intact units, except for severed inlet and outlet piping. The inlets and outlets are closed as part of the removal process to prevent any residual Na or NaK inside the component from reacting with water vapor in the air to form sodium hydroxide and potassium hydroxide, respectively. Each component, once closed, serves as the primary container for the sodium waste residue on the interior surfaces of the component.

C.1.2 Container Management Practices

During the container receipt inspection, any discrepancies that have been noted are resolved in accordance with Addendum B, Waste Analysis Plan. Appropriate labels are applied to the containers before acceptance at any of the two waste storage locations in the 400 Area WMU to meet the requirements of WAC 173-303-630(3) and WAC 173-303-395(6). The container packaging and container handling are designed to maintain containment of the waste, maintain damage-free and contamination-free containers, limit storage intrusion, and limit human exposure to mixed waste.

The subsections below describe the container management practices for the FSF and the ISA.

C.1.2.1 Container Management Practices for the FSF

The FSF is a steel-framed, metal-sided, one-story building that is erected on a reinforced concrete substructure. It has no electrical service, lighting, ventilation, and water services. The reinforced concrete floor has a load rating of approximately 0.49 kilograms per square centimeter (1,000 pounds per square foot). The loaded weight of each storage container is approximately 8,256 kilograms (18,200 pounds), which provides a floor load factor of safety of approximately four (Figure C.1).

The drip pan is placed on the floor and the large metal box is placed onto the drip pan. A forklift/rigging packet is provided as an integral part of the base of each metal box. Lifting slings are also available on each box and the overhead bridge crane can be used to lift and position the box.

Sodium is stored at room temperature under an inert gas blanket to protect sodium from reaction with air.

Shielding is provided for worker protection and to meet ALARA requirements. Containers are inspected in accordance with Addendum I, Inspections Requirements for deterioration and leakage using a mirror to view the outer surfaces (sides and top) of the waste boxes. The aisle space requirements of WAC 173-303-630(5)(c) do not apply because there are only two containers. The waste is stored in a manner equivalent to WAC 173-303-630(5)(c) and the International Fire Code as interpreted by the Hanford Fire Department.

C.1.2.2 Container Management Practices for the ISA

The three types of containers identified in Section C.1.1 can be stored at the ISA. This dangerous waste management unit will be in compliance prior to use (Figure C.2). Management practices for these three container types are described in Sections C.1.2.2.1, C.1.2.2.2, and C.1.2.2.3.

C.1.2.2.1 Management of Standard Metal Containers in the ISA

The waste is stored in standard metal containers [e.g., 208-liter (55-gallon) drums], as described in Section C.1.1.2.1. Standard metal containers are placed into the container storage modules by means of a forklift or by manual placement depending on weight of the container and storage configuration.

Container storage modules in the ISA will be placed in a manner equivalent to the International Fire Code as interpreted by the Hanford Fire Department.

Standard metal containers placed into a container module can be stored four to a pallet, and multiple pallets will constitute a row of containers. Since only one row of pallets can be placed within the container storage modules, there are no aisles between rows, and therefore, the 30-inch aisle spacing requirement of WAC 173-303-630(5)(c) does not apply. Spacing between the pallets and the walls of the container storage module will be maintained to facilitate inspection and emergency response. Standard metal containers can be stacked two high within the container storage modules.

Standard metal containers managed in container storage modules are positioned so labels are visible for inspection. Receipt inspections of the containers are preformed at the time the containers are loaded into the module according to Addendum B, Waste Analysis Plan. Standard metal containers in storage are visually inspected in accordance with Addendum I, Inspection Requirements.

C.1.2.2.2 Management of Large Metal Boxes in the ISA

The waste is stored in large metal boxes as described in Section C.1.1.2.2. Large metal boxes in the ISA are placed in a manner equivalent to the International Fire Code as interpreted by the Hanford Fire Department. Prior to placement of a large metal box in the ISA, a drip pan described in Section C.1.3.2 will be placed at the storage location. The large metal box serves as the primary container. The drip pan used for secondary containment of the large metal box is placed on the ground; the large metal box is placed in the drip pan, and elevated from the base of the drip pan. Each large metal box is handled and positioned in a manner to prevent rupture and container leakage.

Container receipt inspections of large metal boxes are performed at the storage location within the ISA. The large metal boxes in storage are visually inspected in accordance with Addendum I, Inspection Requirements.

C.1.2.2.3 Management of Unique Components in the ISA

Waste is stored as unique components as described in Section C.1.1.2.3. Unique components in the ISA will be placed in a manner equivalent to the International Fire Code as interpreted by the Hanford Fire Department.

Prior to placement of a unique component in the ISA, a drip pan described in Section C.1.3.2 will be placed at the storage location. The unique component serves as the primary container.

The drip pan used for secondary containment of the unique component is placed on the ground. The unique components are placed in the drip pans and elevated from the base of the drip pans. Each unique component is handled and positioned in a manner to prevent rupture and container leakage.

Container receipt inspections of unique components are performed at the storage location within the ISA. The unique components are visually inspected at least weekly while in storage (refer to Addendum I, Inspection Requirements).

C.1.2.3 Container Labeling

Containers are labeled and marked to meet the requirements of WAC 173-303-630(3) and WAC 173-303-395(6).

C.1.3 Secondary Containment Requirements for Storing Containers

The following sections describe secondary containment systems for the 400 Area WMU.

C.1.3.1 Secondary Containment System Design and Operation

The design of secondary containment systems varies depending on the particular dangerous waste management unit and the container type. Design, placement, and operation of each type of secondary containment system are discussed in Sections C.1.3.1.1 and C.1.3.1.2.

C.1.3.1.1 Secondary Containment System Design and Operations for the FSF

Secondary containment requirements in WAC 173-303-630(7) are met for the large metal boxes by placing the waste containers in drip pans. A forklift/rigging packet is provided as an integral part of the base of each metal box and results in elevation of the base of the box approximately 10.2 cm (four inches) above the drip pan keeping the base of the container from contacting any waste that could accumulate in the drip pan. The depth of the drip pan is approximately 8.9 centimeters (3.5 inches).

C.1.3.1.2 Secondary Containment System Design and Operations for the ISA

For each type of container stored within the ISA, secondary containment is provided compliant with WAC 173-303-630(7). The design can include provisions for indoor or outdoor storage. Indoor storage is provided for small metal containers managed in container storage modules. The container storage modules will be procured to be compliant with WAC 173-303-630(7). Outdoor storage is provided for large metal containers and unique components. A forklift/rigging packet is provided as an integral part of each secondary containment drip pan for outdoor storage. Outdoor containers are elevated in the drip pan keeping the base of the container from contacting any waste or liquids that could accumulate in the drip pan. Capacity will be designed on a case-by-case basis in accordance with Section C.1.3.2.

C.1.3.2 Secondary Containment System Capacity

Each secondary containment system is designed to provide a base underlying the boxes, containers, or components that is free of cracks or gaps and is sufficiently impervious (WAC 173-303-630(7)(a)(i)). For outdoor storage, the capacity of the containment (e.g., drip pan) will also meet the 25-year 24-hour storm value of 3.35 centimeters (1.32 inches) (WAC 173-303-630(7)(a)). In rare cases, when a container can contain free liquids, the drip pan will also be designed to meet the requirements of WAC 173-303-630(7)(a)(iii). Since sodium melts at 98 degrees C, an event causing liquid sodium to be released into the secondary containment is extremely unlikely. Although, NaK is typically liquid at ambient conditions, most if not all NaK will have been drained from contaminated debris and components. Spills or leaks of liquid NaK into secondary containment will be negligible and unlikely to pose any human health or environment threats. Since run-on is prevented as described in Section C.1.3.3, additional capacity is not required for run-on.

C.1.3.3 Control of Run-On

There is not a credible pathway, through which run-on can come into contact with the sodium-contaminated waste or enter the secondary containment for the waste containers. The contour of the ground and the 400 Area storm water drainage systems around the FSF and the ISA prevents run-on. Waste containers stored at the ISA are stored either on covered drip pans or in weather-tight storage modules. Run-on is prevented in either case.

Refer to Section C.1.4 for a discussion of response to accumulation of water from a known source (e.g., rainwater or snowmelt) in secondary containment.

C.1.4 Removal of Liquids from Secondary Containment System

In the unlikely event of liquid intrusion into the secondary containment system, the following is performed:

- Liquid in the secondary containment system is visually inspected for signs of other materials (e.g., dust, etc.).
- Containers affected are inspected for signs of damage. Damaged containers are repackaged and identified in the 400 Area WMU operating logbook.
- Previous inspection checklists are reviewed to identify any waste releases in the waste storage areas for which remedial actions have not been completed.
- Liquid removed from secondary containment is removed and characterized under the generator provisions of WAC 173-303-200 and is outside the scope of TSD unit operations.
- The 400 Area WMU supervisor signs the operating logbook indicating that the previous steps have been completed and that the secondary containment and/or storage structure(s) are clean.

Records of spills and releases of mixed waste are maintained as part of the 400 Area WMU operating record. For related records maintained elsewhere, both a description and the location of such records are entered into the operating record. These records include, but are not limited to, electronic and/or paper records. These records will be retained in accordance with Permit Condition I.E.10.c. These records will eventually be utilized during closure activities at the 400 Area WMU, as noted in Addendum H, Closure Plan. Additional actions taken in response to a spill or discharge are detailed in the Addendum J, Contingency Plan.

C.2 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, AND INCOMPATIBLE WASTE IN CONTAINERS

Ignitable and reactive waste stored in containers is packaged and managed in the manner described in Sections C.1.1 and C.1.2. The waste stored in the 400 Area WMU is not incompatible with storage container materials of construction or other waste in the storage unit based on the waste codes and generating source documented in Addendum A, Part A Form.

C.2.1 Management of Reactive Waste in Containers

Wastes managed at the FSF and the ISA are designated as reactive solely with respect to the requirements of WAC 173-303-090(7)(a)(ii) and (iii). Management of these wastes as documented in this Addendum provide appropriate protection from contact with water and the risk of generation of potentially explosive hydrogen gas. The reactive designation for waste identified in the Addendum A, Part A Form, is not based on WAC 173-303-090(7)(a)(vi), (vii) or (viii), which address explosives and materials that can be detonated. Therefore, no specific management requirements are necessary with respect to the potential for explosion or detonation.

C.2.2 Management of Ignitable and Reactive Waste in Containers

Waste storage limits and spacing requirements are equivalent to those specified in the International Fire Code as interpreted by the Hanford Fire Department demonstrating compliance with the requirements of WAC 173-303-395(1).

A qualified staff member will inspect the areas storing mixed waste annually as specified in WAC 173-303-395(1)(d). This inspection will be performed in the presence of a professional person who is familiar with the International Fire Code.

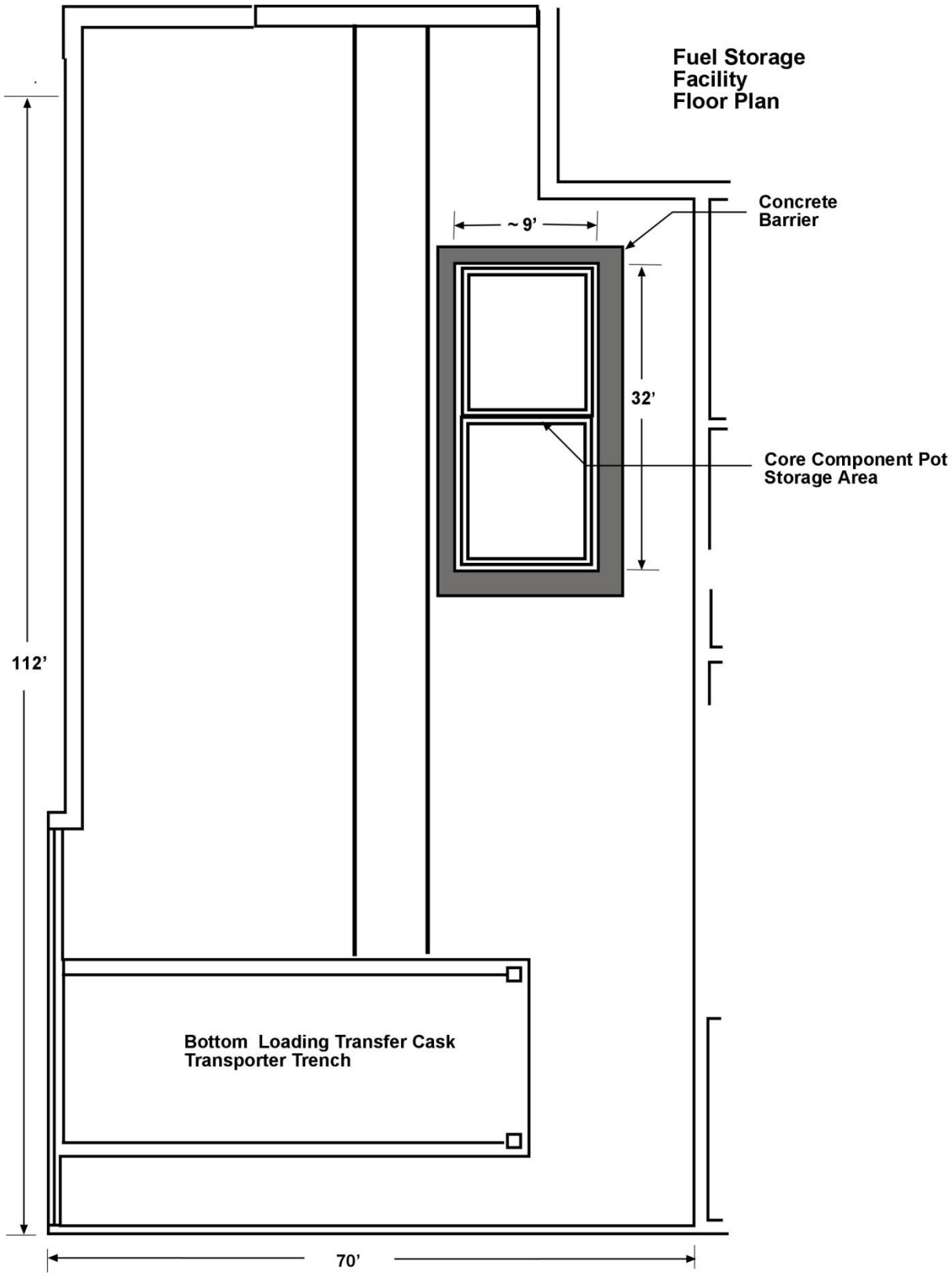
C.2.3 Design of Areas to Manage Incompatible Wastes

Only waste as documented in Addendum B Waste Analysis Plan will be stored in the 400 Area WMU.

C.3 AIR EMISSIONS CONTROL

Air emission requirements of WAC 173-303-690 through WAC 173-303-691 do not apply to mixed waste stored at the 400 Area WMU. The air emission standards of WAC 173-303-692 (Subpart CC) apply to tank, surface impoundment, and container storage units. However, since containers that are used solely for management of mixed waste are exempt, all containers in the FSF and the ISA are exempt from the requirements of WAC 173-303-692.

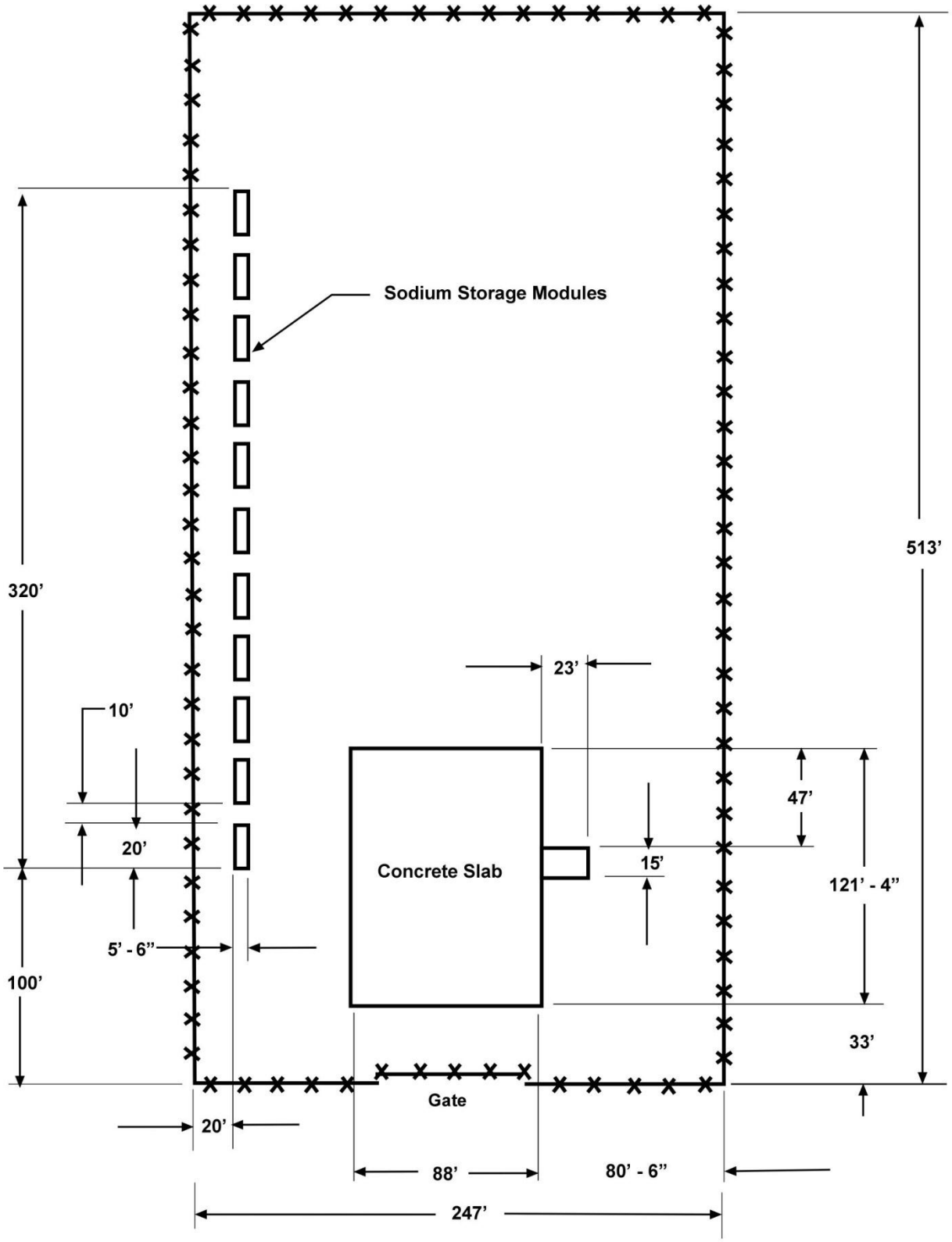
Figure C.1. Fuel Storage Facility



Not to scale.

M0704-1.2
R1 4-13-07

Figure C.2. Container Management Area



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R1 4-16-07

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Hanford Facility RCRA Permit Modification Notification Forms

Part III, Operating Unit 11

Integrated Disposal Facility

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Submitted by Co-Operator: R. Ty Blackford 12/17/12
Date

Reviewed by RL Program Office: J. A. Dowell 12.20.12
Date

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **Integrated Disposal Facility**	Permit Part **Part III, Operating Unit 11**

Description of Modification:
Hanford Facility RCRA Permit III.11:

PART III, OPERATING UNIT 11 UNIT-SPECIFIC CONDITIONS

INTEGRATED DISPOSAL FACILITY

This document sets forth the operating conditions for the Integrated Disposal Facility (IDF).

III.11.A COMPLIANCE WITH APPROVED PERMIT

The Permittees shall comply with all requirements set forth in the Integrated Disposal Facility (IDF) Permit conditions, the Appendices specified in Permit Condition III.11.A and the Amendments specified in Permit Conditions III.11.B through III.11.I. All subsections, figures, and tables included in these portions are enforceable unless stated otherwise:

OPERATING UNIT 11:

Chapter 1.0 Part A Form, dated October 1, 2008

Chapter 3.0 Waste Analysis Plan, dated April 9, 2006

Chapter 4.0 Process Information, dated ~~December 31, 2008~~December 31, 2012

Appendix 4A Design Report (as applicable to critical systems), dated March 31, 2008

Appendix 4B Construction Quality Assurance Plan, dated April 9, 2006

Appendix 4C Response Action Plan, dated April 9, 2006

Appendix 4D Technical specifications document (RPP-18-489 Rev 0), dated December 31, 2006

Chapter 5.0 Ground Water Monitoring, dated June 30, 2010

Chapter 6.0 Procedure to Prevent Hazards dated ~~December 31, 2008~~December 31, 2012

Addendum J.1 Contingency Plan – Pre-Active Life, dated June 30, 2012

Addendum J.2 Contingency Plan – Active Life, dated June 30, 2012

Chapter 8.0 Personnel Training, dated November 21, 2007

Chapter 11.0 Closure and Post Closure Requirements, dated December 31, 2008

General and Standard Hanford Facility RCRA Permit, WA7 89000 8967 (Permit) conditions (Part I and Part II Conditions) applicable to the IDF are identified in Permit Attachment 3 (Permit Applicability Matrix).

WAC 173-303-830 Modification Class [1 2]	Class 1	Class '1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Administrative and informational changes.

Modification Approved: ☐ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology:
	R. R. Skinnarland Date

[1] Class 1 modifications requiring prior Agency approval.

[2] If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class '1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Integrated Disposal Facility	**Part III, Operating Unit 11**

Description of Modification:
Permit Conditions, Section III.11.I.2.a.3:

III.11.I.2.a.3 A description of production processes including management controls and quality assurance/quality control requirements that assure that glass produced for each formulation will perform in a reasonably similar manner to the waste form assumed in the performance assessment for that formulation.

The Permittees shall update the IWTRD consistent with the above requirements for review by Ecology consistent with their respective roles and authority as provided under the TPA. Ecology comments shall be dispositioned through the Review Comment Record (RCR) process and will be reflected in further modeling to modify the IDF ILAW Chapter 3.0, Waste Analysis Plan as appropriate.

The initial IWTRD contained glass formulation data as required by Permit Condition III.11.I.2.a.1, and was submitted on December 18, 2006 (AR Accession # 0906020182). The performance assessment required by Permit Condition III.11.I.2.a.2, and the quality assurance/quality control requirements process required by Permit Condition III.11.I.2.a.3 shall be submitted for Ecology review as soon as possible after issuance of the Final Tank Closure and Waste Management EIS and receipt of underlying codes and data packages, and at least 180 days prior to the date DOE expects to receive waste at IDF. At a minimum, the Permittees shall submit updates to the IWTRD to Ecology ~~every five years or more frequently with the next one due December 31, 2012,~~ if any of the following conditions exist:

- The Permittees submits a permit modification request allowing additional waste forms to be disposed of at IDF,
- The WTP or other vitrification facility change their glass formulations from those previously included in the IWTRD
- An unanticipated event or condition occurs that Ecology determines would warrant an update to the IWTRD.

WAC 173-303-830 Modification Class [1] [2]	Class 1	Class '1	Class 2	Class 3
Please mark the Modification Class:		X		

Enter relevant WAC 173-303-830, Appendix I Modification citation number: WAC 173-303-830(4)(d)
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Request that the modification be reviewed and approved as a Class '1. Permit modification is needed to remove language requiring ITWRD update for new waste streams. This permit modification is requested because IDF does not have a need to accept these waste streams at this time. When DOE identifies a need to accept these wastes, the ITWRD will be updated, as stated in the permit text, at a minimum of 180 days prior to receipt of the waste stream, following discussion with Ecology on content of the update.

Modification Approved: ☐ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology:
	R. R. Skinnarland Date

[1] Class 1 modifications requiring prior Agency approval.

[2] If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class '1, if appropriate.

[1] Class 1 modifications requiring prior Agency approval.

[2] If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **Integrated Disposal Facility**	Permit Part **Part III, Operating Unit 11**

Description of Modification:
Chapter 4.0, Section 4.3.6.1:

4.3.6.1 System Operation and Design

The lined landfill operates in a way that ensures the bottom liner is maintained as dry as possible, and the head on the top liner does not exceed 30.5 centimeters measured above the flat 50-foot-by-50-foot LCRS sump HDPE liner. In extreme conditions (i.e., in excess of a 25-year storm event), the head on the top liner could exceed 30.5 centimeters for short durations. The operating methodology, described in the following paragraphs, ensures that liquids on the bottom liner are removed continuously before liquids could accumulate and exceed 30.5 centimeters for the design storm event.

Both leachate collection systems operate either manually or automatically. When operated automatically, liquid level sensors will cycle the pumps on and off, in response to rising and falling leachate levels. The leakage rate through the top liner will be calculated during Active Life to demonstrate that the leakage rate is less than the 'action leakage rate' (Chapter 6). Data to support the leakage rate calculations during Active Life will be obtained either from the flow totalizer in the secondary leachate collection pump discharge line or from the liquid level gauges. Collected leachate from the secondary leachate collection system is pumped to the leachate collection tank.

The design of the primary and secondary leachate collection systems is described in Section 4.3.3.1. System geometry was completed and material specifications were developed during the detailed design process. The leachate collection and removal system design ~~will~~ comply with WAC 173-303 requirements and applicable guidance.

Each sump has a thick layer of gravel designed to provide high hydraulic conductivity and storage capacity. Leachate is removed from the sumps by a pump installed in sideslope riser pipes. Pressure transducers monitor leachate level in the sumps and provide appropriate signals to the pump control system. All pumps and transducers are removable for maintenance, calibration, and related activities.

WAC 173-303-830 Modification Class [1][2]	Class 1	Class '1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Administrative and information changes. Clarification for pre-active life inspections.

Modification Approved: ☐ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology: R. R. Skinnarland Date

[1] Class 1 modifications requiring prior Agency approval.

[2] If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class '1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Integrated Disposal Facility	**Part III, Operating Unit 11**

Description of Modification:
Chapter 6.0, Section 6.2.3.2.2:

6.2.3.2.2 Leak Detection System

During pre-active life, the leak detection system will be monitored quarterly and after storms (Table 6.2) for the amount of liquid removed. No action leakage rate will be determined during pre-active life.

During Active life (Table 6.3), ~~L~~leak detection for lined trench at the IDF is accomplished by the following:

- Monitoring liquid level above the secondary liner
- Monitoring liquid levels above primary liner
- Inspecting for the presence of liquids after significant precipitation events
- Verifying certain gauges and instruments are in current calibration; calibration is performed annually or more frequently at intervals suggested by the manufacturer (Chapter 4.0, Section 4.3.7.4)
- Recording secondary sump levels on a daily action leakage rate calculation sheet (Figure 6.1).

If the action leakage rate (Chapter 4.0, Appendix 4C) has not been exceeded, the liner system will be functioning properly.

WAC 173-303-830 Modification Class [1] [2]	Class 1	Class [1]1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Administrative and information changes. Clarification for pre-active life inspections.

Modification Approved: ☐ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology: R. R. Skinnarland Date

[1] Class 1 modifications requiring prior Agency approval.

[2] If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class [1]1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Integrated Disposal Facility	**Part III, Operating Unit 11**

Description of Modification:
Chapter 6.0, Section 6.2.3.2.3:

6.2.3.2.3 Wind Dispersal Control System

During pre-active life, berms will be inspected quarterly and after storms to ensure the berms are functioning properly (Table 6.2).

During active life (Table 6.3), ~~W~~waste is inspected on receipt for evidence of damage, corrosion, or deterioration that might lead to dispersal of the contents.

Unpackaged or bulk waste with any potential for wind dispersal is covered or sprayed with fixative after being placed in a trench.

In addition, unpackaged or bulk waste handling operations are suspended in winds exceeding 24 kilometers per hour unless specifically approved by operations supervisors. The supervisor only would grant approval to operate in winds over 24 kilometers per hour after determining that the risk to human health or the environment would be diminished by completing the work activity, or that the nature and form of the waste handling activity was such that the wind speed would have no significant impact.

WAC 173-303-830 Modification Class [1 2]	Class 1	Class [1]1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Administrative and information changes. Clarification for pre-active life inspections.

Modification Approved: ☐ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology: R. R. Skinnarland Date

[1] Class 1 modifications requiring prior Agency approval.

[2] If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class [1]1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Integrated Disposal Facility	**Part III, Operating Unit 11**

Description of Modification:
Chapter 6.0, Section 6.2.3.2.4:

6.2.3.2.4 Leachate Collection and Removal System

During pre-active life, the Leachate Collection and Removal System is inspected quarterly and after storms (Table 6.2) for the presence of liquids, and that the system is functioning properly.

During active-life (Table 6.3), l~~L~~iquids in the Leachate Collection and Removal System and Leak Detection System are monitored daily to ensure the action leakage rate (Chapter 4.0, Appendix 4A) is not exceeded and will be inspected per Table 6.2. In addition, a flow meter is used to check if the amount of actual leachate pumped corresponds to the amount accumulated in the leachate collection tank. This check will verify the proper function of the leachate collection and removal sump pumps with each use.

~~In addition, evaluations on the leachate transfer lines for freeze and thaw damage will be conducted when appropriate.~~

WAC 173-303-830 Modification Class [1] [2]	Class 1	Class 1'	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Administrative and information changes. Clarification for pre-active life inspections.

Modification Approved: ☐ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology: R. R. Skinnarland Date

[1] Class 1 modifications requiring prior Agency approval.

[2] If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class 1', if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Integrated Disposal Facility	**Part III, Operating Unit 11**

Description of Modification:
Chapter 6.0, Table 6.2:

Table 6.2. Landfill Inspections during Pre-Active Life***

Requirement Description	Inspection Frequency	Types Of Problems
-665(4)(b)(i) Run-on and run-off control	Quarterly and after storms*	Deterioration, malfunction, or improper operation
-665(4)(b)(ii) Wind dispersal control systems	Quarterly and after storms*	Proper functioning
-665(4)(b)(iii) Leachate collection and removal systems	Quarterly and after storms*	Presence of liquids~~leachate~~; proper functioning
-665(4)(c)(i) Leak detection system sump	Quarterly and after storms*	Amount of liquids removed
Secondary leak detection system sump**	~~Monthly~~Quarterly**	Presence of unexpected liquid volume**
Security "Danger unauthorized personnel keep out" signs	Quarterly	Signs are posted and legible
Areas subject to spills	Daily when any activities may take place that have a potential for a spill or release to occur	Evidence of spills

*A storm is any atmospheric disturbance with either wind gust of 35 miles per hour or greater, or precipitation of 0.5 inch or greater within a 24-hour period.

**Note: Secondary leak detection system is not a design requirement of WAC 173-303-665, however DOE is adding the design feature pursuant to its authority under the Atomic Energy Act of 1954 (AEA) and not for the purposes of compliance with the dangerous waste regulations. Therefore, formation regarding the design, construction, and operation of the secondary leak detection system is provided for information only. Pursuant to AEA, DOE has sole and exclusive responsibility and authority to regulate the source, special nuclear and by-product material component of radioactive mixed waste at DOE-owned nuclear facilities. Source, special nuclear and by-product materials, as defined by AEA, are not subject to regulation under RCRA or the Hazardous Waste Management Act, by the State of Washington and are not be subject to State dangerous waste permit, orders, or any other enforceable instrument issued there under. DOE recognizes that radionuclide data may be useful in the development and confirmation of geohydrologic conceptual models. Radionuclide data contained herein is therefore provided as a matter of comity so the information may be used for such purposes.

***Once the IDF begins to receive dangerous waste, the requirements in Table 6.2 are no longer applicable, and inspection requirements will be as provided in Table 6.2A.

WAC 173-303-830 Modification Class [1 2]	Class 1	Class '1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Administrative and information changes. Clarification for pre-active life inspections.

Modification Approved: ☐ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology:
	R. R. Skinnarland Date

[1] Class 1 modifications requiring prior Agency approval.

[2] If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class '1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Integrated Disposal Facility	**Part III, Operating Unit 11**

Description of Modification:
Chapter 6.0, Table 6.3:

Table 6.3. Landfill Inspections during Active Life

Requirement Description	Inspection Frequency	Types Of Problems
-665(4)(b)(i) Run-on and run-off control	Weekly and after storms*	Deterioration, malfunction, or improper operation
-665(4)(b)(ii) Wind dispersal control systems	Weekly and after storms*	Proper functioning
-665(4)(b)(iii) Leachate collection and removal systems	Weekly and after storms*	Presence of leachate; proper functioning
-665(4)(c)(i) Leak detection system sump	Weekly and after storms*	Amount of liquids removed
Secondary leak detection system sump**	Monthly**	Presence of unexpected liquid volume**
Security devices: "Danger unauthorized personnel keep out" signs	Weekly	Signs are posted and legible
Areas subject to spills	Daily when waste management activities having a potential for a spill to occur	Evidence of spills

*A storm is any atmospheric disturbance with either wind gust of 35 miles per hour or greater, or precipitation of 0.5 inch or greater within a 24-hour period.

**Note: Secondary leak detection system is not a design requirement of WAC 173-303-665, however DOE is adding the design feature pursuant to its authority under the Atomic Energy Act of 1954 (AEA) and not for the purposes of compliance with the dangerous waste regulations. Therefore, formation regarding the design, construction, and operation of the secondary leak detection system is provided for information only. Pursuant to AEA, DOE has sole and exclusive responsibility and authority to regulate the source, special nuclear and by-product material component of radioactive mixed waste at DOE-owned nuclear facilities. Source, special nuclear and by-product materials, as defined by AEA, are not subject to regulation under RCRA or the Hazardous Waste Management Act, by the State of Washington and are not be subject to State dangerous waste permit, orders, or any other enforceable instrument issued there under. DOE recognizes that radionuclide data may be useful in the development and confirmation of geohydrologic conceptual models. Radionuclide data contained herein is therefore provided as a matter of comity so the information may be used for such purposes.

WAC 173-303-830 Modification Class [1,2]	Class 1	Class 1'	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1
Enter wording of WAC 173-303-830, Appendix I Modification citation:
Administrative and information changes. Clarification for pre-active life inspections.

Modification Approved: ☐ Yes ☐ No (state reason for denial)
Reason for denial:

Reviewed by Ecology:

R. R. Skinnarland Date

[1] Class 1 modifications requiring prior Agency approval.

[2] If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class 1', if appropriate.

Remove and Replace the Following Sections:

Remove Part III Permit Conditions, dated June 30, 2012, and replace with Permit Conditions, dated December 31, 2012.

Remove Chapter 4.0, dated December 31, 2008, and replace with Chapter 4.0, dated December 31, 2012.

Remove Chapter 6.0, dated December 31, 2008, and replace with Chapter 6.0, dated December 31, 2012.

PART III, OPERATING UNIT 11 UNIT-SPECIFIC CONDITIONS
INTEGRATED DISPOSAL FACILITY

This document sets forth the operating conditions for the Integrated Disposal Facility (IDF).

III.11.A COMPLIANCE WITH APPROVED PERMIT

The Permittees shall comply with all requirements set forth in the Integrated Disposal Facility (IDF) Permit conditions, the Appendices specified in Permit Condition III.11.A and the Amendments specified in Permit Conditions III.11.B through III.11.I. All subsections, figures, and tables included in these portions are enforceable unless stated otherwise:

OPERATING UNIT 11:

Chapter 1.0	Part A Form, dated October 1, 2008
Chapter 3.0	Waste Analysis Plan, dated April 9, 2006
Chapter 4.0	Process Information, dated December 31, 2012
Appendix 4A	Design Report (as applicable to critical systems), dated March 31, 2008
Appendix 4B	Construction Quality Assurance Plan, dated April 9, 2006
Appendix 4C	Response Action Plan, dated April 9, 2006
Appendix 4D	Technical specifications document (RPP-18-489 Rev 0), dated December 31, 2006
Chapter 5.0	Ground Water Monitoring, dated June 30, 2010
Chapter 6.0	Procedure to Prevent Hazards dated December 31, 2012
Addendum J.1	Contingency Plan – Pre-Active Life, dated June 30, 2012
Addendum J.2	Contingency Plan – Active Life, dated June 30, 2012
Chapter 8.0	Personnel Training, dated November 21, 2007
Chapter 11.0	Closure and Post Closure Requirements, dated December 31, 2008

General and Standard Hanford Facility RCRA Permit, WA7 89000 8967 (Permit) conditions (Part I and Part II Conditions) applicable to the IDF are identified in Permit Attachment 3 (Permit Applicability Matrix).

III.11.B AMENDMENTS TO THE APPROVED PERMIT

III.11.B.1 Portions of Permit Attachment 4, *Hanford Emergency Management Plan* that are not made enforceable by inclusion in the applicability matrix for that document, are not made enforceable by reference in this document.

III.11.B.2 Permittees must comply with all applicable portions of the Permit. The facility and unit-specific recordkeeping requirements are distinguished in the General Information Portion of the Permit, and are tied to the Permit conditions.

III.11.B.3 The scope of this Permit is restricted to the landfill construction and operation as necessary to dispose of: 1) immobilized low activity waste from the WTP, and 2) the Demonstration Bulk Vitrification System and IDF operational waste as identified in Chapter 4.0. Future expansion of the RCRA trench, or disposal of other wastes not specified in this Permit, is prohibited unless authorized via modification of this Permit.

III.11.B.4 In accordance with WAC 173-303-806(11)(d), this Permit shall be reviewed every five (5) years after the effective date and modified, as necessary, in accordance with WAC 173-303-830(3).

III.11.B.5 Inspection Requirements – Pre-Active Life Period and Active Life Period

III.11.B.5.a The Permittees will conduct inspections of the IDF according to the following requirements:

III.11.B.5.a.1 Prior to the start of the active life of the IDF as defined in WAC 173-303-040, according to Chapter 6.0, Table 6.2.

III.11.B.5.a.2 Following the start of the active life of the IDF as defined in WAC 173-303-040, according to Chapter 6.0, Table 6.2A.

III.11.B.5.b The Permittees will remedy any problems revealed by inspections conducted pursuant to Permit Condition III.11.B.5.a on a schedule, which prevents hazards to the public health and the environment and as agreed to in writing, by Ecology. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

III.11.B.5.c Reserved

III.11.B.5.d Rainwater Management

III.11.B.5.e Prior to the start of the active life of the IDF, the Permittees will manage the discharge of such water in accordance with the pollution prevention and best management practices required by State Waste Discharge Permit Number ST 4511.

III.11.B.5.e.1 Management of Liquids Collected in the Leachate Collection and Removal System (LCRS), Leak Detection System (LDS), and Secondary Leak Detection System (SLDS) prior to the start of the active life of the IDF.

III.11.B.5.e.2 Permittees shall manage the liquid in the LCRS system in a manner that does not allow the fluid head to exceed 30.5 cm above the flat 50-foot by 50-foot LCRS sump HDPE bottom liner, and the LCRS sump trough, except for storms that exceed the 25-year, 24-hour storm event [(WAC 173-303-665(2)(h)(ii)(B). Liquid with a depth greater than 30.5 cm above the LCRS liner will be removed at the earliest practicable time after detection (not to exceed 5 working days).

III.11.B.5.e.3 Accumulated liquid of pumpable quantities in the LDS and SLDS will be managed in a manner that does not allow the fluid head to exceed 30.5 cm above the LDS liner or SLDS liner [WAC 173-303-665(2)(h)(i)(C)(iii)]. Liquid with a depth greater than 30.5 cm above a liner will be removed at the earliest practicable time after detection (not to exceed 5 working days).

III.11.B.5.e.4 The Permittees will use a flow meter to check if the amount of actual liquid pumped corresponds to the amount accumulated in the leachate collection tank to verify the proper function of the leachate collection and removal sump pumps with each use. The Permittees will document in the IDF portion of the facility operating record appropriate quality assurance/quality control requirements for selection and operation of the flow meter based on the required verification. In addition, the Permittees will evaluate the leachate transfer lines for freeze and thaw damage when ambient conditions may cause such damage to occur. The Permittees will document the methods and criteria used for purposes of this evaluation, along with an appropriate justification.

III.11.B.5.e.5 The Permittee will inspect for liquids after significant rainfall events.

III.11.B.5.e.6 The Permittee will annually verify monitoring gauges and instruments are in current calibration; calibration will be performed annually or more frequently at intervals suggested by the manufacturer (refer to Chapter 4.0, §4.3.7.4)

III.11.B.5.f The Permittees will monitor liquids in the Leachate Collection and Removal System and Leak Detection System to ensure the action leakage rate (Chapter 4.0, Appendix 4A) is not exceeded. The Leachate Collection and Removal System will be inspected per Permit Condition III.11.B.5.c.

III.11.B.5.g Soil Stabilization

Prior to the first placement of waste in the IDF, the Permittee will apply soil stabilization materials as needed to prevent soil erosion in and around the landfill.

III.11.C DESIGN REQUIREMENTS

III.11.C.1 IDF is designed in accordance with WAC 173-303-665 and WAC 173-303-640 as described in Chapter 4.0. Design changes impacting IDF critical systems shall be performed in accordance with Permit Conditions III.11.D.1.d.i and III.11.D.1.d.ii.

III.11.C.1.a IDF Critical Systems include the following: The leachate collection and removal system (LCRS), leachate collection tank (LCT), leak detection system (LDS), liner system (LS), and closure cap. H-2 Drawings for the LCRS, LCT, LDS, and LS are identified in Appendix 4A, Section 3 of this Permit. Drawings for the closure cap will be provided pursuant to Permit Condition III.11.C.1.b.

The Permittees shall construct and operate the IDF in accordance with all specifications contained in RPP-18489 Rev 0. Critical systems, as defined in the definitions section of the Site-Wide RCRA Permit, are identified in Appendix 4A, Section 1 of this Permit.

III.11.C.1.b Landfill Cap

At final closure of the landfill, the Permittees shall cover the landfill with a final cover (closure cap) designed and constructed [WAC 173-303-665(6), WAC 173-303-806(4)(h)] to: Provide long-term minimization of migration of liquids through the closed landfill; Function with minimum maintenance; Promote drainage and minimize erosion or abrasion of the cover; Accommodate settling and subsidence so that the cover's integrity is maintained; and have a permeability less than or equal to the permeability of any bottom liner system or natural sub soils present.

III.11.C.1.c Compliance Schedule

Proposed conceptualized final cover design is presented in Chapter 11, Closure and Financial Assurance. Six months prior to start of construction of IDF landfill final cover (but no later than 6 months prior to acceptance of the last shipment of waste at the IDF), the Permittees shall submit IDF landfill final cover design, specifications and CQA plan to Ecology for review and approval. No construction of the final cover may proceed until Ecology approval of the final design is given, through a permit modification.

III.11.C.1.d The Permittees shall notify Ecology at least sixty (60) calendar days prior to the date it expects to begin closure of the IDF landfill in accordance with WAC 173-303-610(c).

III.11.C.2 Design Reports

III.11.C.2.a New Tank Design Assessment Report

Permittees shall generate a written report in accordance with WAC 173-303-640(3)(a), providing the results of the leachate collection tank system design assessment. The report shall be reviewed and certified by an Independent Qualified Registered Professional Engineer (IQRPE)[1] in accordance with WAC-173-303-810(13)(a).

[1] "Independent qualified registered professional engineer," as used here and elsewhere with respect to Operating Unit 11, means a person who is licensed by the state of Washington, or a state which has reciprocity with the state of Washington as defined in RCW 18.43.100, and who is not an employee of the owner or operator of the facility for which construction or modification certification is required. A qualified professional engineer is an engineer with expertise in the specific area for which a certification is given.

III.11.C.2.b Compliance Schedule

Permittees shall submit the leachate collection tank design assessment report to Ecology along with the IQRPE certification, prior to construction of any part of the tank system including ancillary equipment.

III.11.D CONSTRUCTION REQUIREMENTS

III.11.D.1 Construction Quality Assurance

III.11.D.1.a Ecology shall provide field oversight during construction of critical systems. In cases where an Engineering Change Notice (ECN) and/or Non Conformance Report (NCR) are required, Ecology and the Permittees shall follow steps for processing changes to the approved design per Permit Conditions III.11.D.1.d.i and III.11.D.1.d.ii.

III.11.D.1.b Permittees shall implement the Construction Quality Assurance Plan (CQA plan) (Appendix 4B of the permit) during construction of IDF.

III.11.D.1.b.1 The Permittees will not receive waste in the IDF until the owner or operator has submitted to Ecology by certified mail or hand delivery a certification signed by the CQA officer that the approved CQA plan has been successfully carried out and that the unit meets the requirements of WAC 173-303-665(2)(h) or (j); and the procedure in WAC 173-303-810(14)(a) has been completed. Documentation supporting the CQA officer's certification shall be furnished to Ecology upon request.

III.11.D.1.c Construction inspection reports

Permittees shall submit a report documenting the results of the leachate tank installation inspection. This report must be prepared by an independent, qualified installation inspector or a professional independent, qualified, registered, professional engineer either of whom is trained and experienced in the proper installation of tank systems or components. The Permittees will remedy all discrepancies before the tank system is placed in use. This report shall be submitted to Ecology 90 days prior to IDF operation and be included in the IDF Operating Record. [WAC 173-303-640(3)(h)].

III.11.D.1.d ECN/NCR Process for Critical Systems

Portions of the following conditions for processing engineering change notices and non-conformance reporting were extracted from and supersede Site Wide General Permit Condition II.L.

III.11.D.1.d.1 Engineering Change Notice for Critical Systems

During construction of the IDF, the Permittees shall formally document changes to the approved designs, plans, and specifications, identified in Appendices 4A, 4B, 4C, and 4D of this permit, with an Engineering Change Notice (ECN). The Permittees shall maintain all ECNs in the IDF unit-specific Operating Record and shall make them available to Ecology upon request or during the course of an inspection. The Permittees shall provide to Ecology copies of proposed ECNs affecting any critical system within five (5) working days of initiating the ECN. Identification of critical systems is included in Permit Condition III.11.C.1 and Appendix 4A of this permit. Within five (5) working days,

Ecology will review a proposed ECN modifying a critical system and inform the Permittees whether the proposed ECN, when issued, will require a Class 1, 2, or 3 Permit modification.

III.11.D.1.d.2 Non-conformance Reporting for Critical Systems

III.11.D.1.d.2.a During construction of the IDF, the Permittees shall formally document with a Nonconformance Report (NCR), any work completed which does not meet or exceed the standards of the approved design, plans and specifications, identified in Appendices 4A, 4B, 4C and 4D of this Permit. The Permittees shall maintain all NCRs in the IDF unit-specific Operating Record and shall make them available to Ecology upon request, or during the course of an inspection.

III.11.D.1.d.2.b The Permittees shall provide copies of NCRs affecting any critical or regulated system to Ecology within five (5) working days after identification of the nonconformance. Identification of critical systems is included in Permit Condition III.11.C.1 and Appendix 4A of this permit. Ecology will review a NCR affecting a critical system and notify the Permittees within five (5) working days, in writing, whether a Permit modification is required for any nonconformance, and whether prior approval is required from Ecology before work proceeds, which affects the nonconforming item.

III.11.D.1.d.2.c As-Built Drawings

Upon completing construction of IDF, the Permittees shall produce as-built drawings of the project, which incorporate the design and construction modifications resulting from all project ECNs and NCRs, as well as modifications made pursuant to WAC 173-303-830. The Permittees shall place the drawings into the Operating Record within twelve (12) months of completing construction.

III.11.D.2 The Permittees shall not reduce the minimum frequency of destructive testing less than one test per 500 feet of seam, without prior approval in writing from Ecology

III.11.E GROUND WATER AND GROUND WATER MONITORING

Ground water shall be monitored in accordance with WAC 173-303 and the provisions contained in the Ecology-approved facility ground water monitoring plan (Chapter 5.0). All wells used to monitor the ground water beneath the unit shall be constructed in accordance with the provisions of WAC 173-160.

III.11.E.1 Ground Water Monitoring Program

III.11.E.1.a Prior to initial waste placement in the IDF landfill, the Permittees shall sample all ground water monitoring wells in the IDF network twice quarterly for one first year to determine baseline conditions. For the first sampling event (and only the first), samples for each well will include all constituents in 40 CFR 264 Appendix IX. Thereafter, sampling will include only those constituents as specified in Chapter 5.0, Table 5-2: chromium (filtered and unfiltered the first year to compare results), specific conductance, TOC, TOX, and pH. Other constituents to be monitored but not statistically compared include alkalinity, anions, ICP metals, and turbidity. These will provide important information on hydrogeologic characteristics of the aquifer and may provide indications of encroaching contaminants from other facilities not associated with IDF.

III.11.E.1.b After the baseline monitoring is completed, and data is analyzed, the Permittees and Ecology shall assess revisions to Chapter 5.0, Table 5-2. Subsequent samples will be collected annually and will include constituents listed in Table 5-2 as approved by Ecology. All data analysis will employ Ecology approved statistical methods pursuant to WAC 173-303-645. Changes to Chapter 5.0 will be subject to the permit modification procedures under WAC 173-303-830.

III.11.E.1.c All constituents used as tracers to assess performance of the facility through computer modeling should be sampled at least annually to validate modeling results. Groundwater monitoring data and analytes to be monitored will be reviewed periodically as defined in Chapter 5.0 of this Permit.

III.11.E.1.d Upon Ecology approval of the leachate monitoring plan, leachate monitoring and groundwater monitoring activities should be coordinated as approved by Ecology to form an effective and efficient means of monitoring the performance of the IDF facility.

III.11.E.1.e Groundwater monitoring data shall be reported to Ecology annually by July 30.

III.11.F LEACHATE COLLECTION COMPONENT MANAGEMENT

Permittees shall design, construct, and operate all leachate collection systems to minimize clogging during the active life and post closure period

III.11.F.1 Leachate Collection and Removal System (LCRS)

III.11.F.1.a At least 120 days prior to initial waste placement in the IDF, the Permittees shall submit a Leachate monitoring plan to Ecology for review, approval, and incorporation into the permit. Upon approval by Ecology, this plan will be incorporated into the Permit as a class 1' modification. The Permittees shall not accept waste into the IDF until the requirements of the leachate monitoring plan have been incorporated into this permit.

III.11.F.1.b Leachate in the LCRS (primary sump) shall be sampled and analyzed monthly for the first year of operation of the facility and quarterly thereafter (pursuant to WAC 173-303-200). Additionally, leachate shall be sampled and analyzed to meet waste acceptance criteria at the receiving treatment storage and disposal facility.

III.11.F.1.c Permittees shall manage the leachate in the LCRS system in a manner that does not allow the fluid head to exceed 30.5 cm above the flat 50-foot by 50-foot LCRS sump HDPE bottom liner except for rare storm events as discussed in Chapter 4.0, §4.3.6.1 and the LCRS sump trough [(WAC 173-303-665(2)(h)(ii)(B). Liquid with a depth greater than 30.5 cm above the SLDS liner will be removed at the earliest practicable time after detection (not to exceed 5 working days).

III.11.F.1.d After initial waste placement, Permittees shall manage all leachate from the permitted cell as dangerous waste (designated with Dangerous Waste Number F039) in accordance with WAC 173-303.

III.11.F.2 Monitoring and Management of Leak Detection System (LDS/ secondary sump)

III.11.F.2.a Permittees shall manage the leachate in the LDS system in a manner that does not allow the fluid head to exceed 30.5 cm above the LDS liner (WAC 173-303-665(2)(h)(ii)(B).

III.11.F.2.b Permittees shall monitor and record leachate removal for comparison to the Action Leakage Rate (ALR) as described in Appendix 4C, Response Action Plan. If the leachate flow rate in the LDS exceeds the ALR, the Permittees shall implement the Ecology approved response action plan (Appendix 4C).

III.11.F.2.c Leachate from the LDS (secondary sump) shall be sampled semi-annually if a pumpable quantity of leachate is available for sampling.

III.11.F.2.d Accumulated liquid of pumpable quantities in the LDS will be managed in a manner that does not allow the fluid head to exceed 30.5 cm above the LDS liner [WAC 173-303-665(2)(h)(i)(C)(iii)]. Liquid with a depth greater than 30.5 cm above the LDS liner will be removed at the earliest practicable time after detection (not to exceed 5 working days).

III.11.F.3 Monitoring and Management of the Secondary Leak Detection System (SLDS)

III.11.F.3.a At least 180 days prior to initial waste placement, the, the Permittees shall submit to Ecology for approval a sub-surface liquids monitoring and operations plan (SLMOP) for the SLDS to include the following: monitoring frequency, pressure transducer configuration, liquid collection and storage processes, sampling and analysis and response actions. The SLMOP shall be approved by Ecology prior to placement of waste in the IDF, and incorporated into the Permit as a Class 1' modification.

III.11.F.3.b Permittees shall monitor and manage the SLDS (tertiary sump) pursuant to the approved sub-surface liquids monitoring and operations plan.

III.11.F.3.c Accumulated liquid of pumpable quantities in the SLDS will be managed in a manner that does not allow the fluid head to exceed 30.5 cm above the SLDS liner [WAC 173-303-665(2)(h)(i)(C)(iii)]. Liquid with a depth greater than 30.5 cm above the SLDS liner will be removed at the earliest practicable time after detection (not to exceed 5 working days).

III.11.F.3.d After initial waste placement, Permittees shall manage all leachate from the permitted cell as dangerous waste in accordance with WAC 173-303.

III.11.G CONSTRUCTION WATER MANAGEMENT

III.11.G.1 During construction, it is anticipated that liquids will accumulate on top of all liners and sumps. Permittees shall manage the construction wastewater in accordance with State Waste Discharge Permit ST 4511.

III.11.G.2 Liquid accumulation within the LCRS, LDS, and SLDS prior to initial waste placement will be considered construction wastewater (i.e., not leachate).

III.11.H LANDFILL LINER INTEGRITY MANAGEMENT & LANDFILL OPERATIONS

III.11.H.1 Permittees shall design, construct, and operate the landfill in a manner to protect the liners from becoming damaged. Temperature: Waste packages with elevated temperatures shall be evaluated and managed in a manner to maintain the primary (upper) liner below the design basis temperature for the liner (e.g.,160 F). Weight: Waste, fill material and closure cover shall be placed in a manner that does not exceed the allowable load bearing capacity of the liner (weight per area 13,000 lb/ft^2). Puncture: At least 3 feet of clean backfill material shall be placed as an operations layer over the leachate collection and removal system to protect the system from puncture damage.

III.11.H.1.a All equipment used for construction and operations inside of the IDF shall meet the weight limitation as specified in Permit Condition III.H.1. Only equipment that can be adequately supported by the operations layer as specified in Permit Condition III.H.1 (e.g., will not have the potential to puncture the liner) shall be used inside of the IDF. All equipment used for construction and operations outside of the IDF shall not damage the berms. Changes to any equipment will follow the process established by condition II.R of the site wide permit. Within 120 days from the effective date for the permit, a process for demonstrating compliance with this condition shall be submitted for review by Ecology. This process will be incorporated into appropriate IDF operating procedures prior to IDF operations.

III.11.H.2 The Permittees shall construct berms and ditches to prevent run-on and run-off in accordance with the requirements of Section 4.3.8 of this permit. Before the first placement of waste in the IDF, the Permittees shall submit to Ecology a final grading and topographical map on a scale sufficient to identify berms and ditches used to control run-on and run-off. Upon approval, Ecology will incorporate these maps into the permit as a Class 1' modification.

III.11.H.3 The Permittees shall operate the RCRA IDF Cell (Cell1) in accordance with WAC 173-303-665(2) and the operating practices described in Chapters 3.0, 4.0, 6.0, 7.0, 8.0 and Appendix 4A, §1, subsection 7, except as otherwise specified in this Permit.

III.11.H.4 The Permittees shall maintain a permanent and accurate record of the three-dimensional location of each waste type, based on grid coordinates, within the RCRA IDF Cell (Cell1) in accordance with WAC 173-303-665(5).

III.11.I WASTE ACCEPTANCE CRITERIA

The only acceptable waste form approved for disposal at the RCRA cell of IDF are IDF operational waste, Immobilized Low Activity Waste (ILAW) in glass form from the Waste Treatment Plant (WTP) Low Activity Waste (LAW) Vitrification facility and ILAW from the Bulk Vitrification Research Demonstration and Development facility (up to 50 boxes). Specifics about waste acceptance criteria for each of these wastes are detailed below.

No other waste forms may be disposed at the RCRA cell of IDF unless authorized via a Final Permit modification decision. Requests for Permit modifications must be accompanied by an analysis adequate for Ecology to comply with SEPA, as well as by a risk assessment and groundwater modeling to show the environmental impact. Permit Condition III.11.I.5 outlines the process by which waste sources in the IDF are modeled in an ongoing risk budget and a ground water impact analysis.

III.11.I.1 Six months prior to IDF operations Permittees shall submit to Ecology for review, approval, and incorporation into the permit, all waste acceptance criteria to address, at a minimum, the following: physical/chemical criteria, liquids and liquid containing waste, land disposal restriction treatment standards and prohibitions, compatibility of waste with liner, gas generation, packaging, handling of packages, minimization of subsidence.

III.11.I.1.a All containers/packages shall meet void space requirements pursuant to WAC 173-303-665(12).

III.11.I.1.b Compliance Schedule

III.11.I.1.b.1 Six months prior to IDF operations, the Permittees shall submit to Ecology for review, approval, and incorporation into the permit any necessary modifications to the IDF Waste Acceptance Plan (Appendix 3A of the permit application, DOE/RL-2003-12, Rev 1).

III.11.I.2 ILAW Waste Acceptance Criteria

The only ILAW forms acceptable for disposal at IDF are: (1) approved glass canisters that are produced in accordance with the terms, conditions, and requirements of the WTP portion of the Permit, and (2) the 50 bulk vitrification test boxes as specified in the DBVS test plans.

To assure protection of human health and the environment, it is necessary that the appropriate quality of glass be disposed at IDF. The LDR Treatment Standard for eight metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver), when associated with High Level Waste, is HLVIT (40 CFR 268). Because these metals are constituents in the Hanford Tanks Waste, the LDR standard for ILAW disposed to IDF is HLVIT.

For any ILAW glass form(s) that DOE intends to dispose of in IDF, DOE will provide to Ecology for review, an ILAW Waste Form Technical Requirements Document (IWTRD). The IWTRD will contain:

III.11.I.2.a WTP ILAW Waste Acceptance Criteria

III.11.I.2.a.1 A description of each specific glass formulation that DOE intends to use including a basis for why each specific formulation is proposed for use, which specific tank wastes the glass formulation is proposed for use with, the characteristics of the glass that are key to satisfactory performance (e.g., VHT, PCT, and TCLP and/or other approved performance testing methodologies that the parties agree are appropriate and necessary), the range in key characteristics anticipated if the specific glass formulation is produced on a production basis with tank waste, and the factors that DOE must protect against in producing the glass to ensure the intended glass characteristics will exist in the actual ILAW.

III.11.I.2.a.2 A performance assessment that provides a reasonable basis for assurance that each glass formulation will, once disposed of in IDF in combination with the other waste volumes and waste forms planned for disposal at the entire Integrated Disposal Facility, be adequately protective of human health and the environment; and will not violate or be projected to violate all applicable state and federal laws, regulations and environmental standards.

Within 60 days of a request by Ecology, the Permittees shall provide a separate model run using Ecology's assumptions and model input.

III.11.I.2.a.3 A description of production processes including management controls and quality assurance/quality control requirements that assure that glass produced for each formulation will perform in a reasonably similar manner to the waste form assumed in the performance assessment for that formulation.

The Permittees shall update the IWTRD consistent with the above requirements for review by Ecology consistent with their respective roles and authority as provided under the TPA. Ecology comments shall be dispositioned through the Review Comment Record (RCR) process and will be reflected in further modeling to modify the IDF ILAW Chapter 3.0, Waste Analysis Plan as appropriate.

The initial IWTRD contained glass formulation data as required by Permit Condition III.11.I.2.a.1, and was submitted on December 18, 2006 (AR Accession # 0906020182). The performance assessment required by Permit Condition III.11.I.2.a.2, and the quality assurance/quality control requirements process required by Permit Condition III.11.I.2.a.3 shall be submitted for Ecology review as soon as possible after issuance of the Final Tank Closure and Waste Management EIS and receipt of underlying codes and data packages, and at least 180 days prior to the date DOE expects to receive waste at IDF. At a minimum, the Permittees shall submit updates to the IWTRD to Ecology if any of the following conditions exist:

- The Permittees submits a permit modification request allowing additional waste forms to be disposed of at IDF,
- The WTP or other vitrification facility change their glass formulations from those previously included in the IWTRD
- An unanticipated event or condition occurs that Ecology determines would warrant an update to the IWTRD.

III.11.I.2.a.4 The Permittees shall not dispose of any WTP ILAW not described and evaluated in the IWTRD.

III.11.I.3 ILAW Waste Acceptance Criteria Verification

III.11.I.3.a Six months prior to disposing of ILAW in the IDF, the Permittees will submit an ILAW verification plan to Ecology for review and approval. This plan will be coordinated with WTP, Ecology, and the Permittees personnel. This plan will outline the specifics of verifying ILAW waste acceptance through WTP operating parameters, and/or glass sampling. The Plan will include physical sampling requirements for batches, glass formulations, and/or feed envelopes.

III.11.I.4 Demonstration Bulk Vitrification System (DBVS) Bulk Vitrification Waste Acceptance Criteria

III.11.I.4.a Bulk Vitrification waste forms that are acceptable to be disposed of at IDF are up to 50 boxes of vitrified glass produced pursuant to the DBVS RD&D Permit from processing Hanford Tank S-109 tank waste.

III.11.I.4.b If Bulk Vitrification is selected as a technology to supplement the Waste Treatment Plant, the IDF portion of the Permit will need to be modified to accept Bulk Vitrification Full Scale production waste forms. This modification will need to be accompanied by appropriate TPA changes (per M-062 requirements) and adequate risk assessment information sufficient for the Department of Ecology to meet its SEPA obligations.

III.11.I.4.c DBVS Waste Acceptance Verification will occur on 100% of the waste packages. Pursuant to the DBVS RD&D Permit, a detailed campaign test report will be produced and submitted to Ecology detailing results of all testing performed on each waste package that is produced. IDF personnel shall review these reports to verify that the waste packages meet IDF Waste Acceptance Criteria.

III.11.I.4.d The Permittees shall not dispose of any waste forms that do not comply with all appropriate and applicable treatment standards, including all applicable Land Disposal Restrictions (LDR).

III.11.I.5 Modeling – Risk Budget Tool

III.11.I.5.a The Permittees must create and maintain a modeling - risk budget tool, which models the future impacts of the planned IDF waste forms (including input from analyses performed as specified in Permit Conditions III.11.I.2.a through III.11.I.2.a.ii) and their impact to underlying vadose and ground water. This software tool will be submitted for Ecology review as soon as possible after issuance of Final Tank Closure and Waste Management EIS and receipt of underlying codes and data packages, and at least 180 days prior to the date DOE expects to receive waste at IDF. The risk budget tool shall be updated at least every 5 years. The model will be updated more frequently if needed, to support permit modifications or SEPA Threshold Determinations whenever a new waste stream or significant expansion is being proposed for the IDF. This risk budget tool shall be conducted in manner that is consistent with state and federal requirements, and represents a risk analysis of all waste previously disposed of in the entire IDF (both cell 1 and cell 2) and those wastes expected to be disposed of in the future for the entire IDF to determine cumulative impacts. The groundwater impact should be modeled to evaluate fate and transport in the groundwater aquifer(s) and should be compared against various performance standards including but not limited to drinking water standards (40 CFR 141 and 40 CFR 143). Ecology will review modeling assumptions, input parameters, and results and will provide comments to the Permittees. Ecology comments shall be dispositioned through the Review Comment Record (RCR) process and will be reflected in further modeling to modify the IDF ILAW waste acceptance criteria as appropriate.

III.11.I.5.a.1 The modeling-risk budget tool will include a sensitivity analysis reflecting parameters and changes to parameters as requested by Ecology.

III.11.I.5.a.2 If these modeling efforts indicate results within 75% of a performance standard [including but not limited to federal drinking water standards (40 CFR 141 and 40 CFR 143)], Ecology and the Permittees will meet to discuss mitigation measures or modified waste acceptance criteria for specific waste forms.

III.11.I.5.a.3 When considering all the waste forms to be disposed of in IDF, the Permittees shall not dispose of any waste that will result (through forward looking modeling or in real groundwater concentrations data) in a violation of any state or federal regulatory limit, specifically including but not limited to drinking water standards for any constituent as defined in 40 CFR 141 and 40 CFR 143.

III.11.I.6 The Permittees shall not dispose of any waste that is not in compliance with state and federal requirements as identified in Chapter 13.0.

III.11.I.6.a In accordance with DOE's authority under the Atomic Energy Act of 1954, as amended and other applicable law, prior to disposing of any mixed immobilized low-activity waste (ILAW) in the IDF, DOE will certify to the State of Washington that it has determined that such ILAW is not high-level waste and meets the criteria and requirements outlined in DOE's consultation with the U.S. Nuclear Regulatory Commission beginning in 1993 (Letter from R.M. Bernero, USNRC to J. Lytle, USDOE, dated March 2, 1993; Letter from J. Kinzer, USDOE, to C. J. Paperiello, USNRC, Classification of Hanford Low-Activity Tank Waste Fraction, dated March 7, 1996; and Letter from C.J. Paperiello, USNRC, to J. Kinzer, USDOE, Classification of Hanford Low-Activity Tank Waste Fraction, dated June 9, 1997). While the requirement to provide such certification is an enforceable obligation of this permit, the provision of such certification does not convey, or purport to convey, authority to Ecology to regulate the radioactive hazards of the waste under this permit.

III.11.I.7 IDF Operational Waste Acceptance Criteria

III.11.I.7.a IDF operational activities (including decontamination, cleanup, and maintenance) will generate a small amount of waste. Waste that can meet IDF waste acceptance without treatment will be disposed of at the IDF. All other IDF operational waste will be managed pursuant to WAC 173-303-200.

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Chapter 4.0 Process Information

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4.0 PROCESS INFORMATION

This chapter discusses the processes that will be used to dispose waste in the IDF and includes a discussion of the design and function of the following:

- Container
- Disposal landfill
- Leak detection system
- Leachate collection and removal system
- Secondary leak detection system

Note that the SLDS is not a design requirement of WAC 173-303-665, however DOE is adding the design feature pursuant to its authority under the Atomic Energy Act of 1954 (AEA) and not for the purposes of compliance with the dangerous waste regulations. Therefore, information regarding the design, construction, and operation of the secondary leak detection system is provided in this application as information only. Pursuant to AEA, DOE has sole and exclusive responsibility and authority to regulate the source, special nuclear and by-product material component of radioactive mixed waste at DOE-owned nuclear facilities. Source, special nuclear and by-product materials, as defined by AEA, are not subject to regulation under RCRA or the Hazardous Waste Management Act, by the State of Washington and are not be subject to State dangerous waste permit, orders, or any other enforceable instrument issued there under. DOE recognizes that radionuclide data may be useful in the development and confirmation of geohydrologic conceptual models. Radionuclide data contained herein is therefore provided as a matter of comity so the information may be used for such purposes.

Waste stream compatibility (i.e., compatibility between individual waste streams and compatibility between waste streams and landfill design and construction parameters) will be assessed on a case-by-case basis. Criteria for assessing and determining compatibility is identified in the Waste Acceptance Criteria, Waste Analysis Plan, or other protocol or procedure as appropriate (Chapter 3.0, for further discussion of waste stream compatibility).

Process Code S01 (container storage) has been included within this permit, in the event that storage is required before final disposal (e.g., to support the confirmation process of the waste or cooling of vitrified waste if required). Waste failing the confirmation process (Chapter 3.0) will be identified as off-specification and may require storage prior to disposal. Only off-specification waste or vitrified waste requiring cooling (due to process heat) may be stored in the lined portion of the IDF pending disposition. To maintain operational flexibility, off-specification containers and vitrified waste requiring cooling could be left on the transport vehicles at the IDF until disposal can occur but may be off-loaded into the lined portion of the IDF pending final disposal provided the temperature administrative control limit is not exceeded. Off-specification waste and vitrified waste requiring cooling will be separated from other waste via tape, ropes, chains, or other cordon mechanism.

4.1 CONTAINERS

All mixed waste accepted for disposal at the IDF will be packaged in standard containers [U.S. Department of Transportation (DOT) and/or DOE], unless alternate packages are dictated by the size, shape, or form of waste (49 CFR 173) (e.g., metal boxes), and self-contained bulk waste.

4.1.1 Description of Containers

Mixed waste disposed at the IDF is limited to vitrified low-activity waste (LAW) from the RPP-WTP and DBVS. Additionally, mixed waste generated by IDF operations will be disposed of in IDF.

The RPP-WTP and DBVS containers are designed specifically for the vitrified low activity waste form. Nominal RPP-WTP container dimensions will be 122 centimeters base outside dimension, 107 centimeters top by 230 centimeters in length, with a wall thickness of 0.357 centimeter with a container volume of 2.55 cubic meters. The DBVS container dimensions are approximately 2.4 meters wide by 3.1 meters tall and 7.3 meters long and a container volume of 54 cubic meters. The vitrified low activity waste will be compatible with the containers, stainless steel for RPP-WTP and carbon steel for DBVS. Before receipt at the IDF, containers will be closed by the generator.

Due to the radioactivity and remote handling of the RPP-WTP immobilized waste containers, conventional labeling of the vitrified immobilized waste containers will not be feasible and an alternative to the standard labeling requirements will be used. This alternative labeling approach will use a unique alphanumeric identifier that will be welded onto each immobilized glass waste container. The welded "identifier" will ensure that the number is always legible, will not be removed or damaged during container decontamination, will not be damaged by heat or radiation, and will not degrade over time.

The identifier will be welded onto the shoulder and sidewall of each immobilized glass container at two locations 180 degrees apart. Characters will be approximately 2 in. high by 1.5 in. wide. The identifier will be formed by welding on stainless steel filler material at the time of container construction. This identifier will be used to track the container from receipt at the RPP-WTP, throughout its subsequent path of shipment and disposal at the IDF.

Each identifier will be composed of unique coded alphanumeric characters. This unique alphanumeric identification will be maintained within the plant information network, and will list data pertaining to the waste container including waste numbers, and the major risk(s) associated with the waste.

Mixed waste generated through waste operations at IDF will be packaged based on the size of the waste, with the most common container being galvanized or aluminized 208-liter containers.

The container packaging and handling for the IDF are designed to maintain containment of the waste, limit storage intrusion, and limit human exposure to mixed waste. Unusual sized containers such as vitrified LAW packages will be handled by using cranes or other appropriate equipment.

Operations personnel will inspect each container to confirm appropriate documentation and compliance with the waste acceptance criteria before the container is placed in the IDF (refer to Chapter 3).

If containerized mixed waste must be opened (i.e., for confirmation sampling, repackaging, etc.), the container typically would be removed to an onsite treatment and/or storage unit or other approved location before being opened. The container would be sealed before being returned to the IDF.

4.2 LEACHATE COLLECTION TANKS

The aboveground leachate collection tank supports the lined IDF landfill. The leachate collection tank will be operated in accordance with the generator provisions of WAC 173-303-200 and WAC 173-303-640 as referenced by WAC 173-303-200.

For informational purposes, the following is provided for an understanding of the operation of the Leachate Collection Tank. Procedures will be written to manage the leachate in accordance with WAC 173-303-200. The presence of leachate in the tank will be detected with instrumentation within the two stilling wells. The level instrument within the first stilling well monitors the depth of leachate in the tank. A second stilling well will have instrumentation for high-high and low-low alarm set-point trips. The leachate will be removed from the tank using a transfer pump.

4.3 LANDFILLS

The following addresses the IDF lined landfill.

4.3.1 List of Wastes

IDF will receive mixed and/or dangerous waste.

Waste will be accepted in containers (e.g. drums, boxes, larger containers).

Waste streams acceptable at the IDF facility fall within the range of dangerous waste numbers identified in Chapter 1.0, Part A Form.

4.3.2 Liner System Exemption Requests

This permit documentation does not seek an exemption to liner system requirements.

4.3.3 Liner System, General Items

This section provides a general description of the liner system to be used for the IDF lined landfill.

The liner system was designed to prevent migration of leachate out of the lined landfill during the active life of the landfill. The Active Life will consist of the operational period and the closure/postclosure period. The liner system was designed to meet U.S. Environmental Protection Agency (EPA) requirements, as identified in RCRA Subtitle C requirements for hazardous waste disposal facilities (40 CFR 264), technical guidance documents (e.g., EPA 1985), and WAC-173-303-665. In addition, the liner system incorporates the following general functional requirements:

- Range of Operating Conditions--year-round operation, withstand construction, and long-term stresses
- Degree of Reliability--function safely and effectively throughout operating and closure/postclosure period with minimum maintenance
- Intended Life--operational phase plus closure/postclosure monitoring phase

4.3.3.1 Liner System Description

The landfill liner system will comply with WAC 173-303-665 requirements for dangerous waste landfills. Figure 4.2 shows a typical design and includes the following components (from top to bottom).

- Operations layer: minimum 0.9-meter thick of native soil. This layer provides a working surface for equipment, protect the liner from mechanical damage, and prevent freezing of the underlying low-hydraulic conductivity soil layer. (Hydraulic conductivity is a measure of how rapidly a material can transmit water and is based on specific ASTM testing requirements.)
- Leachate collection and removal system (LCRS) contains a minimum 0.3-meter-thick drainage gravel layer with a hydraulic conductivity of at least 1 x 10^{-2} centimeter per second (sometimes including perforated drainage pipes). A nonwoven separation geotextile is located between the operations layer and the drainage gravel layer to minimize sediment (fine-soil) migration into the

  LCRS. A nonwoven cushion geotextile is located between the drainage gravel and the primary geomembrane to protect the primary geomembrane.

The LCRS liners collect and convey leachate to the LCRS sump for removal and include the following components.

- Primary geomembrane liner: this liner consists of high-density polyethylene (HDPE) because of its excellent resistance to expected chemicals (Chapter 1.0), nominal 60-mil thickness (54-mil minimum), which is textured (to improve stability against sliding). The geomembrane acts as a moisture barrier. Located immediately above the primary geomembrane the LCRS includes a perforated pipe that helps collect and guide water into the leachate collection sump. The perforated

pipe is located along the centerline of the cell and provides high-flow path water to the primary collection sump.

- Primary geosynthetic clay liner (GCL): the GCL consisting of a high-swelling sodium synthetic mat containing bentonite with a hydraulic conductivity of 1×10^{-8} centimeter per second or less. This layer acts as an additional primary moisture barrier directly under the primary geomembrane.

The leak detection system (LDS) is similar to the LCRS except the composite drainage net (CDN) replaces the primary gravel layer, the geosynthetic clay liner (GCL) is placed directly under the secondary geomembrane liner only under the LDS sump and the perforated pipes are not be needed because very high flow capacities are not be required. The purpose of this system is to collect any leachate that leaks through the primary liner system and convey the leachate to the LDS sump for removal. The LDS also serves as a secondary LCRS. The LDS liners will collect and convey leakage to the LDS sump and include the following components:

- Secondary geomembrane liner: same as primary geomembrane liner
- Secondary geosynthetic clay liner: same as primary geosynthetic clay liner
- Admix liner: a minimum 0.9-meter-thick layer of compacted soil/bentonite admixture with a hydraulic conductivity of 1×10^{-7} centimeter per second or less. The bentonite is high-swelling sodium bentonite. This layer acts as an additional moisture barrier directly under the secondary geosynthetic clay liner in the LDS sump area and the secondary geomembrane outside the LDS sump area.
- The secondary leak detection system (SLDS) consists of operations layer type fill for a foundation of the LDS admix layer, drainage gravel with a hydraulic conductivity of at least 1×10^{-2} centimeter per second adjacent to a perforated pipe, a composite drainage net (CDN) and tertiary geomembrane. A nonwoven separation geotextile is located between the operations layer type material and the drainage gravel to minimize sediment (fine-soil) migration into the SLDS piping. The purpose of this system is to provide access to the area immediately below the LDS sump area. The SLDS collects liquids resulting from construction water and potentially, liquid from other sources. The SLDS liners will convey collected liquids to the SLDS piping for monitoring and/or removal. (Note that the secondary leak detection system is not a design requirement of WAC 173-303-665, however DOE is adding the design feature pursuant to its authority under the Atomic Energy Act of 1954 (AEA) and not for the purposes of compliance with the dangerous waste regulations. Therefore, information regarding the design, construction, and operation of the secondary leak detection system is provided in this application as information only. Pursuant to AEA, DOE has sole and exclusive responsibility and authority to regulate the source, special nuclear and by-product material component of radioactive mixed waste at DOE-owned nuclear facilities. Source, special nuclear and by-product materials, as defined by AEA, are not subject to regulation under RCRA or the Hazardous Waste Management Act, by the State of Washington and are not be subject to State dangerous waste permit, orders, or any other enforceable instrument issued there under. DOE recognizes that radionuclide data may be useful in the development and confirmation of geohydrologic conceptual models. Radionuclide data contained herein is therefore provided as a matter of comity so the information may be used for such purposes).

4.3.3.1.1 Operations Layer

The purpose of the operations layer is to protect the underlying liner components from damage by equipment during lined landfill construction and operation. This layer also protects the admix layer from freezing and desiccation cracking.

Previous research and experience has shown that desiccation cracks can occur under geomembrane liners when either the liner is not in close contact with the compacted admix or when the liner is subjected to

wide temperature fluctuations (Corser and Cranston 1991). The operations layer acts as a weight to keep the geomembrane in contact with the admix, thereby reducing the potential for water vapor to form in an underlying airspace. The operations layer also acts as an insulating layer, together with the dead air space trapped in the underlying drainage layers.

The operations layer material typically consists of onsite granular soil that is reasonably well graded. The material has a maximum particle size limit of 5.1 centimeters or less, to facilitate protection of the underlying layers.

4.3.3.1.2 Leachate Collection and Removal System

The LCRS is located below the operations layer and provides a flow path for the leachate flowing into the LCRS sump. Between the operations layer and the underlying drainage gravel, a geotextile layer functions as a filter separation barrier. The geotextile prevents migration of fine soil and clogging of the drainage gravel. On the lined landfill floor the drain gravel is a minimum 0.3-meter-thick layer of washed, rounded to subrounded stone, with a hydraulic conductivity of at least 1×10^{-2} centimeter per second. In addition, a perforated high-density polyethylene drainage pipe placed within the drainage gravel accelerates leachate transport into the LCRS sump during high precipitation events. On the lined landfill floor, the drain gravel layer is underlain by a geotextile cushion resting on the primary high-density polyethylene geomembrane. The geotextile provides additional protection for the primary geomembrane on the floor of the landfill.

On the lined landfill sideslopes, the LCRS has a composite drainage net (CDN) layer composed of a geonet (which is a network of HDPE strands, interwoven and bonded to form a panel that provides a drainage pathway for fluids), with a layer of geotextile thermally bonded to each side. This CDN layer has a transmissivity of at least 3×10^{-5} meters squared per second. The CDN is used on the sideslopes to avoid problems associated with placement of clean granular material on slopes, thereby minimizing the potential for damaging the underlying liner system.

4.3.3.1.3 Primary Geomembrane Liner

The primary geomembrane liner acts both as an impermeable leachate barrier and as a flow surface, routing leachate to the primary sump. High-density polyethylene was used because of its high resistance to chemical deterioration. Generally, textured (roughened) geomembrane is used to maximize shear strength along adjacent interfaces and to reduce the potential for sliding of the liner system.

4.3.3.1.4 Primary Geosynthetic Clay Liner Layer

A primary geosynthetic clay liner (GCL) consists of a mat of bentonite placed between two geotextiles. The GCL is installed immediately beneath the primary high-density polyethylene liner on the floor of the lined landfill only. The purpose of this liner is to provide extra protection in the case of deterioration (such as stress cracking) of the primary geomembrane where operations will continue for several years.

The in-place hydraulic conductivity of the GCL is 1×10^{-8} centimeter per second or less, exceeding the WAC hydraulic conductivity requirement for the secondary soil liners. The upper surface of GCL provides a smooth uniform surface on which to place the overlying geomembrane liner.

4.3.3.1.5 Leak Detection System

The LDS provides the flow path for leachate flowing into the LDS sump. The following is a description of the system to be used in the IDF landfill.

The LDS has a CDN drainage layer on the floor, and a CDN drainage layer on the sideslopes. The CDN consist of a layer of geotextile thermally bonded to each side of the geonet. These materials and their configuration is similar to the LCRS described in Section 4.3.3.1.2, except for the absence of a drainage gravel layer and a perforated drainage pipe system on the floor of the lined landfill. The LDS will channel leachate that penetrates the primary liner system through the CDN into the leak detection sump.

The LDS serves as a secondary LCRS for the IDF. Leachate collected in the secondary sump will be measured to determine the leakage rate through the primary liner.

4.3.3.1.6 Secondary and Tertiary Geomembrane Liner

The secondary geomembrane liner, located underneath the LDS, is placed directly against the secondary compacted admix liner, except in the LDS sump area which includes a geosynthetic clay liner between the secondary geomembrane liner and the secondary compacted admix liner. For information only, the teriary geomembrane liner for the SLDS is placed directly against subgrade as per 4.3.3.1.8. The secondary and teriary geomembrane liners are similar to the primary geomembrane described in Section 4.3.3.1.3. The secondary geosynthetic clay liner material is similar to the primary geosynthetic clay liner described in Section 4.3.3.1.4.

4.3.3.1.7 Secondary Admix Liner

The secondary admix liner has a minimum 0.9-meter-thick compacted soil/bentonite admixture located immediately beneath the secondary high-density polyethylene liner, as required by WAC 173-303-665. The secondary admix liner typically consists of silty sand from local borrow sources mixed with a nominal 12 percent sodium bentonite, by dry weight. The in-place hydraulic conductivity of the admix liner is 1×10^{-7} centimeter per second or less, consistent with WAC requirements for secondary soil liners. The upper surface of the secondary admix liner is trimmed to the design grades and tolerances. The surface was rolled with a smooth steel-drum roller to remove all ridges and irregularities. The result is a smooth uniform surface on which to place the overlying geomembrane liner.

4.3.3.1.8 Subgrade/Liner System Foundation

The lined landfill in the IDF is founded in undisturbed native soils or material compacted to at least 95 %of a standard proctor maximum density (determined by ASTM D698). The liner system foundation is discussed in further detail in Section 4.3.4.

4.3.3.1.9 Access Ramp

The lined landfill has an access ramp outside the lined portion of the landfill, minimizing damage to the liner system from vehicle traffic into the lined landfill. As the landfill expands the access ramp will be reconstructed to the south of each expansion in the landfill. The access ramp design could vary as the landfill expands.

4.3.3.1.10 Landfill Expansion

The initial phase of the IDF liner was complete at the north end of the landfill. As shown in Figure 4.1, construction of the initial IDF phase completed the liner system on the north sideslope and the excavated portions of the landfill floor, east sideslope, and west sideslope. The dashed line of Figure 4.1 across the south edge of the landfill floor denotes the southern extent of the landfill liner. The liner system will be installed to extend approximately 15 meters beyond the estimated toe of slope of the first phase waste placement. This extension will also allow waste haul vehicles to be staged or unloaded over a lined area.

Termination detail for the south edge of the liner system is found in Appendix 4A, drawing H-2-830840. The south sideslope of the first phase of IDF is not lined to allow future expansion of the IDF. At the south end of the cells is a storm water berm/ditch with an infiltration area, which will capture clean runoff from the unlined south sideslope before it runs onto the lined landfill. The landfill floor slopes up 1% from north to south to allow adequate leachate collection capacity for a 25-year storm event. Each future liner construction project will connect to the south edge of the previously constructed liner and operations systems and extend the disposal area further to the south. With the expansion of the IDF in subsequent phases, access ramps for the previous phase will be destroyed and new ramps built on the south edge of the landfill.

4.3.3.2 Liner System Location Relative to High Water Table

The water table is located approximately 90 to 100 meters below the ground surface in the IDF. It is anticipated that the deepest point of the liner system is no greater than 20 meters below ground surface. Consequently, the liner systems is at least 69 meters above groundwater. The liner systems will not be affected by the water table because of this large elevational difference.

4.3.3.3 Loads on Liner System

The liner system experiences several types of stresses during construction, operation, and closure/postclosure periods. The following sections discuss the types of stress and analytical methods used to design the IDF liners.

4.3.3.3.1 Liner Stress

The geosynthetic liner components experience some stress particularly during installation and before placing waste in the lined landfill but also during the entire lifecycle. The high-density polyethylene liner is temperature sensitive, expanding, and contracting as liner temperatures increase and decrease. Thermally induced stresses could develop in the liner if deployment and anchoring occur just before a significant decrease in the liner temperature. The operations layer is sufficiently thick to ensure liner stress remains below the yield strain and stress. Administrative procedures will prevent loading and backfilling of waste exceeding applicable thermal limits due to recent vitrification processes to avoid potential liner damage.

The drainage gravel has the potential to produce localized stress on the geomembrane liner during gravel placement with construction equipment. The geotextile cushion placed at the base of the drainage gravel protects the underlying geomembrane. A puncture analysis was performed to select a sufficiently thick cushion geotextile. This analysis incorporated expected construction vehicle ground pressures and design drainage gravel gradation listed in the construction specifications. If required, engineering controls such as independent foundations will be installed to minimize liner stress involved with large package disposal.

On the landfill sideslopes, tension induced by liner-component load transfer is not anticipated, because the liner interface effective shear strength angles are higher than the sideslope angles. The liner component interface strengths were determined by laboratory direct shear tests. Both static and dynamic stability analyses were performed, using standard methods, design accelerations, and factors of safety.

Stress on the geomembrane in the anchor trench also was evaluated during detailed design. Wind uplift and thermal expansion and contraction could cause stress in the geomembrane during construction. However, these stresses are not be a problem, because the stress is relatively low as compared to the tensile strength of the liner. In addition, these stresses are minimized by using sand bags to control liner position during liner panel placement and welding, as well as keeping the anchor trench open until the liner is stabilized with overlaying fill material. Placement of overlaying fill material is controlled to limit stress buildup in the liner. The stress is not present after construction, because of the weight and insulating properties of the operations layer.

4.3.3.3.2 Stress Resulting From Operating Equipment

Operations equipment provides a design load case on the IDF liner, which was analyzed as part of the IDF design (Appendix 4A). The analyses show that the 0.9-meter-thick operations layer dissipates stress produced by the operating equipment and is sufficient to protect the IDF liner system.

4.3.3.3.3 Stress from Maximum Quantity of Waste, Cover, and Proposed Closure/Postclosure Land Use

When the lined landfill is full and the cover system is in place, the liner system will experience a static load from the overlying waste, backfill, and cover materials. No significant increase in stresses on the liner system is anticipated from closure/postclosure land use. The maximum design load of material overlying the liner system includes an allowance for the cover system. Analyses include puncture protection of the geomembrane by the cushion geotextile, and decrease in transmissivity of CDN drainage layers. Materials were specified based on the ability of the materials to perform adequately under closure/postclosure loading conditions.

Dynamic stress on the liner system will result primarily from ground accelerations during seismic events. Both static and dynamic analyses were performed on the subgrade and liner components based on the finished configuration of the empty landfill. Under closure/postclosure conditions, the waste, backfill, and cover materials will tend to buttress the liner system, resulting in greater stability relative to the operational phase. All of the analyses verified adequate stability for the IDF.

4.3.3.3.4 Stresses Resulting From Settlement, Subsidence, or Uplift

The subgrade settlement produced by waste loading essentially will be elastic because of the coarse-grained, noncohesive, and drained nature of the soil. The subgrade rebounded during the excavation phase of construction and will settle as the landfill is filled. The compacted admix liner will consolidate under waste loads. The total settlement will be a combination of the subgrade elastic and the admix consolidation settlements. These settlements were analyzed with standard methods during detailed design of the lined landfill. In general, differential settlements will be expected to occur primarily across the lined landfill sideslopes as the thickness of waste decreases from maximum to zero. The geosynthetic liner components were analyzed, the anticipated strains likely will not produce any appreciable stresses in the liner system.

The potential for subsidence-induced stress is believed to be negligible based on the following information:

- The soils underlying the IDF tend to be coarse-grained soils, sands, and gravels, in a relatively dense configuration that will not be subject to piping effects that could transport soil resulting in subsidence.
- The groundwater level is deep, at least 69.6 meters below the base of the lined landfill, and will not affect bearing soils.
- No natural voids, or man-made mining or tunneling has been noted. If the groundwater level was lowered substantially and consolidation occurred in the aquifer, local site-specific subsidence would be negligible because of the depth of the groundwater below the lined landfill.

The potential for stresses resulting from uplift on the liner system also is expected to be negligible. The seasonal groundwater level is very deep, and higher-elevation perched groundwater likely will not develop because of the absence of aquitards in the coarse-grained Hanford formation underlying the IDF. The coarse-grained nature of the Hanford formation also promotes rapid, primarily vertical, infiltration, which means it is unlikely that infiltration from outside the lined landfill boundary would be transported laterally underneath the landfill liner. Gas pressures similarly are unlikely to develop because of the

absence of any organic material that could generate significant subsurface gas (from organic material decomposition) and the coarse-grained, highly permeable sands and gravels underlying the landfill.

4.3.3.3.5 Internal and External Pressure Gradients

Pressure gradients across the liner caused by liquids or gases will be expected to be negligible. Internal pressures due to liquids will be controlled by the leachate collection and removal system. Because leachate will be removed from the flat 50-foot by 50-foot LCRS sump in a timely manner, there will be minimal liquid head on the liner (less than 30.5 centimeters according to WAC regulations). Gas generated internally is expected to be minimal because waste is inorganic and non-reactive. However, any pre-closure internally generated gas will be vented through either the waste or the leachate collection system. The closure cover design will consider gas venting.

External pressures on the liner system is expected to be minimal. Gas pressures will be negligible because the subgrade soil contains no gas producing materials and is highly permeable, readily venting any potential gas to the atmosphere. External pressure from liquids is not anticipated because of the deep groundwater table and the highly permeable foundation soils.

4.3.3.4 Liner System Coverage

The liner system covers all soils underlying the lined landfill and extends over the crest of the sideslopes into the anchor trench (Figure 4.2, Detail 3).

4.3.3.5 Liner System Exposure Prevention

No geosynthetic or admix components of the liner system are exposed to the atmosphere. The minimum 0.9-meter-thick operations layer covers the entire lined landfill surface. This layer serves both as a physical protective barrier and as thermal insulation, protecting the admix layer from desiccation and frost damage.

Excessive erosion, such as gullying, will be repaired by replacing the eroded soil. Dust suppression agents will be used to prevent excessive wind erosion on the landfill sideslopes. The dust suppression agents will bind the surface of the operations layer and will minimize wind entrainment of soil.

4.3.4 Liner System, Foundation

The following sections discuss the foundations beneath the liner systems.

4.3.4.1 Foundation Description

At the IDF, the Hanford formation consists mainly of sand dominated facies with lesser amounts of silt dominated and gravel dominated facies. Where sands are present, these sands are underlain by the Hanford formation. Here, the Hanford formation has been described as poorly sorted pebble to boulder gravel and fine to course grained sand, with lesser amounts of interstitial and interbedded silt and clay.

The two geologic units pertinent to the IDF lined landfill are summarized as follows.

Recent eolian sand: The sand is light olive gray in color and has a density that is loose at the surface but becomes compact with depth. The sand has a fine to medium grain size and includes little to some nonplastic silt-sized fines. The deposit is homogeneous except for a distinguishable layer of volcanic ash in some locations.

Glaciofluvial flood deposit: This deposit has well graded mixtures of sands and gravels with trace to little nonplastic silt-sized particles. The gravel content can vary with depth, and the deposit can become predominantly gravel. This coarse-grained deposit is part of the Cold Creek Bar, which was formed during the Pleistocene Epoch by glacial outburst flooding.

4.3.4.2 Subsurface Exploration Data

Geological site investigations were used to support the detailed design of the landfill. The investigations consisted of a review of historical data, including well logs (Chapter 5.0), exploratory borings, and surface pit samples data. Because the foundation soils are relatively consistent over broad areas, the need for additional borings and geophysical investigations will be determined on a case-by-case basis. If boreholes are drilled, penetration test data will be collected to determine the strength of the foundation materials in situ.

4.3.4.3 Laboratory Testing Data

Laboratory testing will be performed on the surface soil samples and borings, both from the lined landfill site and from potential borrow source locations as follows. Testing will be performed to classify soils, provide input parameters to verify engineering analyses, and for preparing material and construction specifications. The following tests will be performed on the soil samples:

- Visual classification (ASTM D2487)--to classify soils
- Natural moisture content (ASTM D2216)--for input to engineering analyses and preparing construction specifications
- Particle size analysis (ASTM D422 or D1140/C136)--for classification and input to engineering analyses
- Moisture-density relationships (ASTM D698 or D1557)--for preparing compaction specifications

Laboratory testing will be performed according to the most recent versions of ASTM methods or other recognized standards. Additional tests will be performed as needed.

4.3.4.4 Engineering Analyses

The subgrade will be required to support the liner system and overlying materials (waste, fill, and cover) without excessive settlement, compression, or uplift that could damage the liner system. This section describes the design approach used to satisfy these criteria.

4.3.4.4.1 Settlement Potential

The subgrade settlement produced by waste loading essentially will be elastic because of the coarse-grained, noncohesive, and drained nature of the soil. The subgrade will rebound during the excavation phase of construction and will settle as the landfill is filled. An elastic settlement analysis using standard methods was performed and results indicate the magnitude of the total and differential settlement is within performance limits.

4.3.4.4.2 Bearing Capacity

The bearing capacity of the subgrade soil will need to support structures such as leachate collection tanks. The construction specifications typically will require that the upper portion of the subgrade soil and all structural fill be moisture conditioned and compacted to at least 95 percent of the maximum standard Proctor dry density (ASTM D698). Maximum allowable bearing capacities for foundations have been established using standard geotechnical methods. Bearing capacities for the types of soils expected at the IDF typically are greater than the maximum expected loads from the support structures.

4.3.4.4.3 Stability of Lined Landfill Slopes

The lined landfill was constructed in eolian sand and the underlying coarse-grained Hanford formation. In granular, cohesionless, and drained soils such as these, the stability of the slope will be related primarily to the maximum slope angle. Both veneer and global stability analyses were performed to

determine both static and dynamic sideslope stability. Results demonstrate adequate stability for the IDF throughout its design life.

4.3.4.4.4 Potential for Excess Hydrostatic or Gas Pressures

Because the seasonal high-water level is at least 69 meters below the base of the deepest lined landfill, no external hydrostatic pressure will be expected from this source. Because of the coarse-grained nature of the foundation soils, any infiltration of surface water around the perimeter of the lined landfill will be expected to travel primarily downward. Therefore, infiltration should not cause substantial pressure on the exterior of the liner system. Internal hydrostatic pressure from leachate will be negligible because the leachate will be removed from the lined landfill to limit head on the liner.

Gas pressure exerted externally on the liner system is expected to be negligible, because no gas-generating material (i.e., organic material) is expected in the foundation soils. If any gas were generated below the liner system, little pressure buildup would occur because of the unsaturated coarse-grained nature of the foundation soils, which would vent the gas to the atmosphere. Internal gas pressure buildup will not be anticipated, because wastes are generally inorganic and have low gas generating potential, and the leachate collection system will be vented to the atmosphere and dissipates any gas.

4.3.4.4.5 Seismic Conditions

Potential hazards from seismic events will include faulting, slope failure, and liquefaction. Disruption of the lined landfill by faulting is not considered a significant risk because (1) no major faults have been identified at the IDF (DOE/RW-0164) and (2) only one central fault at Gable Mountain on the Hanford Site shows evidence of movement within the last 13,000 years. The potential for slope failure is considered low, because granular materials typically have high strengths relative to the maximum sideslope angles expected for the lined landfill. Liquefaction will occur in loose, poorly graded granular materials that are subjected to shaking from seismic events. Saturated soils will be most susceptible because of high dynamic pore pressures that temporarily lower the effective stress. During this process, the soil particles will be rearranged into a denser configuration, with a resulting decrease in volume. The foundation materials at the IDF is not considered susceptible to liquefaction because the materials are well graded granular soils that are unsaturated and relatively dense.

The IDF support building (not sited within the TSD boundary) will be located in Zone 2B as identified in the Uniform Building Code (ICBO 1997).

4.3.4.4.6 Subsidence Potential

In general, subsidence of undisturbed foundation materials would be the result of dissolution, fluid extraction (water or petroleum), or mining. The potential for subsidence will be negligible at the IDF based on the following.

- The soils underlying the IDF are coarse-grained sands and gravels, in a relatively dense configuration, which are not subject to piping that can cause transport of soil and resulting subsidence.
- The groundwater level is deep, at least 69 meters below the base of the lined landfill, and does not affect bearing soils.
- The soil and rock types below the IDF are not soluble.
- No mining or tunneling has been noted. If the groundwater level was lowered substantially and consolidation occurred in the aquifer, local site-specific subsidence would be negligible because of the depth of the groundwater table below the lined landfill.

4.3.4.4.7 Sinkhole Potential

Borings in and around the IDF have not identified any soluble materials in the foundation soils or underlying sediments. Consequently, the potential for any sinkhole development is negligible.

4.3.5 Liner System, Liners

The following sections discuss the individual components of the IDF liner systems.

4.3.5.1 Synthetic Liners

As described in Section 4.3.3, the synthetic liners act as an impermeable barrier for leachate migration (Figure 4.2). The synthetic liners consist of high-density polyethylene material that make the liners resistant to chemical deterioration. Section 4.3.3 describes the synthetic liner system in detail.

4.3.5.2 Synthetic Liner Compatibility Data

During detailed design of the lined landfill, the composition of the expected leachate was estimated. Expected leachate composition was based on known waste composition, process information, leachate from other operating lined landfills, and similar sources of data. Leachate constituents were compared to manufacturers' chemical compatibility data for synthetic liner components. In addition, the results of previous chemical compatibility testing and studies were evaluated against leachate composition. Information gained from this evaluation was used to select a liner that will be compatible with the expected leachate.

Compatibility testing for leachate tank liner material is planned for construction. An immersion test program is included in the technical specifications for the tank liner (anticipated to be XR-5 material). The immersion-testing program will require the construction general contractor to submit tank liner samples to the design engineer for immersion testing as part of the submittal and certification process for the tank. Immersion testing will follow EPA 9090A (and ASTM) test protocols.

During landfill operation, the compatibility of waste receipts with the liner will be ensured. The compatibility of the waste constituents with the liner material will be established by laboratory testing if determined to be necessary, based on waste type and concentrations. Such tests will follow EPA Method 9090A or other appropriate methods. Test results will be evaluated using statistical methods and accepted criteria (based on past projects and agency acceptance) for liner/leachate compatibility.

4.3.5.3 Synthetic Liner Strength

As discussed in Section 4.3.3.3, the liner system will experience loads from several sources. During the detailed design process for the landfill, the strength of liner system materials was evaluated against these loads. The analysis indicated an adequate factor of safety for liner system materials.

Seams in geomembranes is a critical area; however, correct installation methods make the seams stronger than the surrounding material. Detailed installation and testing requirements will be included in the construction quality assurance plan (Section 4.3.7.3) to ensure that the liner is constructed properly. In addition, methods will be established to demonstrate adequate seam strength is achieved during installation.

Seaming requirements for the geotextilesand CDN: These materials were overlapped sufficiently to provide complete area coverage, and relatively light seams were used to hold the panels in position during construction, seam strength requirements for these materials will be negligible.

4.3.5.4 Synthetic Liner Bedding

The primary geomembrane liner is in contact with the GCLand geotextile cushion underlying the drainage gravel.

The secondary geomembrane liner is in direct contact with the compacted admix layer. This type of subgrade is typical for flexible geomembrane liners.

With respect to the drainage gravel and operations layers, the geomembranes are protected by overlying geotextile cushion or CDN layers. These geotextiles were designed to provide adequate protection during construction and operation to withstand the loads discussed in Section 4.3.3.3.

4.3.5.5 Soil Liners

The IDF landfill is lined with a minimum (0.9-meter thick) layer of compacted soil/bentonite mixture (admix) under the secondary geomembrane liner. This layer has an in-place hydraulic conductivity of less than 1 x 10^{-7} centimeter per second. The soil component of the admix is silty fine sand or similar material from areas near the IDF. Approximately 12 percent bentonite by dry weight was added to the fine soil to achieve sufficiently low hydraulic conductivity; however, the percent might vary.

4.3.5.5.1 Material Testing Data

Laboratory testing will be performed on soil liner materials to confirm input parameters for engineering analyses and for refining material and construction specifications.

Before constructing the lined landfill, a full-scale test fill of the admix material will be conducted. The primary purpose of the test fill will be to verify that the specified soil density, moisture content, and hydraulic conductivity values will be achieved consistently using proposed compaction equipment and procedures. In-place density will be measured using both the nuclear gauge (ASTM D2922) and sand cone (ASTM D1556) methods. In-place hydraulic conductivity will be determined from a two-stage infiltration from a borehole (ASTM D6391). Admix hydraulic conductivity will be estimated from thin-wall tube samples (ASTM D1587) obtained from the test fill and tested in the laboratory (ASTM D5084). Details of the test fill are presented in the Construction Quality Assurance Plan (Appendix 4B). During construction, field density (e.g., ASTM D2922, D2167, and/or D1556) and moisture content (ASTM D2216) will be measured periodically. Thin-wall tube samples (ASTM D1587) will be taken at regular intervals and will be tested for hydraulic conductivity (ASTM D5084). Additional details of field-testing during construction will be presented in the Construction Quality Assurance Plan.

Dispersion and piping in the admix are not considered likely because the hydraulic conductivity, and thus the flow velocity, will be very low, making it difficult to move the soil particles or otherwise disrupt the soil fabric. In addition, the admix will be well graded, so the component particles will tend to hold each other in place. Therefore, testing for these characteristics will not be necessary.

4.3.5.5.2 Soil Liner Compatibility Data

As discussed in Section 4.3.5.2, expected leachate composition was determined as part of detailed landfill design. The results of previous chemical compatibility testing and studies were evaluated against leachate composition to determine the effect of leachate on soil liner composition or hydraulic conductivity. The tests followed the procedures of ASTM D5084 (flexible wall parameter) and considered the effects of radiation on the soil liner materials.

4.3.5.5.3 Soil Liner Thickness

The IDF was designed to operate to minimize the leachate head over the liner systems. Design of the primary liner system included an additional clay layer (the primary GCL layer, which was previously described in Section 4.3.3.1) underlying the primary HDPE geomembrane to further minimize liner leakage from the primary liner. Note that only a single geomembrane is required under WAC 173-303 for the primary liner.

Calculations evaluated the effectiveness of the primary soil liner as a barrier to leachate. Leakage analyses were performed for the primary liner system using EPA's Hydrologic Evaluation of Landfill Performance (HELP) Model (Schroeder et al. 1997). Estimated leakage rates were compared to the Action Leakage Rate (ALR, which is defined in WAC 173-303-665[8] as "the maximum design flow rate that the leak detection system … can remove without the fluid head on the bottom liner exceeding 1 foot"), and were determined to be much lower than the ALR. This demonstrates the benefit of the GCL included in the primary bottom-lining system, which provides a composite lining system and minimizes actual leakage through the bottom primary lining system.

Overall, the IDF is designed to actively convey and collect leachate from the liner areas of the facility to minimize leachate buildup over the liners. Leachate is conveyed to the LCRS and LDS sumps for active removal from the facility. In addition, the LCRS sump area has been designed with a 6-inch-deep sump trough where the LCRS pumps are positioned to minimize the area of the sump that has a permanent liquid level (below the pump intake/shutoff elevation). Both the LCRS and LDS sump pumps will be operated throughout the Active Life of the facility and into the post-closure period until leachate generation has essentially ceased. By actively removing leachate from the IDF, head buildup is minimized, which in turn minimizes leakage through both the primary and secondary liner systems.

4.3.5.5.4 Soil Liner Strength

The expected loads on the liner system are discussed in Section 4.3.3.3. Significant stresses in the soil liner that were considered include (1) stresses from the weight of the liner system, (2) stresses on the interface with the overlying materials, and (3) stresses during construction.

Stresses will be present on the sideslopes from the weight of the operations layer and soil liner itself. Using material properties determined from laboratory testing, the stability of the soil liner was evaluated under both static and dynamic loading conditions. Standard methods of slope stability analysis were used. Interface strengths were found to provide adequate veneer stability for the liner system. Interface strength is the shear strength that occurs between layers of liner materials at their interface boundary, as established by ASTM test methods.

The primary concern during construction will be bearing failure caused by the weight of overlying soil components of the liner system (e.g., drainage gravel on the floor) and the construction equipment used to spread these materials. Strength parameters developed from laboratory testing and standard analytical methods were again used to determine that adequate stability and bearing capacity exist for the IDF liner system.

4.3.5.5.5 Engineering Report

An engineering report was prepared for the lined landfill as part of the definitive design document package. The report describes the design of the liner system and includes supporting calculations. The critical systems IDF Design Report is provided in Appendix 4A. The final IDF design report was prepared under the supervision of a professional engineer registered in Washington State.

4.3.6 Liner System, Leachate Collection and Removal System

The purpose of the leachate collection and removal system is to provide sufficient hydraulic conductivity and storage volume to collect, retain, and dispose of, in a timely manner, fluids falling on or moving through the waste. The primary leachate collection and removal system provides the preferential path along which the leachate flows into the primary sump. The secondary leachate collection and removal system (also called the leak detection system) is located between the primary and secondary geomembranes. The secondary leachate collection and removal system provides the preferential path along which any fluids leaking through the primary liner system flow to the secondary sump.

The collected leachate will be pumped to a leachate collection tank, screened and/or sampled, and transferred to a permitted treatment and disposal unit.

4.3.6.1 System Operation and Design

The lined landfill operates in a way that ensures the bottom liner is maintained as dry as possible, and the head on the top liner does not exceed 30.5 centimeters measured above the flat 50-foot-by-50-foot LCRS sump HDPE liner. In extreme conditions (i.e., in excess of a 25-year storm event), the head on the top liner could exceed 30.5 centimeters for short durations. The operating methodology, described in the following paragraphs, ensures that liquids on the bottom liner are removed continuously before liquids could accumulate and exceed 30.5 centimeters for the design storm event.

Both leachate collection systems operate either manually or automatically. When operated automatically, liquid level sensors will cycle the pumps on and off, in response to rising and falling leachate levels. The leakage rate through the top liner will be calculated during Active Life to demonstrate that the leakage rate is less than the 'action leakage rate' (Chapter 6). Data to support the leakage rate calculations during Active Life will be obtained either from the flow totalizer in the secondary leachate collection pump discharge line or from the liquid level gauges. Collected leachate from the secondary leachate collection system is pumped to the leachate collection tank.

The design of the primary and secondary leachate collection systems is described in Section 4.3.3.1. System geometry was completed and material specifications were developed during the detailed design process. The leachate collection and removal system design comply with WAC 173-303 requirements and applicable guidance.

Each sump has a thick layer of gravel designed to provide high hydraulic conductivity and storage capacity. Leachate is removed from the sumps by a pump installed in sideslope riser pipes. Pressure transducers monitor leachate level in the sumps and provide appropriate signals to the pump control system. All pumps and transducers are removable for maintenance, calibration, and related activities.

4.3.6.1.1 Primary System

The base of the leachate collection and removal system is defined by the primary geomembrane. On the floor of the lined landfill, the primary geomembrane is overlain by geotextile cushion, and the granular drainage layer. The granular drainage layer drains to the primary sump and a perforated pipe is located along the centerline of the cell to increase flow capacity to the primary sump. Geotextile layers at the top of the leachate collection and removal system prevent migration of fine soil particles into the gravel or geonet, thus prevent clogging. On the sideslopes, a CDN layer is over the geomembrane. The CDN includes bonded geotextiles on both sides of a geonet that increase the interface shear strength. Because of construction difficulties in placing a 30.5-cm thick gravel layer on 3:1 sideslopes, no drainage gravel was placed on the sideslopes.

The leachate collection and removal system is covered by the operations layer. The layer is a minimum 0.9-meter thick, and provides protection for the underlying liner and drainage materials. The operations layer covers both the landfill floor and the sideslopes.

The leachate collection and removal system was designed to accommodate the 25-year, 24-hour storm, as required by WAC regulations. However, the EPA recognizes the need to store temporarily leachate from such rare events (EPA 1985). Should a storm event that exceeds the 25-year, 24-hour storm event occur, the leachate collection and removal system sump was designed to store temporarily leachate at a depth greater than 30.5 centimeters, as opposed to the alternative of constructing an excessively large leachate collection tank.

The leachate collection and removal system sump is equipped with two sump pumps. One pump is a high capacity pump capable of rapid removal of large volumes of leachate, and is suitable for the transfer of batch quantities of leachate, and can handle the larger volumes of leachate anticipated from the 25-year,

24-hour storm event. The other pump is a low-capacity submersible pump located in the base of the sump. The sump pumps are located in a sump trough. The sump trough was designed to contain the leachate below the intake of these pumps, within the smallest possible area, to minimize the residual leachate volume after each pumping cycle. The pumps are fabricated from stainless steel or other corrosion resistant material.

4.3.6.1.2 Leak Detection System

The base of the LDS is formed by the secondary geomembrane. The leak detection system is similar to the LCRS, except that the perforated collection pipe is not included. The perforated pipe is not be needed because high flow capacity is not required for the low leachate volumes.

The LDS drains to the LDS sump, which is located immediately below the LCRS sump. Because of the low volumes, the LDS is equipped with only one low-capacity submersible pump to meet WAC 173-303-665(8)(a).

4.3.6.1.3 Response Action Plan

In compliance with regulatory requirements, a response action plan (Appendix 4C) was prepared for the lined landfill. In accordance with EPA guidance, the action leakage rate was calculated as "the maximum design flow rate that the leak detection system can remove without the fluid head on the bottom liner exceeding 30.5 centimeters" (EPA 1992). If the action leakage rate were exceeded, DOE will do the following:

- Notify the appropriate regulatory authority in writing of the exceedence within 7 days of the determination
- Submit a preliminary written assessment to the appropriate regulatory authority within 14 days of the determination, on the amount of liquids, likely sources of liquids, possible location, size, cause of any leaks, and short-term actions taken and planned
- Determine to the extent practicable the location, size, and cause of any leak
- Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether the unit should be closed
- Determine any other short-term and/or long-term actions to be taken to mitigate or stop any leaks
- Within 30 days after the notification that the action leakage rate has been exceeded, submit to the appropriate regulatory authority the results of the analyses specified in the following paragraphs, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, DOE will submit to the appropriate regulatory authority, a report summarizing the results of any remedial actions taken and actions planned.

The leachate will be analyzed for RCRA constituents as appropriate. A procedure will be in place to address details of analysis (i.e., analyses, constituents, test methods, etc.). If the analytical results on leakage fluids indicate that these constituents are present, and if the constituents can be traced to a particular type of waste placed in a known area of the lined landfill, it might be possible to estimate the location of the leak. In addition, waste packages might not undergo enough deterioration during the active life of the landfill to permit escape of the contents; the leachate might be clean or the composition too general to show a specific source location.

If the source location cannot be identified, large-scale removal of the waste and operations layer to find and repair the leaking area of the liner would be one option for remediation. However, this risks damaging the liner. In addition, waste would have to be handled, stored, and replaced in the landfill. Backfill would need to be removed from around any waste packages to accomplish this. If the waste

packages were damaged during this process, the risk of accidental release might be high. For these reasons, large-scale removal of waste and liner system materials will not be a desirable option and will not be implemented except as a last resort.

The preferred alternative will depend on factors such as the amount of waste already in the landfill, the rate of waste receipt, the chemistry of the leachate (i.e., is it clean?), the availability of other disposal units, and similar considerations. Therefore, no single approach will be selected at this time. If necessary, an interim solution could be implemented while the evaluation and permanent remediation were performed. Examples of potential approaches include the following.

- The surface of the waste could be graded to direct run-off into a shallow pond. The surface would be covered with the low-hydraulic conductivity layer (geomembrane). Precipitation would be pumped or evaporated from the pond and would not infiltrate the waste already in the lined landfill. Waste would be placed only during periods of dry weather, and stored at other onsite TSD units at other times. This type of approach also could be used to reduce leakage immediately after the action leakage rate was exceeded, while other remediation options were evaluated.
- Partial construction of the final closure cover could begin earlier than planned. This would reduce infiltration into the lined landfill, and possibly reduce the leakage rate if the cover were constructed over the failed area.
- A layer of low-hydraulic conductivity soil could be placed over the existing waste, perhaps in conjunction with a geomembrane, to create a second 'primary' liner higher in the lined landfill. This new liner would intercept precipitation and allow its removal.
- A rigid-frame or air-supported structure could be constructed over the landfill to ensure that no infiltration occurs. Although costly, this approach could be less expensive than constructing a new landfill.

In general, the selected remediation efforts will be progressive. Those remediation methods that are judged the least difficult and the most cost effective will be used first. If these efforts are not effective, more difficult or expensive options would be used.

4.3.6.2 Equivalent Capacity

The CDN drainage layers used will be available commercially and will have equivalent flow capacity to a 30.5-centimeters layer of granular drainage material with a hydraulic conductivity of 1×10^{-2} centimeter per second.

4.3.6.3 Grading and Drainage

In accordance with EPA guidance, all areas of the lined landfill floor (except the sump bottoms) are graded at a slope of at least 2 percent towards the centerline of each cell. The centerline of each cell has a 1 percent slope lengthwise towards the sump, to facilitate drainage and avoid ponding on the liners. Grading tolerances have been established to ensure proper slope is maintained.

4.3.6.4 Maximum Leachate Head

The maximum head on the primary liner is less than 30.5 centimeters, except for rare storm events as discussed in Section 4.3.6.1 and the LCRS sump trough. The sump was sized and designed to provide adequate surge storage to prevent leachate build up on the primary liner.

4.3.6.5 System Compatibility

The primary and secondary leachate collection and removal systems is composed of inert geologic materials (sand and gravel), high-density polyethylene, and other geosynthetic materials such as polypropylene. As described in Section 4.3.5.2, the geosynthetics were evaluated for compatibility with the expected leachate. To ensure that the geosynthetics used in the lined landfill are similar chemically to

those evaluated, manufacturers will be required to submit quality control certificates and other manufacturing information on all materials.

Before a new waste constituent, not previously analyzed (based on a dangerous waste number), is allowed in the lined landfill, the waste constituent will be evaluated for compatibility with the liner (e.g., identified in 9090A test results or other appropriate testing methods, etc.). Other materials could contact the leachate, for example:

- HDPE and Polyvinyl chloride (PVC) piping will be used
- Polyvinyl chloride and other plastics in miscellaneous uses
- Leachate tank will use a chemically resistant flexible geomembrane liner system.

Compatibility of these materials with the expected leachate was considered in the landfill liner system design. Compatibility of these materials will be of lesser concern, because items that consist of these materials will be located entirely within the containment area. Failure of these items would not result in a dangerous waste release, and the materials would be replaced or repaired.

4.3.6.6 System Strength

Stability of drainage layer, strength of piping, and prevention of clogging are discussed in the following sections.

4.3.6.6.1 Stability of Drainage Layers

As described in Sections 4.3.3.3 and 4.3.5.3, the stability of the liners and leachate collection and removal systems on the sideslopes was evaluated as part of detailed design (Appendix 4A). To provide sufficiently high shear strengths at the interfaces between geosynthetic components, textured geomembranes and thermally bonded CDNs are used.

Bearing capacity of the drainage and sump gravels is expected to be adequate, based on typical strength values for granular materials.

The transmissivity of the drainage layers under the combined load of the waste and cover was addressed in the design and will be adequate to support leachate removal.

4.3.6.6.2 Strength of Piping

The drainpipes in the primary drainage and sump gravel and sideslope riser pipes are high-density polyethylene pipe. During detailed design, the required wall thickness of the pipe was determined according to the manufacturer's recommendations and standard analytical methods used by the piping industry (Appendix 4A). In these analyses, the ultimate load (derived from the estimated weight of the waste and cover) was used, the allowable deflections were limited to 5 percent, and conservative values for soil modulus and lateral confinement were assumed.

4.3.6.7 Prevention of Clogging

The geotextiles that separate the drainage layers from adjacent soil layers was selected based on the ability of the geotextiles to retain the soil and to prevent the soil from entering the leachate collection and removal systems. In addition, the amount of fine material in the drainage and sump gravels was limited by specification to less than a few percent, and is not expected to cause clogging problems (Appendix 4A). Because the waste disposed in the lined landfill will be required to satisfy LDR (RCW 70.105.050(2), WAC 173-303-140, and 40 CFR 268), the amount of organic material is minimal, and consequently biologic clogging will not be a problem.

4.3.7 Liner System, Construction and Maintenance

Details relating to the liner system construction and maintenance are discussed in the following sections.

4.3.7.1 Material Specifications

Material specifications are provided in the following sections for each of the materials used in the liner system.

4.3.7.1.1 Synthetic Liners

As described in Section 4.3.3.1, both the primary and secondary geomembrane liners consist of high-density polyethylene. As described in Section 4.3.3.1.4, the primary barrier also contains a geosynthetic clay liner placed on the floor area only. Detailed specifications were prepared for the lined landfill as part of the design process.

4.3.7.1.2 Soil Liners

As described in Section 4.3.3.1, the soil liner consists of imported bentonite (expansive clay) blended with fine soil deposits on or next to the IDF. The fine soil was free of roots, woody vegetation, rocks greater than 2.54 centimeter in diameter, and other deleterious material. The bentonite content is dependent on the characteristics of the fine soil. Mixing was performed under carefully controlled conditions in a pugmill or other approved alternatives. The admix was placed and compacted to achieve an in-place hydraulic conductivity of 1×10^{-7} centimeter per second or less. The final surface of the soil liner was rolled smooth before placing the overlying geomembrane. Additional specifications were prepared for the lined landfill as part of the design process.

4.3.7.1.3 Leachate Collection and Removal System

Drainage and sump gravel consisted of hard, durable, rounded to subrounded material. The gravel was washed and the amount of fine material (i.e., passing the number 200 sieve) was limited to a few percent. The hydraulic conductivity of the gravel is 1×10^{-2} centimeter per second or greater. Additional specifications were prepared as part of the design process.

For geotextiles and geonets, the composition, thickness, transmissivity, unit weight, apparent opening size, strength, and other properties were determined during detailed design based on results of engineering analyses, experience, and industry standard approaches.

4.3.7.2 Construction Specifications

Construction requirements for major components of the lined landfill are summarized in the following sections.

4.3.7.2.1 Liner System Foundation

The excavated subgrade surfaces was moisture conditioned and compacted as required to achieve the specified compaction before placing the admix layer.

4.3.7.2.2 Soil Liners

The soil and bentonite was blended thoroughly and moisture conditioned so that the admix is uniform and homogeneous throughout. The admix layer was placed in loose lifts and compacted so that the compacted lift meets the requirements of the Construction Quality Assurance Plan. Each new lift of

admix was kneaded into the previously placed lift. The methods for admix preparation, type of compaction equipment, number of passes, and other details of the placement process was determined by constructing a test fill section before placing admix in the lined landfill.

4.3.7.2.3 Synthetic Liners

To protect the overlying geomembranes, the admix surface is smooth and free of deleterious material. In all cases, the high-density polyethylene liner was deployed with the length of the roll parallel to the slope. Adjacent panels were overlapped and thermally seamed using fusion or extrusion methods. Seams were inspected continuously using air pressure tests. A vacuum box was used in areas where air pressure tests cannot be used (e.g., extrusion weld areas). Destructive seam tests (ASTM D4437) (peel and adhesion) were performed on samples taken at regular intervals. Placing the overlying geosynthetic layers when practicable will protect the geomembranes.

4.3.7.2.4 Leachate Collection and Removal Systems

Drainage and sump gravel was placed and spread carefully over the underlying geosynthetics using suitable equipment to prevent damage. Hauling and placing equipment will operate on a minimum thickness of soil above any geosynthetic layer to avoid damage. Geosynthetic layers in the leachate collection and removal system were deployed, overlapped, and joined (e.g., tying for geonets, sewing for geotextiles) according to standard industry practice and the manufacturers' recommendations. Drainage and riser pipes were installed in the landfill. Pipes were bedded carefully and the landfill was backfilled to provide adequate lateral support. Pumps and other mechanical components are installed according to manufacturers' recommendations.

4.3.7.3 Construction Quality Control Program

A construction quality assurance plan (Appendix 4B) will be used during lined landfill construction and establishes in detail the following in accordance with WAC 173-303-335:

Program must include observations, test, and measurements to ensure:

- Proper construction of all components of the liners, leachate collection and removal system,
- Conformity of all materials used in the design.

4.3.7.4 Maintenance Procedures for Leachate Collection and Removal Systems

The accessible components of the leachate collection and removal system will be maintained according to preventive maintenance methods. These methods will require periodic testing to prove that the equipment, controls, and instrumentation are functional and are calibrated properly. Testing intervals will be derived from applicable regulations and manufacturer's recommendations. All pumps and motors will be started or bumped monthly or at intervals suggested by the manufacturer, first, to demonstrate that the pumps and motors are functional and second, to move the bearing(s) so that the bearing surfaces do not seize or become distorted. Instruments will be calibrated annually or at intervals suggested by the manufacturer. When applicable, the preventive maintenance methods will include calibration instructions. The following instruments will require annual calibration:

- LCRS sump level indicator
- LDS sump level indicator

Other instrumentation inside the leachate handling and storage facilities will also require routine maintenance.

4.3.7.5 Liner Repairs during Operations

Because of the 0.9-meter-thick operations layer, damage to the liner system is not expected. If damage did occur, the operations layer could be removed laterally as far as required. Underlying geosynthetic and gravel layers will be removed until an undamaged layer is encountered. The damaged layers will be repaired and replaced from the lowest layer upwards using similar methods to those employed during construction. Most repairs to the geomembranes will be performed using a patch, which will be placed, welded, and tested by construction quality assurance personnel.

4.3.8 Run-On and Runoff Control Systems

Because of the sandy soils, small drainage area, and arid climate at the IDF, stormwater run-on and run-off will not be expected to require major engineered structures. Interceptor and drainage ditches will be adequate for run-on and run-off control. The 25-year, 24-hour precipitation event was the design storm used to size the lined landfill systems. Beyond this, surface water evaluation is highly site-specific, and appropriate analyses were performed as part of detailed design for the lined landfill.

4.3.8.1 Run-on Control System

Run-on will be controlled by drainage ditches or berms around the perimeter of the lined landfill. Any overland flow approaching the landfill will be intercepted by the ditches or berms and will be conveyed to existing drainage systems or suitable discharge points. All the drainage ditches or berms were designed to handle the peak 25-year flow from the potential drainage area. By using low channel slopes, design flow velocities in the ditches will be maintained below established limits for sand channels.

Between the landfill crest and the perimeter road, the area will be graded to provide drainage toward the perimeter road. The perimeter road will be sloped outward, at a grade of approximately 2 percent, to provide drainage away from the landfill. On the outside of the perimeter road, drainage ditches will be excavated to provide drainage away from the landfill.

4.3.8.1.1 Design and Performance

Design and performance details were determined for the landfill as part of the detailed design process.

4.3.8.1.2 Calculation of Peak Flow

Computation of design discharge for the drainage ditches or berms was performed using standard analytical methods, such as the Rational Method or the computer program HEC-1 (USACE 1981). The 25-year, 24-hour precipitation depth is 4.0 centimeters, based on precipitation data recorded from 1947 to 1969 (PNL-4622). The tributary area for each section of ditch or berm was based on local topography.

4.3.8.2 Runoff Control System

There will be no run-off from the lined landfill because the landfill will be constructed below grade. Any precipitation falling on the landfill will be removed by either evapotranspiration or the leachate collection and removal systems. Therefore, a run-off control system will not be needed.

4.3.8.3 Construction

The drainage ditches or berms around the lined landfill were constructed with conventional earthmoving equipment such as graders and small dozers.

4.3.8.4 Maintenance

The drainage ditches or berms require periodic maintenance to ensure proper performance. The most frequent maintenance activity, beyond periodic inspection, will be cleaning the ditches or berms to remove obstructions caused by windblown soil and vegetation (e.g., tumbleweeds). After rare storm

events, regrading of the ditch bottom or repair of the berm might be required to repair erosion damage. This is expected to occur infrequently; however, inspections will be conducted after 25-year storm events or at least annually.

4.3.9 Control of Wind Dispersal

The IDF will use varied methods to prevent wind dispersal of mixed waste and backfill materials, depending on the waste form. Methods to prevent wind dispersal include containerizing, stabilizing, grouting, spray fixitants, and backfill. In other instances, the operating contractor implements a wind speed restriction during handling, and immediately backfills the waste to prevent wind dispersal.

4.3.10 Liquids in Landfills

Free liquids will not be accepted except as allowed by Chapter 3.0, Section 1.2. Waste received at the IDF must comply with waste acceptance requirements.

4.3.11 Containerized Waste

Containerized waste received in the IDF lined landfill will be limited to a maximum of 10 percent void space. Several inert materials (diatomaceous earth, sand, lava rock) will be used as acceptable void space fillers for waste that does not fill the container.

Figure 4.1. Integrated Disposal Facility Lined Landfill

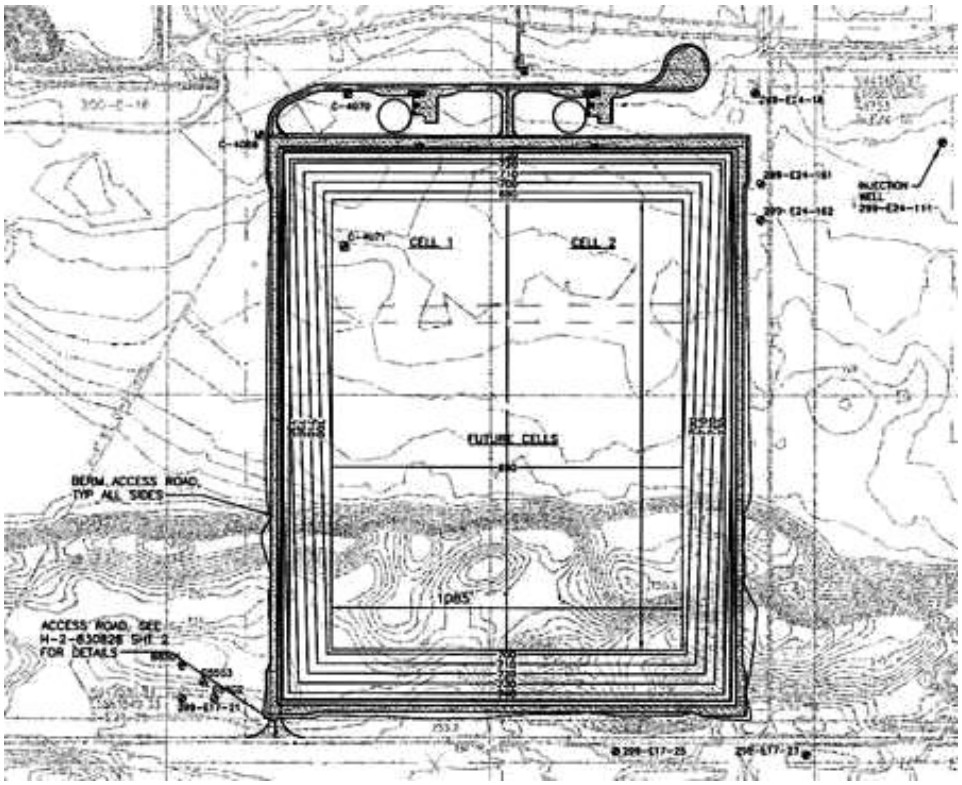
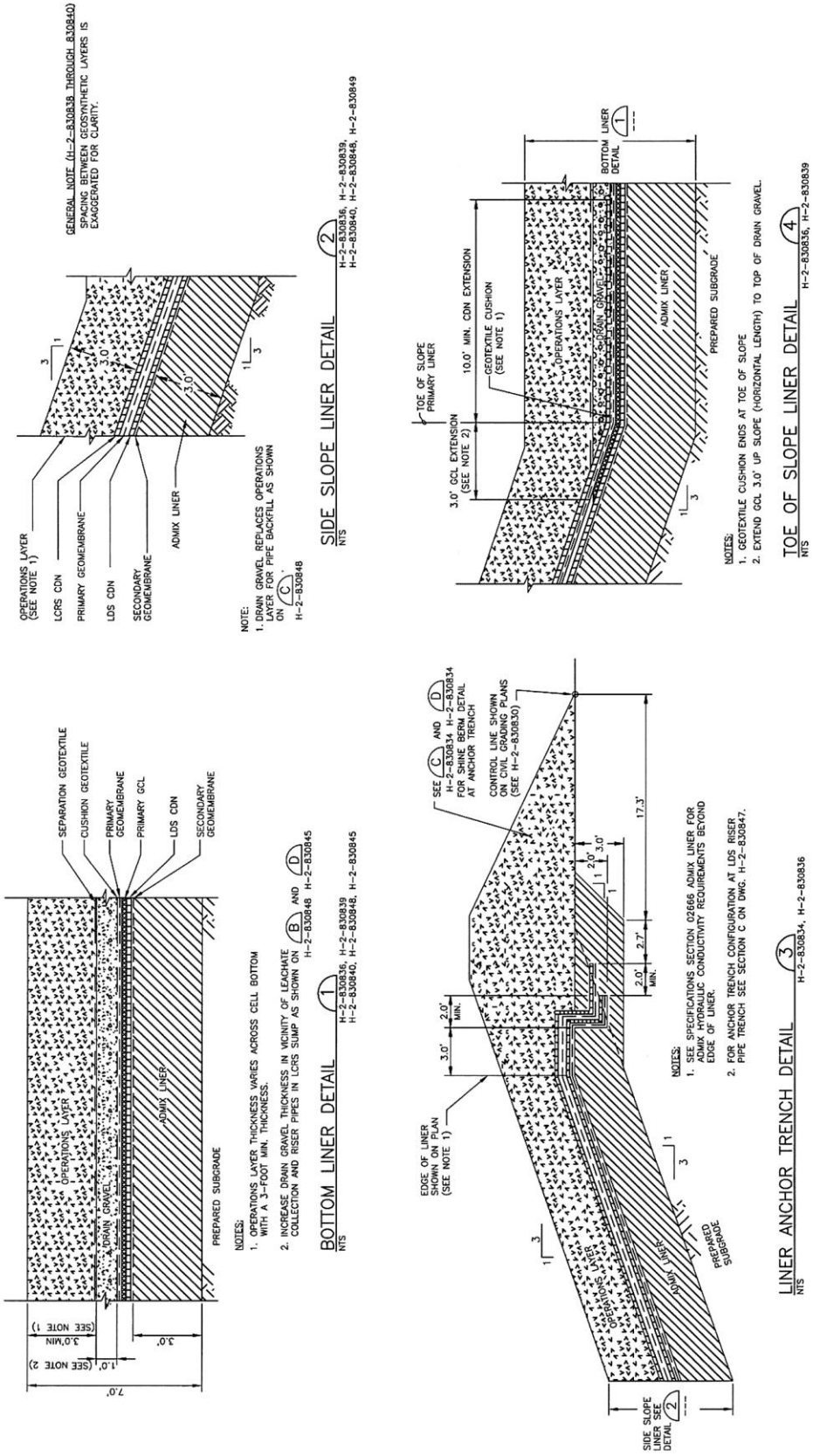


Figure 4.2. Example of a Typical Liner



Chapter 6.0 Procedures to Prevent Hazards

6.0 PROCEDURES TO PREVENT HAZARDS 6.1

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6.0 PROCEDURES TO PREVENT HAZARDS

This chapter discusses security, inspection schedules, preparedness and prevention requirements, preventive procedures, structures, equipment, and prevention of reaction of ignitable, reactive, and incompatible waste at the IDF. The requirements in this chapter that address activities involving the receipt and disposal of dangerous waste as defined in WAC 173-303-040 shall be applied during the Active Life of the IDF. Active Life of a facility means the period from the initial receipt of dangerous waste at the facility until the department receives certification of final closure (WAC 173-303-040). The requirements of this chapter that do not apply to receipt and disposal of dangerous waste as defined in WAC 173-303-040, shall be implemented by the Permittees during the Pre-Active Life of IDF. Pre-Active Life is not defined in the regulations, but refers to the facility maintenance period between final construction and the start of Active Life.

The IDF is designed and will be operated to minimize exposure of the general public and operating personnel to disposed waste. Shielding, contamination control, control of toxic or dangerous material, and safety and security procedures will be used to keep exposure as low as reasonably achievable (ALARA).

6.1 SECURITY

The following sections describe the security measures, equipment, and warning signs to be used to control entry to the IDF. A discussion of Hanford Facility security is provided in Attachment 33, Section 6.1.

6.1.1 Security Procedures and Equipment

The following sections describe the 24-hour surveillance system, barrier, and warning signs to be used to provide security and control access to the IDF.

6.1.1.1 24-Hour Surveillance System

The Hanford Facility is a controlled-access area [refer to Attachment 33, Section 6.1].

6.1.1.2 Barrier and Means to Control Entry

Because the IDF is located within the portion of the Hanford Facility controlled by the 24-hour surveillance system, WAC 173-303-310(2)(c) does not apply.

6.1.1.3 Warning Signs

Signs will be visible from all angles of approach, and legible from a distance of at least 7.6 meters. Each active area used for disposal will be posted with a sign, in English, reading, *DANGER-UNAUTHORIZED PERSONNEL KEEP OUT* or an equivalent legend.

6.1.2 Waiver

A waiver of the security procedures and equipment requirements for the IDF was not requested. Therefore, the requirements of WAC 173-303-310(1)(a) and (b) are not applicable.

6.2 INSPECTION PLAN

This section describes the method and schedule for inspections of the IDF. These inspections help to ensure that situations do not exist that might cause or lead to the release of waste to the environment, degradation of safety equipment and/or systems, or that might pose a threat to human health. Abnormal conditions identified by inspections must be corrected.

6.2.1 General Inspection Requirements

The content and frequency of inspections are described in this section. Inspection discrepancies are documented on inspection checklists and log sheets. The schedule and inspection records will be kept in the inspection logbooks and retained by the IDF operations personnel. Inspection records will be retained in accordance with Permit Condition II.I.1 and contain the following information:

- Date and time of inspection
- Printed name and the hand written signature of the inspector
- Notation of the observations made
- An account of spills or discharges in accordance with WAC 173-303-145
- Date and nature of any repairs or remedial actions taken.

The inspection checklists consist of a listing of items that are assessed during each inspection. A yes/no response will be made for each listed item. A 'yes' response means that the item is in compliance with the conditions stated on the checklist. Any problems identified during the inspection, as indicated by a 'no' response on the checklist, will be reported immediately to the IDF operations supervisor.

6.2.1.1 Types of Problems

Types of problems looked for during an inspection in Pre-Active Life are in Table 6.2. Types of problems looked for during an inspection in Active Life are in Table 6.3. Once the IDF begins to receive dangerous waste, the requirements in Table 6.2 are no longer applicable. Each day mixed waste containers and/or bulk waste are handled within the IDF; an operator will perform a daily inspection of areas subject to spills (e.g., loading and unloading areas and waste handling areas).

6.2.1.2 Frequency of Inspections

Table 6.2 provides inspection frequencies during the Pre-Active Life. Tables 6.1, 6.2, and 6.3 provide inspection frequencies during the Active Life. For clarification, areas with operations that may result in spills are described below

Each step in the waste placement operation occurs in the landfill over the double HDPE liner system that provides containment of any spill from the waste handling operation.

Waste Handling Operations involve the following:

- Unloading of the waste shipment in the landfill Placement of the cover soil over the waste container

During Active Life leachate,[1] movement occurs within the double-contained leachate handling system. There is a potential for a leachate spill on the concrete containment slab of the Crest Pad Building, Leachate Transfer Building, and/or the Leachate Loading Truck Pad.

[1] WAC 173-303-040 defines "Leachate" as any liquid, including any components suspended in the liquid that has percolated through or drained from dangerous waste.

Leachate Handling Operations involve the following:

- Pumping leachate from the collection sumps to the Crest Pad Building
- Activities within the Crest Pad Building
- Transfer of leachate to and from the double-lined Leachate Tanks
- All activities that occur in the Leachate Transfer Building
- Pumping of leachate to a tanker truck on the Truck Loading Pad

Liquid handling operations involve the following:

- The Secondary Leak Detection System (SLDS) is similar to the LDS, except that it is equipped with liquid level indication instrumentation only. A low-capacity submersible pump can be inserted into the SLDS sump if required. Pumping of liquid from the collection sump to the small, portable container on the SLDS Pad may be required. Collected liquid in the SLDS that may be construction water and/or liquid from other sources.

(Note that the secondary leak detection system is not a design requirement of WAC 173-303-665, however DOE has added the design feature pursuant to its authority under the Atomic Energy Act of 1954 (AEA) and not for the purposes of compliance with the dangerous waste regulations. Therefore, information regarding the design, construction, and operation of the SLDS is provided for information only. Pursuant to AEA, DOE has sole and exclusive responsibility and authority to regulate the source, special nuclear and by-product material component of radioactive mixed waste at DOE-owned nuclear facilities. Source, special nuclear and by-product materials, as defined by AEA, are not subject to regulation under RCRA or the Hazardous Waste Management Act, by the State of Washington and are not be subject to State dangerous waste permit, orders, or any other enforceable instrument issued there under. DOE recognizes that radionuclide data may be useful in the development and confirmation of geohydrologic conceptual models. Radionuclide data contained herein is therefore provided as a matter of comity so the information may be used for such purposes).

6.2.2 Schedule for Remedial Action for Problems Revealed

The operating organization will remedy any problems revealed by the inspection on a schedule that prevents hazards to human health and the environment. Where a hazard is imminent or already has occurred immediate action will be taken. Immediate actions will be implemented based on ALARA considerations, availability of supplies, equipment, and personnel.

6.2.3 Specific Process or Waste Type Inspection Requirements

The following sections detail the inspections to be performed at the IDF.

6.2.3.1 Container Inspection

On receipt, operations personnel will confirm appropriate documentation by inspecting each mixed wasted container for disposal and compliance with the container receipt inspection criteria (Chapter 3.0) before the mixed waste is placed in the IDF.

If present, off-specification waste and vitrified waste requiring cooling in storage will be subject to the specific items and/or problems noted during weekly container inspection (Table 6.1) include the following:

- Condition of trench floor and sides
- Container structural integrity
- Containers closed
- At a minimum, 76.2 centimeters aisle spacing

- Corrosion of containers
- Evidence of spills or leaks
- Container labels and markings in place, legible, and unobscured
- Areas in and around stored waste are free of combustibles (e.g., tumbleweeds)
- Waste separations such as tape, rope, chain or other cordon mechanism are intact.

If present, transport vehicles containing off specification waste or vitrified waste requiring cooling will be subject to the specific items and/or problems noted during weekly inspection include the following:

- Transport vehicle structural integrity
- At a minimum, 76.2 centimeters aisle spacing between transporters
- Evidence of spills or leaks
- Areas in and around transport vehicles are free of combustibles (e.g. tumbleweeds)
- Separations such as tape, rope, chain or other cordon mechanism are intact.

Transport vehicles will not be subject to an individual container inspection within the transporter. Records of inspection will be maintained as detailed in Section 6.2.1.

6.2.3.2 Landfill Inspection

The IDF will be inspected according to the frequencies in Table 6.2 during Pre-Active Life and in accordance with Table 6.3 during Active Life.

6.2.3.2.1 Run-on and Runoff Control System

A run-on control system is installed around the perimeter of each lined trench (Chapter 4.0). The system consists of a berm along the outer margin of each trench that prevents run-on from entering the trench. All run-on control system berms are inspected quarterly (Table 6.2) and after storms for signs of deterioration, malfunction, or improper operation. During Active Life, any precipitation that falls between the run-on control berm and the edge of the trench excavation eventually might flow into the primary leachate control and removal system sump and will be treated as leachate.

6.2.3.2.2 Leak Detection System

During pre-active life, the leak detection system will be monitored quarterly and after storms (Table 6.2) for the amount of liquid removed. No action leakage rate will be determined during pre-active life.

During Active life (Table 6.3), leak detection for lined trench at the IDF is accomplished by the following:

- Monitoring liquid level above the secondary liner
- Monitoring liquid levels above primary liner
- Inspecting for the presence of liquids after significant precipitation events
- Verifying certain gauges and instruments are in current calibration; calibration is performed annually or more frequently at intervals suggested by the manufacturer (Chapter 4.0, Section 4.3.7.4)
- Recording secondary sump levels on a daily action leakage rate calculation sheet (Figure 6.1).

If the action leakage rate (Chapter 4.0, Appendix 4C) has not been exceeded, the liner system will be functioning properly.

6.2.3.2.3 Wind Dispersal Control System

During pre-active life, berms will be inspected quarterly and after storms to ensure the berms are functioning properly (Table 6.2).

During active life (Table 6.3), waste is inspected on receipt for evidence of damage, corrosion, or deterioration that might lead to dispersal of the contents.

Unpackaged or bulk waste with any potential for wind dispersal is covered or sprayed with fixative after being placed in a trench.

In addition, unpackaged or bulk waste handling operations are suspended in winds exceeding 24 kilometers per hour unless specifically approved by operations supervisors. The supervisor only would grant approval to operate in winds over 24 kilometers per hour after determining that the risk to human health or the environment would be diminished by completing the work activity, or that the nature and form of the waste handling activity was such that the wind speed would have no significant impact.

6.2.3.2.4 Leachate Collection and Removal System

During pre-active life, the Leachate Collection and Removal System is inspected quarterly and after storms (Table 6.2) for the presence of liquids, and that the system is functioning properly.

During active-life (Table 6.3), liquids in the Leachate Collection and Removal System and Leak Detection System are monitored daily to ensure the action leakage rate (Chapter 4.0, Appendix 4A) is not exceeded and will be inspected per Table 6.2. In addition, a flow meter is used to check if the amount of actual leachate pumped corresponds to the amount accumulated in the leachate collection tank. This check will verify the proper function of the leachate collection and removal sump pumps with each use.

6.3 PREPAREDNESS AND PREVENTION REQUIREMENTS

Section 6.3.1 describes the preparedness and prevention measures to be implemented during Pre-Active Life. Sections 6.3.2 through 6.3.7 describe the preparedness and prevention measures taken at the IDF during Active Life.

6.3.1 Pre-Active Life Preparedness and Prevention

During Pre-Active Life, the Permittees will comply with Permit Attachment 4, Hanford Emergency Management Plan (DOE/RL-94-02) as applicable for a facility that does not contain dangerous waste. An emergency coordinator will be assigned to IDF who will manage and control all aspects of the initial facility response when an emergency occurs.

6.3.2 Equipment Requirements

The following sections describe the internal and external communications systems and the emergency equipment required.

6.3.3 Internal Communication

There is one building, MO-518, equipped to support communications. Immediate emergency instruction to personnel working at the IDF will be provided by cellular telephones.

6.3.4 External Communications

Personnel at the IDF will have voice communication or equivalent (e.g., hand signals) during work assignments to maintain external communications with shift supervisors. Supervision will contact the Hanford Facility emergency telephone number (911) (373-3800 for cellular telephones) if assistance is needed in the field.

6.3.5 Emergency Equipment

Emergency equipment will be available for use at the IDF. A list of equipment is included in the contingency plan (Addendum J.1, Pre-Active Life, and Addendum J.2, Active Life).

The Hanford Facility relies primarily on the Hanford Fire Department to control fires. Emergency equipment will not be located at IDF trenches. Portable fire extinguishers will be carried on IDF operations vehicles. Attachment 4, *Hanford Emergency Management Plan*, (DOE/RL-94-02) identifies the trained firefighting and emergency medical personnel and equipment.

6.3.6 Water for Fire Control

- Hanford Fire Department trucks as described in Permit Attachment 4, *Hanford Emergency Management Plan*, (DOE/RL-94-02); and fire hydrants described in Addendum J.1 and Addendum J.2 supply water for fire control at the IDF.

6.3.7 Aisle Spacing Requirements for Off-Specification Waste

Aisle spacing during off-specification and cooling vitrified waste storage operations is sufficient to allow the movement of personnel and fire protection equipment in and around the containers. This aisle spacing meets the requirements of WAC 173-303-340(3). Inspection aisle space must be at least 76.2 centimeters. During off-specification storage operations, rows of containers are placed no more than two containers wide in accordance with WAC 173-303-630(5)(c). Aisle spacing requirements will be applied to transport vehicles but not to the waste within the transport vehicles.

6.4 PREVENTIVE PROCEDURES, STRUCTURES, AND EQUIPMENT

The following sections will apply during the Active Life for the IDF and describe preventive procedures, structures, and equipment.

6.4.1 Unloading Operations

Methods used to prevent release of waste during unloading operations will be employed as follows.

- Waste will be inspected according to the receipt inspection criteria (Chapter 3.0).
  - If waste fails the inspection, it will be designated as an off-specification waste and could be placed in the storage area or returned to the generator.
- Containers and bulk waste will be handled by appropriate equipment (i.e., crane) during unloading.
- Path from loading area to trench area will be clear of obstructions.

Spills will be managed as identified in the contingency plan (Addendum J.2).

Containers and bulk waste will be staged at the waste unloading area no longer than necessary for placement into the landfill. Administrative procedures may prevent immediate unloading and backfilling of waste containers. Containers might be left in the transporters as needed to resolve the administrative procedure requirements or to support the operational schedule before containers are placed into the landfill. The transfer vehicle containing vitrified waste requiring cooling may be temporarily placed in the storage area prior to unloading for disposal.

6.4.2 Runoff

The waste in the IDF will be placed below the land surface; thus, the IDF is designed to prevent run-off of precipitation that might have come in contact with the waste. The land surface is relatively level, so trenches have only internal drainage. The minimal amounts of precipitation that accumulate are contained within the trench.

The IDF trench is designed to channel run-on liquid away from the trench. Precipitation that percolates to the bottom of the trench is captured in the leachate collection system and is managed as rainwater during Pre Active Life. During Active Life, these liquids will be managed as multi-source leachate waste.

6.4.3 Water Supplies

The design and operation of the IDF during Active Life is intended to minimize the generation of potentially contaminated leachate and to prevent leachate migration into groundwater resources in the local area. All activities performed during Active Life (Chapter 4.0) or Pre-active Life is designed to protect local water supplies.

Activities that prevent contamination of water supplies or groundwater will include the following:

- Placement of waste in lined trenches
  - Run-on and run-off will be controlled
  - Leak detection systems will be used
  - Leachate will be collected and managed as waste
  - Inspections will be performed
- Placement of backfill will occur after a layer of waste has been placed in the trench.

6.4.4 Equipment and Power Failure

Electrical power is required for the landfill. Electricity supplies power to the sump pumps used to remove accumulated leachate from the primary and secondary liners. Electricity outages will be restored as soon as possible. Backup equipment will be acquired if necessary to provide electrical service. Failed equipment will be repaired or replaced as soon as possible.

6.4.5 Personal Protection Equipment

Personnel will be trained in the use of applicable personal protection equipment. .The protective clothing required for Active Life will vary depending on the form and content of the waste.

6.5 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, AND INCOMPATIBLE WASTE

The waste acceptance criteria will prohibit the disposal of ignitable, reactive, and incompatible waste at the IDF. Waste acceptance criteria (Chapter 3.0) will ensure that the required treatment has been performed before the waste is disposed in the IDF.

Waste stream compatibility (i.e., compatibility between individual waste streams and compatibility between waste streams and landfill design and construction parameters) will be assessed on a case-by-case basis. Criteria for assessing and determining compatibility will be identified in either the facility Waste Acceptance Criteria, Waste Analysis Plan, or other protocol or procedure as appropriate (Chapter 3.0) for further discussion of waste stream compatibility.

Figure 6.1. Typical Average Daily Action Leakage Rate Calculation

AVERAGE DAILY ACTION LEAKAGE RATE CALCULATION

Operating Day __/__/__ ____Gallons

Operating Day __/__/__ ____Gallons

Operating Day __/__/__ ____Gallons

Operating Day __/__/__ ____ Gallons

Operating Day __/__/__ ____ Gallons

Operating Day __/__/__ ____ Gallons

Operating Day __/__/__ ____ Gallons

Secondary Sump Total Volume **TOTAL** ____ Gallons

(DIVIDE TOTAL VOLUME BY 7)

AVERAGE DAILY ACTION LEAKAGE RATE: _____ Gallons

NOTIFY IDF Operations Supervisor if Average Daily Action Leakage Rate is GREATER than XXX Gallons

---

Repairs or remedial action taken:

Operator's Printed Name: _____ Date _____

Operator's Signature: _____ Time _____ hrs

Operations Supervisor Printed Name: _____ Date _____

Operations Supervisor Signature: _____ Time _____ hrs

Table 6.1. Container Storage Inspections

Requirement Description	Inspection Frequency	Types Of Problems
-630(6) Containers	Weekly	Leaking Containers Deteriorating containers
-630(6) Containment System	Weekly	Deteriorating containment system
-395(1)(d) Ignitable or reactive waste	Not Applicable	Not Applicable

Table 6.2. Landfill Inspections during Pre-Active Life***

Requirement Description	Inspection Frequency	Types Of Problems
-665(4)(b)(i) Run-on and run-off control	Quarterly and after storms*	Deterioration, malfunction, or improper operation
-665(4)(b)(ii) Wind dispersal control systems	Quarterly and after storms*	Proper functioning
-665(4)(b)(iii) Leachate collection and removal systems	Quarterly and after storms*	Presence of liquids; proper functioning
-665(4)(c)(i) Leak detection system sump	Quarterly and after storms*	Amount of liquids removed
Secondary leak detection system sump**	Quarterly**	Presence of unexpected liquid volume**
Security “Danger unauthorized personnel keep out” signs	Quarterly	Signs are posted and legible
Areas subject to spills	Daily when any activities may take place that have a potential for a spill or release to occur	Evidence of spills

*A storm is any atmospheric disturbance with either wind gust of 35 miles per hour or greater, or precipitation of 0.5 inch or greater within a 24-hour period.

**Note: Secondary leak detection system is not a design requirement of WAC 173-303-665, however DOE is adding the design feature pursuant to its authority under the Atomic Energy Act of 1954 (AEA) and not for the purposes of compliance with the dangerous waste regulations. Therefore, formation regarding the design, construction, and operation of the secondary leak detection system is provided for information only. Pursuant to AEA, DOE has sole and exclusive responsibility and authority to regulate the source, special nuclear and by-product material component of radioactive mixed waste at DOE-owned nuclear facilities. Source, special nuclear and by-product materials, as defined by AEA, are not subject to regulation under RCRA or the Hazardous Waste Management Act, by the State of Washington and are not be subject to State dangerous waste permit, orders, or any other enforceable instrument issued there under. DOE recognizes that radionuclide data may be useful in the development and confirmation of geohydrologic conceptual models. Radionuclide data contained herein is therefore provided as a matter of comity so the information may be used for such purposes.

*** Once the IDF begins to receive dangerous waste, the requirements in Table 6.2 are no longer applicable, and inspection requirements will be as provided in Table 6.2A

Table 6.3. Landfill Inspections during Active Life

Requirement Description	Inspection Frequency	Types Of Problems
-665(4)(b)(i) Run-on and run-off control	Weekly and after storms*	Deterioration, malfunction, or improper operation
-665(4)(b)(ii) Wind dispersal control systems	Weekly and after storms*	Proper functioning
-665(4)(b)(iii) Leachate collection and removal systems	Weekly and after storms*	Presence of leachate; proper functioning
-665(4)(c)(i) Leak detection system sump	Weekly and after storms*	Amount of liquids removed
Secondary leak detection system sump**	Monthly**	Presence of unexpected liquid volume**
Security devices: "Danger unauthorized personnel keep out" signs	Weekly	Signs are posted and legible
Areas subject to spills	Daily when waste management activities having a potential for a spill to occur	Evidence of spills

*A storm is any atmospheric disturbance with either wind gust of 35 miles per hour or greater, or precipitation of 0.5 inch or greater within a 24-hour period.

**Note: Secondary leak detection system is not a design requirement of WAC 173-303-665, however DOE is adding the design feature pursuant to its authority under the Atomic Energy Act of 1954 (AEA) and not for the purposes of compliance with the dangerous waste regulations. Therefore, formation regarding the design, construction, and operation of the secondary leak detection system is provided for information only. Pursuant to AEA, DOE has sole and exclusive responsibility and authority to regulate the source, special nuclear and by-product material component of radioactive mixed waste at DOE-owned nuclear facilities. Source, special nuclear and by-product materials, as defined by AEA, are not subject to regulation under RCRA or the Hazardous Waste Management Act, by the State of Washington and are not be subject to State dangerous waste permit, orders, or any other enforceable instrument issued there under. DOE recognizes that radionuclide data may be useful in the development and confirmation of geohydrologic conceptual models. Radionuclide data contained herein is therefore provided as a matter of comity so the information may be used for such purposes.

Quarter Ending 12/31/2012 24590-LAW-PCN-ENV-12-002

Hanford Facility RCRA Permit Modification Notification Form

Part III, Operating Unit 10

Waste Treatment and Immobilization Plant

Index

Page 2 of 3: Hanford Facility RCRA Permit, Part III, Operating Unit 10, Waste Treatment and Immobilization Plant
Replace General Arrangement (GA) drawings for the LAW Facility in Appendix 9.4 of the Dangerous Waste Permit (DWP).

Submitted by Co-Operator:

Donna Busche 10/22/12
D. M. Busche Date

Reviewed by ORP Program Office:

11/2/12
D. L. Noyes Date

Quarter Ending 12/31/2012 24590-LAW-PCN-ENV-12-002

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part:
Waste Treatment and Immobilization Plant	**Part III, Operating Unit 10**

Description of Modification:

The purpose of this Class 1 modification is to update the following GA drawings for the LAW Facility in Appendix 9.4 of the DWP.

Appendix 9.4			
Replace:	24590-LAW-P1-P01T-00002, Rev. 5	With:	24590-LAW-P1-P01T-00002, Rev. 6
	24590-LAW-P1-P01T-00004, Rev. 3		24590-LAW-P1-P01T-00004, Rev. 4

The referenced GA drawings have been revised. They incorporate changes provided in applicable document change forms (e.g., DCN, SCN, SDDR, FCN, FCR, etc.) and changes associated with the resolution to comments on change documents since the issuance of the last revision of the permitted drawings. This modification requests Ecology approval and incorporation into the permit, the specific changes to these drawings that are indicated by revision notes and clouds. Revisions are the result of ongoing design changes.

Significant changes to the GA drawings are summarized below:

- Revised notes and holds
- Updated radiation and contamination classifications of rooms to current standards
- Modified, relocated, or deleted partition walls and doors
- Identified slope requirements and revised containment curbs for concrete pads supporting transformer equipment
- Relocated, rearranged, and added equipment (e.g., melter lid cooling equipment, electrical control panels, power supply units, heaters, air-cooled condensing units, and maintenance access platforms) to align with current design
- Revised room layouts and minor equipment tags
- Updated refrigerated liquid carbon dioxide storage vessel unloading and storage areas
- Incorporated changes from change documentation identified in the Notes section on each drawing

The following outstanding change documents have been submitted to Ecology pursuant to Permit Condition III.10.C.9.h and are maintained in the WTP Operating Record:

For 24590-LAW-P1-P01T-00002, Rev. 6:
24590-LAW-P1N-P01T-00061
24590-LAW-P1N-P01T-00066

For 24590-LAW-P1-P01T-00004, Rev. 4:
24590-LAW-A1N-A10T-00035
24590-LAW-P1N-P01T-00056
24590-LAW-P1N-P01T-00057
24590-LAW-P1N-P01T-00061

In accordance with Permit Condition III.10.C.2.e, this permit modification sent to Ecology may include page changes to the Permit, attachments, and permit application supporting documentation.

Quarter Ending 12/31/2012 24590-LAW-PCN-ENV-12-002

WAC 173-303-830 Modification Class:	Class 1	Class [1]1	Class 2	Class 3
Please mark the Modification Class:	X			

Enter relevant WAC 173-303-830, Appendix I Modification citation number: A.1 and A.3

Enter wording of WAC 173-303-830, Appendix I Modification citation:

A.1. Administrative and informational changes

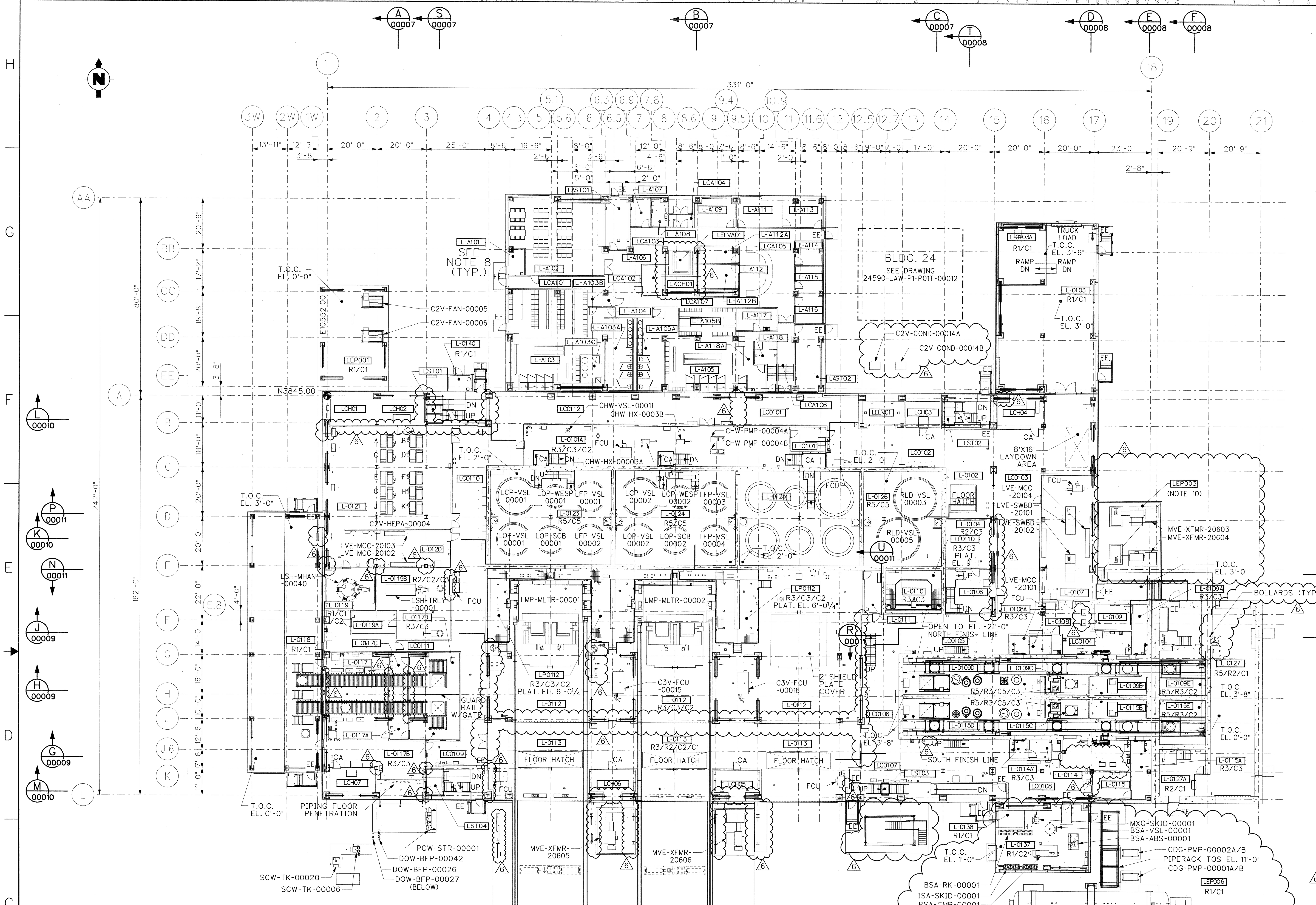
A.3. Equipment replacement or upgrading with functionally equivalent components (e.g., pipes, valves, pumps, conveyors, controls).

Modification Approved/Concur: ☑ Yes ☐ Denied (state reason below)

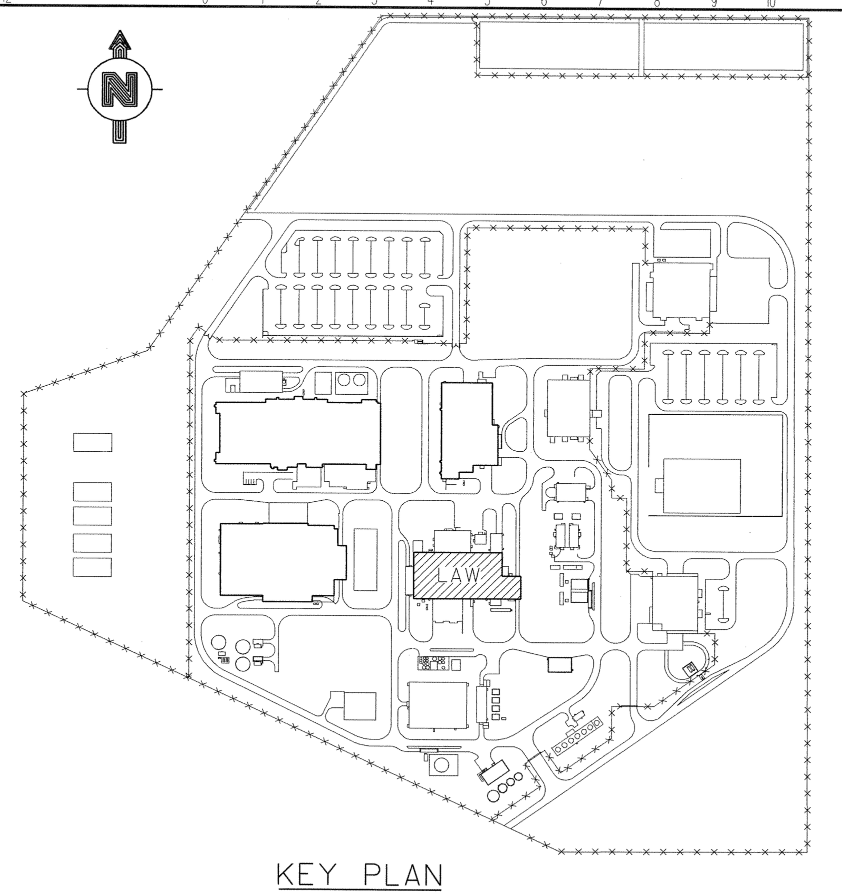
Reason for denial:

Reviewed by Ecology:

S. Dahl 11/21/12 Date



PLAN AT EL 3'-0"



KEY PLAN
NTS

LEGEND:

CA	CONTROLLED ACCESS
EE	EMERGENCY EXIT
FD	FIRE DOOR
MSL	MEAN SEA LEVEL
T.O.C.	TOP OF CONCRETE
L-XXXX	ROOM, CELL, (VAULT) OR TUNNEL
LCXXXX	CORRIDOR OR CONNECTING VESTIBULE
LMXXXX	MEZZANINE
LPXXXX	ROOM PLATFORM
LPCXXXX	CORRIDOR PLATFORM
LCHXX	CHASE
L-AXXX	ANNEX ROOM
LSTXX	STAIR
LELVXX	ELEVATOR
LEPXXX	EQUIPMENT PAD
	SUMP
	EQUIPMENT LAYDOWN AREA
	CONCRETE
	CHECKERED PLATE
	GRATING
	EMERGENCY EYEWASH
	LADDER
	CHASE ACCESS CEILING PANEL
	EMERGENCY SHOWER/EYEWASH
	FLOOR PENETRATION

HOLDS:

6 9. DELETED.
14. DELETED.

NOTES:

1. FOR GENERAL NOTES, SEE 24590-LAW-P1-P01T-00001.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. REFER TO DWG. 24590-LAW-P1-P01T-00003 22'-0" PLAN FOR ITEMS BELOW 28'-0" LEVEL AND NOT INDICATED ON THIS DRAWING.
4. REFER TO DRAWING 24590-LAW-P1-P23T-01002 AND 01003 FOR EQUIPMENT IDENTIFICATION NUMBERS.
5. REVISED PER:

24590-LAW-DCA-M-02-009,REV.0	2+2 MELTER CONFIGURATION, PART 1
24590-LAW-DCA-M-02-006,REV.0	ELIMINATION OF CONTAINER STORAGE FACILITY
24590-LAW-DCA-M-02-010,REV.0	ACCUMULATIVE CHANGES TO LAW MHD'S
24590-LAW-DCA-HV-02-001,REV.0	AIR-INBLEED SYSTEM DESIGN REVISION
24590-LAW-DCA-PL-02-001,REV.0	IMPROVED ACCESS TO THE PROCESS CELLS
24590-LAW-DCA-PR-03-002,REV.0	CDG INSTRUMENTATION AND MISCELLANEOUS CHANGES
24590-LAW-DCA-PR-02-001,REV.0	MODIFICATION OF THE PROCESS EQUIPMENT IN THE LAW CANISTER DECONTAMINATION SYSTEM
24590-LAW-DCN-HV-02-001,REV.0	INCLUDE DAMPERED BYPASS DUCTS ON EXHAUST DUCTWORK FROM INBLEED FILTER HOUSINGS
24590-LAW-DCN-PR-02-001,REV.0	SPLIT LFH/LAW CONTAINER FINISHING HANDLING INTO TWO SYSTEMS
24590-LAW-DCA-PR-02-004,REV.0	DELETION OF CDG COMPRESSED AIR EQUIPMENT
24590-LAW-P1N-P01T-00005	GENERAL DRAWING REVISIONS
24590-LAW-P1N-P01T-00001	REVISE LST03 EAST WALL LOCATION.
24590-LAW-P1N-P01T-00002	RELOCATE CO2 DECONTAMINATION EXHAUST EQUIPMENT.
24590-LAW-P1N-P01T-00007	REMOVE MELTER ANNULUS COOLING SYSTEM.
24590-LAW-P1N-P01T-00012	REVISE SUB-CHANGE ROOFS, CONSUMABLE IMPORT LAYOUT, DELETE UREA AREA, ADDED BREATHING AIR STRUCTURE.
24590-LAW-P1N-P01T-00015	REMOVE AUXILIARY UTILITY ENCLOSURE ROOM L-0139.

6. REVISED PER
REDUCED WALL HEIGHT SEPARATING L-0117C/L-0117D AND L-0117A/L-0117B TO MEET HVAC REQUIREMENTS. SET WALL HEIGHT AT 36" HIGH FOR MAINTENANCE SAFETY BARRIER WITH OPEN FLOOR HATCHES

ROLL UP DOORS TO 13' HIGH (L-0119 AND L-0119B) AND ALIGNED LOCATION.

RADIATION/CONTAMINATION CLASSIFICATIONS FOR ROOM L-0101A FROM R3/C3 TO R3/C2.

CORRECTED MELTER RAIL LENGTH PER ISSUED DPD 24590-LAW-M0-LMH-00002001 REV. 0

RELOCATED MELTER AIRLOCK DOORS AND WALL TO SOUTH SIDE OF COLUMNS J

RELOCATED MELTER AIRLOCK DOORS TO SOUTH SIDE OF COLUMN L.

RELOCATED C3V-FCU-00015 AND C3V-FCU-00016 FROM PLATFORM TO EL. 3'-0"

NOTE 9

6. CONT.

REVISED FINISH LINE EQUIPMENT TO SUPPORT PRESS FIT LID DESIGN.

ADDED CHASE ACCESS DOORS TO LCH02, LCH03, LCH05, LCH06 AND LCH07. CONSUMABLE IMPORT/EXPORT CARTS LSH-MHAN-00040 (L-0119) AND LSH-TRLY-00001 (L-0119B).
HOLD NOTE 11
DELETED:
PCW-COND-00004 AND ASSOCIATED EQUIPMENT FROM ROOM L-0105.
MVE-XFMR-20601 AND MVE-XFMR-20602 PER TREND TN-24590-03-01161
REVISED TO RELEASE HOLD 1,2,3,6,8, RENAMED FCU C3V-FCU-00016
REVISED LAYOUT OF ANNEX FIRST FLOOR ROTATED TURNTABLE PER VENDOR SUBMITTAL ADDED HOLD 12, ADDED NOTE 7, ELECTRICAL BUILDING MOVED TO DGN. 24590-LAW-P1-P01T-00012, LOCATED AND ADDED CALL OUTS FOR FCU'S, REVISED ANNEX COLUMN GRID, ROTATED CDG-VSL-00001 AND CDG-RFU-00001, RENAMED BSA-ABS-00001.
INCORPORATED DCN 24590-LAW-P1N-P01T-00022, 24590-LAW-P1N-P01T-00023, 24590-LAW-P1N-P01T-00028, AND 24590-LAW-P1N-P01T-00029
RELEASED HOLDS 10, 11, AND 12, ADDED CONTAINER INSPECTION PLATFORMS, MELTER ASSEMBLY PAD, IMPORT AND EXPORT GRAPPLE STANDS, SPARE EXPORT GRAPPLE, AND MELTER INSTALLATION/REMOVAL EQUIPMENT, MODIFIED IMPORT CONVEYORS TO VENDOR DESIGN, DELETED NOTE 7, ADDED NOTE 8, PARTITION WALL REVISION PER ARCHITECTURAL DETAILS, REMOVED TRANSFORMER FIRE SEPARATION BARRIER WALLS, REVISED FINISH LINE LIDDING EQUIPMENT, RELOCATED LIDDING EQUIPMENT CONTROL PANELS TO 28'-0" LEVEL, REVISED LVE-SWBD-20101, AND LVE-SWBD-20102.

6. CONT.

RELEASED HOLD 13, REVISED MVE-XFMR-20603, MVE-XFMR-20604, MVE-XFMR-20605, AND MVE-XFMR-20606 PER VENDOR SUBMITTALS, REMOVED CHAIN LINK FENCE SEPARATING L-0103A, L-0103B, L-0103C, AND L-0103D, DELETED ROOM NUMBER LABELS L-0103A/B/C, RELABELED L-0103D TO L-0103A, REVISED CONCRETE SLAB AND ADDED SUPPORT FRAME FOR LEP001, ADDED CDG-RK-00001, CDG-PUMP-SKID, SCW-TK-00020, DOW-BFP-00026, DOW-BFP-00027, AND DOW-BFP-00042, REVISED ORIENTATION OF PCW-STR-00001, REVISED EQUIPMENT SUPPORT PADS SOUTH OF COLUMN LINE L AND WEST OF COLUMN LINE 4 TO MATCH REVISED EQUIPMENT, REVISED AND ADDED RADIOLOGICAL AND CONTAMINATION CLASSES TO LEP001, LEP004, LP0110, LP0112, L-0101A, L-0117B, L-0117D, L-0118, L-0119, L-0127A, L-0137, L-0138, AND L-0140, ADDED C3V-FCU-00038 TO L-0101A, REVISED HOLD NOTE 9, DELETED ERRONEOUS ROOM CALL OUT L-A110 AT COL. BB/2, ADDED CALL OUT LMH-MHAN-00079 AND SCW-TK-00006, REVISED MELTER ASSEMBLY PAD AT COL. L/4 TO L/9.5 AND ADDED LABEL LEP004, REMOVED FIRE DOOR (FD) CALL OUT IN LC0101, ADDED CALL OUT FOR 2" SHIELD PLATE COVER IN L-0112, INCORPORATED DCN 24590-LAW-P1N-P01T-00031, RELOCATED GRAPPLE STAND IN L-0118, REVISED WALLS FOR L-A106 AND LELVA01, REPLACED ROLL UP DOOR AT COL. A/16-17 WITH DOUBLE SWING DOOR, REMOVED EMERGENCY EXIT (EE) LABELS FROM INTERIOR DOORS, ADDED EMERGENCY EXIT (EE) LABELS TO ADDITIONAL EXTERIOR DOORS, ADDED CONTROLLED ACCESS (CA) LABELS TO ALL CHASE ACCESS DOORS, REVISED WALL AND DOOR AT COL. E/15, REVISED NOTE 4 AND 8, ADDED NOTE 9 AND HOLD 14, AND REVISED ADR REVISION.

6 INCORPORATED:

24590-LAW-A1N-A10T-00038	24590-LAW-A1N-A10T-00033
24590-LAW-P1N-P01T-00030	24590-LAW-P1N-P01T-00050
24590-LAW-P1N-P01T-00052	24590-LAW-P1N-P01T-00054
24590-LAW-P1N-P01T-00056	24590-LAW-P1N-P01T-00060
24590-WTP-FC-C-09-0567	24590-WTP-FC-E-08-0170
24590-WTP-FC-E-08-0286	

ADDED NOTE 10, 11 AND 12. DELETED HOLD 14 AND HOLD 9.
REVISED ADR REVISION NUMBER. ADDED MELTER LID COOLING EQUIPMENT AT COL. G/4 AND G/6

RELOCATED DOOR L-0115-1 IN ROOM L-0115 FROM NORTH WALL TO WEST WALL. ADDED SUPPORT COLUMNS AND ACCESS STAIRS FOR HVAC CONDENSER PLATFORM BETWEEN COL. 4 AND 14 SOUTH OF COLUMN L. REVISED CONTAINMENT CURBS SURROUNDING MVE-XFMR-20605 AND MVE-XFMR-20606. REVISED LAYOUT OF LFH CONTROL PANELS IN LC0104 AND LC0108. ADDED C2V-COND-00014A/B.

NOTES CONT.:

7. DELETED
8. ALL ANNEX ROOMS (L-A***) ARE DESIGNATED R1/C1.
9. REFER TO 24590-BOF-P1-50-00002 FOR CHILLED WATER BOOSTER PUMP LOCATION.

6

10. CONCRETE PAD LEP003 ASSOCIATED WITH MVE-XFMR-20603 AND MVE-XFMR-20604 WILL INCLUDE A CONTAINMENT CURB AND BE SLOPED TO A LOW POINT AT THE NORTHEAST CORNER OF THE SLAB. REFER TO CSA DRAWINGS FOR DETAILS.
11. FOR OPERATIONAL REVISIONS TO RADIATION/CONTAMINATION CLASSIFICATION, REFER TO RECOMMENDATIONS CITED IN MANAGEMENT ASSESSMENT REPORT 24590-LAW-MAR-ENS-07-0001.
12. ROOMS ARE OFFICIALLY IDENTIFIED BY ROOM NUMBERS ONLY. ROOM NUMBERS ARE ESTABLISHED AND CONTROLLED ON GENERAL ARRANGEMENT DRAWINGS. ONLY ROOM NUMBERS ARE NEEDED TO IDENTIFY ROOMS ON ENGINEERING DISCIPLINE DOCUMENTS. WHILE ROOM NUMBERS ARE CONTROLLED, THE MOST COMMON NAME OF ROOMS ASSOCIATED WITH EACH ROOM NUMBER ARE SHOWN FOR REFERENCE ONLY ON ARCHITECTURAL FLOOR PLANS.

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

REVISION HISTORY

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
6	REVISED TO INCORPORATE CHANGES IN NOTE 6	CMS	[illegible]	[illegible]	[illegible]	9/2/10
5	REVISED TO INCORPORATE CHANGES IN NOTE 6	TH	CMS	JM	JR	04/03/07
4	REVISED TO INCORPORATE CHANGES IN NOTE 6	DLL	CMS	PR	DRJ	12/19/05
0	ISSUED FOR DESIGN-SUPERSEDES DWG-W375LV-PL00043, REV D	AH	RM	N/A	GD	07-03-02

ISSUED BY RPP-WTP PDC	PROJECT No.	24590
	SITE	HANFORD
	AREA	200E
ISSUE STAMP	BUILDING No.	20

	BY	DATE
ORIGINATOR	HARSHFIELD, ALAN	07-03-02
CHECKER	MOSSBRUCKER, ROBERT	07-03-02
APPROVER	DUNCAN, GARTH	07-03-02
REVIEWER	N/A	N/A

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

LAW VITRIFICATION BUILDING GENERAL ARRANGEMENT PLAN AT EL. 3'-0"

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO 6
ADR NO. 24590-LAW-ADR-PL-02-002 REV: 2
SAFETY SCREEN REQUIRED? [X] YES [ ] NO E&NS INITIAL IF YES

SCALE: 1/16"=1'-0"

24590-LAW-P1-P01T-00002

REV 6

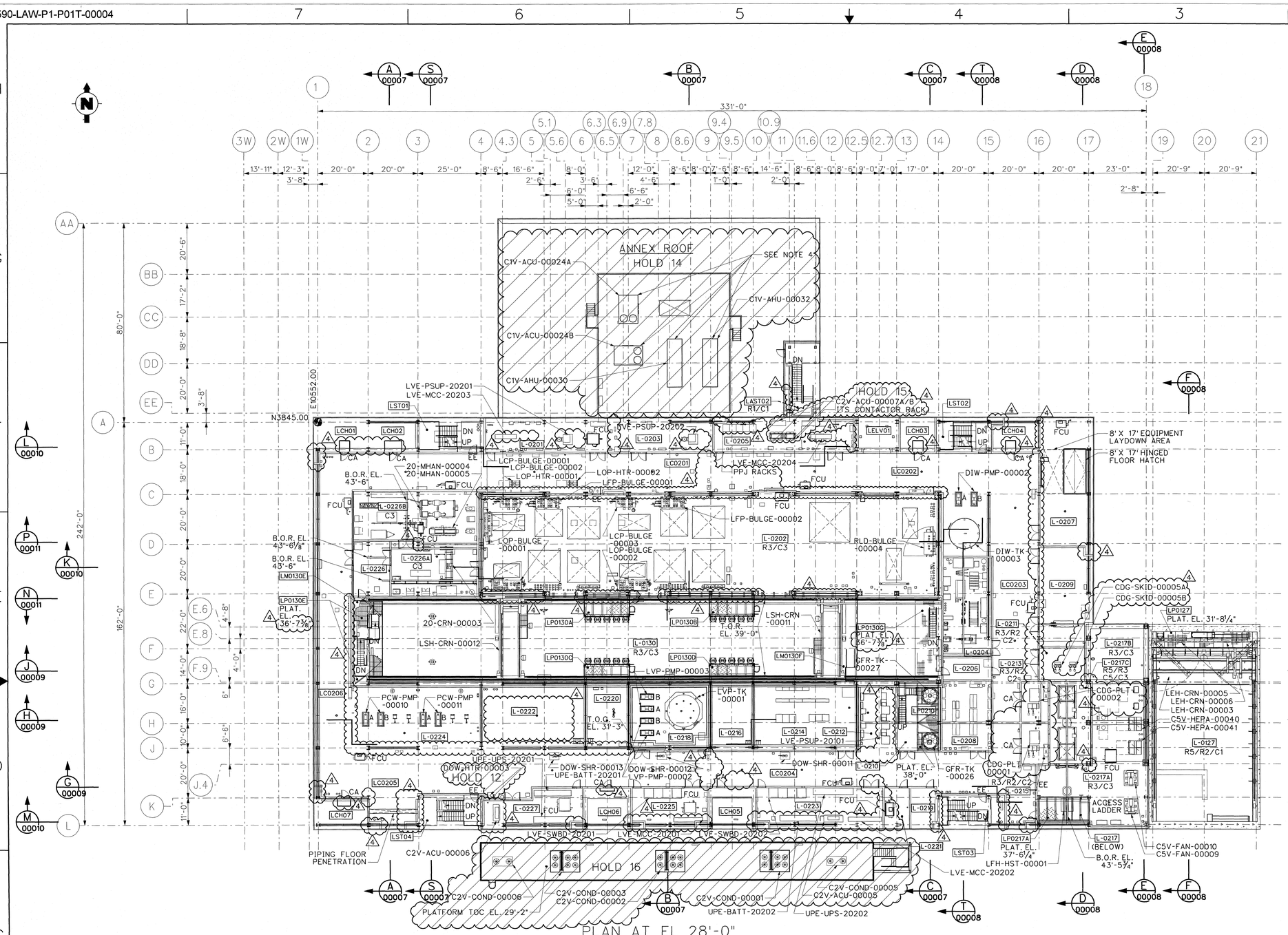
R11258347

SAFETY SCREEN IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

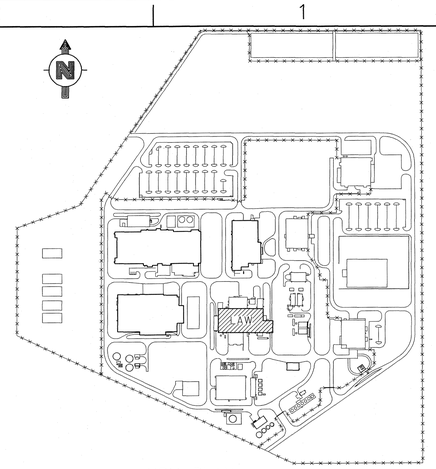
'E' SIZE - 44x34
COMPUTER GENERATED - MANUAL CHANGES NOT PERMITTED

8/31/2010 9:43:45 AM

PLOTTED BY: csalerno
C:\Work\csalerno\dms06392\24590LAWP1P01T00002.DGN



PLAN AT EL 28'-0"



KEY PLAN
NTS

LEGEND:

CA	CONTROLLED ACCESS
EE	EMERGENCY EXIT
FCU	FAN COIL UNIT
FD	FIRE DOOR
L-XXXX	ROOM, CELL, (VAULT) OR TUNNEL
LCXXXX	CORRIDOR OR CONNECTING VESTIBULE
LMXXXX	MEZZANINE
LPXXXX	ROOM PLATFORM
LPCXXXX	CORRIDOR PLATFORM
LCHXX	CHASE
LELVXX	ELEVATOR
LSTXX	STAIR
LASTXX	ANNEX STAIR
	EQUIPMENT LAYDOWN AREA
	CONCRETE
	CHECKERED PLATE
	GRATING
	EMERGENCY EYEWASH
	LADDER
	EMERGENCY SHOWER/EYEWASH
	FLOOR PENETRATION

HOLDS:

10. DELETED
11. DELETED
12. TEMPERED WATER SYSTEM PENDING VENDOR SELECTION TO BE PROVIDED BY MECHANICAL SYSTEMS.
13. DELETED
14. ANNEX ROOF EQUIPMENT FINAL LOCATION PENDING SUBCONTRACT AWARD.
15. ITS CONTACTOR RACK LOCATION PENDING ACU C2V-ACU-00007A/B SIZES. INPUT TO BE PROVIDED BY HVAC ENGINEERING.
16. PLATFORM AND EQUIPMENT LOCATION PENDING FINAL HVAC EQUIPMENT DESIGN. INPUT TO BE PROVIDED BY HVAC ENGINEERING.

NOTES:

1. FOR GENERAL NOTES, SEE 24590-LAW-P1-P01T-00001
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. REVISIONS:

24590-LAW-P1N-P01T-00008 RELOCATE DECON EXHAUST EQUIP TO EL. 28'-0"
24590-LAW-P1N-P01T-00011 REMOVE FIXATIVE EQUIP AND CONC WALLS,
24590-LAW-P1N-P01T-00013 REVISE LST03 WALLS AND L-0217 DOOR
24590-LAW-P1N-P01T-00014 REVISE PARTITION WALL AT COL G/2 TO COL G/14
24590-LAW-P1N-P01T-00016 DELETE PARTITION WALL AT COL H/4
DELETE PARTITION WALL AT COL H/6
REVISE CHASE WALL LOCATIONS ADD DOORS
REVISE DOOR LOCATION AT COL C/7
RELOCATE POWER SUPPLIES TO L-0212
REVISE CCB SUPPORTS AND PLATFORMS
DELETE WALL BETWEEN LCH01 & LCH02
DELETE FIXATIVE CABINETS
REVISE LELV01 ENTRANCE DOOR
REVISE DOUBLE DOOR LOCATIONS COL J & K
RELOCATE EYEWASH TO L-0204
REVISE PARTITION WALLS TO CLEAR COLUMN
ALL EL. 28'-0" (NOT CLOUDED FOR CLARITY)
REVISE C3 WORKSHOP LAYOUT
REMOVE/REVISE L-0217C CONCRETE WALLS
MOVE EAST WALL OF LCH04
RELOCATE MISC FAN COIL UNITS TO FLOOR
ADD CONDENSING UNITS
ADD AIR CONDENSING UNITS
REVISED INERT FILL BINS AND PLATFORM
REVISE CAUSTIC BLOW DOWN TANK SYSTEM
REVISE L-0218 WALLS AND DOORS
REVISE DIW PUMP SIZED/REMOVE ONE PUMP
REVISE LST04 WEST WALL
RELOCATE LFH GRAPPLE STAND

3. CONT.

REVISED L-0213 AND L-0215 LAYOUT AND REMOVED NORTH AND SOUTH ACCESS DOORS.

ADDED C2 WORKSHOP AND C2 MSM MAINTENANCE SHOP EQUIPMENT TO L-0204 AND L-0209 RESPECTIVELY

REVISED HATCH AND LAYDOWN AREA IN L-0207 PER STRUCTURAL INPUT.

REVISED ROLL-UP DOOR LOCATION AT COL C/12.7

DELETED ROOM SCHEDULE. REFER TO ARCHITECTURAL ROOM SCHEDULE (24590-LAW-A5-A19T-05203-001)

REVISED DOW-HTR-00003

REVISED BULGES IN L-0202

REVISED FCU LOCATION IN L-0202

REVISED LSH-CRN-00011 AND LSH-CRN-00012 PER VENDOR DESIGN INPUTS

REVISED DOOR LOCATION TO L-0205

REVISED SECTION "D" LOCATION FOR CLARITY

REVISED NOTE 2

DELETED HOLD NOTES 4 AND 5

DELETED LVE-MCC-20205 AND LVE-MCC-20206

ADDED HOLD NOTES 7, 8 AND 9

RETAGGED LVP-VSL-00001 TO LVP-TK-00001

RETAGGED LEH-CRN-00009 TO LEH-CRN-00003

REVISED RAD CLASSIFICATION FOR L-0211, L-0213, L-0215 FROM R2/C2 TO R3/R2/C2.

3. CONT.

REVISED TO INCORPORATED DCN 24590-LAW-P1N-P01T-00020 AND FCR *24590-WTP-FC-C-05-0248
RELEASED HOLDS 1, 2, 3, 6, 7, 8, AND 9. ADDED NOTE 4. HOLDS 11, 12, AND 13, AND CHANGES IN 24590-LAW-M6N-LVP-00019. CHANGE RAD CLASS. OF ROOM L-0217A FROM R3/C3 TO R5/R3/C3. ADDED CONTROLLED ACCESS AND EMERGENCY EXIT CALL OUTS ON CHASE ACCESS POINTS AND STAIR ENTRANCES, ADDED CONTROL PANEL.

4. AIR HANDLING UNIT SIZING AND LOCATION TO BE SUPPLIED BY ANNEX HVAC SUBCONTRACTOR.

5. 24590-LAW-P1N-P01T-00026 MOVED LCH05 DOOR FOR RELOCATION OF C2V-ACU-00005. REVISED LEH-CRN-00003 TO REFLECT CURRENT VENDOR DATA. REVISED DESIGN AND LOCATION OF C2V-ACU-00005 AND C2V-ACU-00006 FROM SINGLE UNITS TO SPLIT CONDENSER UNITS AND ADDED C2V-COND-00005 AND C2V-COND-00006. ADDED LOP-HTR-00001, 00002 IN LC0201. ADDED CALL OUTS AND ROTATED DOW-SHR-00011, 00012, AND 00013. ADDED CALL OUTS FOR LP0217A, 20-CRN-00003, LEH-CRN-00005, LEH-CRN-00006, AND ANNEX ROOF. ADDED CALL OUTS AND REVISED LAYOUT OF C1V-AHU-00030, C1V-AHU-00032, C1V-ACU-00024A, AND C1V-ACU-00024B BETWEEN COLUMN LINES DD-EE AND 5.6-9 TO REFLECT CURRENT BOUNDING DIMENSIONS. REVISED AND RELOCATED LFH-HST-00001. REMOVED WALL SEPARATING L-0216 AND L-0214. REMOVED CORRIDOR DOOR FOR L-0216 AND L-0220 AND ADDED STILES. REVISED BOTTOM OF RAIL (B.O.R.) ELEVATION TO MONORAIL IN ROOM L-0226. REVISED LOCATION OF L-0208 DOOR AT COL. J/15. REVISED LOCATION OF L-0202 DOOR AT COL. C/14. REVISED WALLS FOR LST01, LST02, AND LCH01, AND REVISED WEST WALL OF LC0206. REVISED LAYOUT OF L-0227 AND RELOCATED DOORS. ADDED LADDER CALL OUT TO LP0217A. REVISED RADIOLOGICAL CLASSIFICATION IN ROOMS L-0217A AND L-0217B. ADDED HOLD 14. REMOVED (BELOW) CALL OUT TO FCU AND ACU (ABOVE) CALL OUT IN ROOM L-0221. ADDED (BELOW) TO CALL OUT L-0217.

6. FOR OPERATIONAL REVISIONS TO RADIATION/CONTAMINATION CLASSIFICATIONS, REFER TO RECOMMENDATIONS CITED IN MANAGEMENT ASSESSMENT REPORT 24590-LAW-MAR-ENS-07-0001.

7. ROOMS ARE OFFICIALLY IDENTIFIED BY ROOM NUMBERS ONLY. ROOM NUMBERS ARE ESTABLISHED AND CONTROLLED ON GENERAL ARRANGEMENT DRAWINGS. ONLY ROOM NUMBERS ARE NEEDED TO IDENTIFY ROOMS ON

7. CONT.

ENGINEERING DISCIPLINE DOCUMENTS. WHILE ROOM NUMBERS ARE CONTROLLED, THE MOST COMMON NAME OF ROOMS ASSOCIATED WITH EACH ROOM NUMBER ARE SHOWN FOR REFERENCE ONLY ON ARCHITECTURAL FLOOR PLANS.

8. INCORPORATED:

24590-LAW-AIN-A10T-00020
24590-LAW-P1N-P01T-00044
24590-LAW-P1N-P01T-00047
24590-LAW-P1N-P01T-00050
24590-LAW-P1N-P01T-00055
24590-WTP-FC-E-08-0179
24590-LAW-P1N-P01T-00035
24590-LAW-P1N-P01T-00045
24590-LAW-P1N-P01T-00048
24590-LAW-P1N-P01T-00054
24590-WTP-FC-C-08-0705
24590-WTP-FC-E-08-0290

RELOCATED C2V-COND-00005/00006, UPE-BATT-20202, AND C2V-ACU-00005.
ADDED C2V-COND-00001, C2V-COND-00002, C2V-COND-00003, CDG-SKID-00005A&B
ADDED PLATFORM AND HANDRAIL IN LCH01, LCH02, LCH03, LCH04, LCH06 AND LCH07
REVISED SIZE OF LVE-MCC-20201, LVE-MCC-20202 AND LVE-MCC-20203 TO MATCH VENDOR DATA.
REMOVED HOLDS 10, 11 AND 13
ADDED HOLD 15 AND HOLD 16
REVISED HOLD 12 CLOUD TO CHANGE EQUIPMENT TAG FROM DOW-SKID-00002 TO DOW-HTR-00003.
REVISED HOLD NOTE 14.

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

REVISION HISTORY

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
4	REVISED TO INCORPORATE CHANGES IN NOTE 8	TH	CMS	JM	JR	11/17/09
3	REVISED TO INCORPORATE CHANGES IN NOTE 5	TH	CMS	PR	DRJ	12/19/05
2	REVISED TO INCORPORATE CHANGES IN NOTE 3	DLL	CMS	PR	DRJ	12/19/05
0	ISSUED FOR DESIGN-SUPERSEDES DWG-W375LV-PL00045, REV D	CS	AH	RM	CW	06-02-03

ISSUED BY RPP-WTP PDC
ISSUE STAMP

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	20

	BY	DATE
ORIGINATOR	SALERNO, CRAIG	06-02-03
CHECKER	HARSHFIELD, ALAN	06-02-03
APPROVER	WINKLER, CLIFFORD	06-02-03
REVIEWER	MOSSBRUCKER, ROBERT	06-02-03

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-LAW-ADR-PL-03-001 REV: 2
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

LAW VITRIFICATION BUILDING GENERAL ARRANGEMENT PLAN AT EL. 28'-0"

SCALE: 1/16"=1'-0"
24590-LAW-P1-P01T-00004
REV 4

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREQ-002

'E' SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

FORM E_SDN.DGN 02/2009

11/05/2009 10:59:03 AM

PLOTTED BY: csalerno

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Quarter Ending 09/30/2012 24590-PTF-PCN-ENV-12-004

Hanford Facility RCRA Permit Modification Notification Form
Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

Index

Page 2 of 3: Hanford Facility RCRA Permit, Part III, Operating Unit 10, Waste Treatment and Immobilization Plant
Replace Piping and Instrumentation Diagrams (P&ID) for the PTF Treated LAW Evaporation System (TLP) Vessels, Condensers, Separators, Reboilers, Utility Racks, and Vessel Pulse Jet Mixers (PJM) in Appendix 8.2 of the Dangerous Waste Permit (DWP).

Submitted by Co-Operator:

Donna Busche 8/20/12
D. M. Busche Date

Reviewed by ORP Program Office:

for D. L. Noyes 9/13/12
Date

Quarter Ending 09/30/2012 24590-PTF-PCN-ENV-12-004

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **Waste Treatment and Immobilization Plant**	Permit Part: **Part III, Operating Unit 10**

Description of Modification:

The purpose of this Class 1 prime modification is to update the P&IDs for the PTF in Appendix 8.2 of the DWP.

The following P&IDs are being submitted to replace the documents currently in Appendix 8.2. The increase in the number of P&IDs submitted results from converting source drawings into four or five drawings to provide a clearer representation of the system.

Appendix 8.2			
Replace:	24590-PTF-M6-TLP-00002, Rev. 3	With:	24590-PTF-M6-TLP-00002001, Rev. 0
			24590-PTF-M6-TLP-00002002, Rev. 0
			24590-PTF-M6-TLP-00002003, Rev. 0
			24590-PTF-M6-TLP-00002004, Rev. 0
	24590-PTF-M6-TLP-00003, Rev. 3		24590-PTF-M6-TLP-00003001, Rev. 0
			24590-PTF-M6-TLP-00003002, Rev. 0
			24590-PTF-M6-TLP-00003003, Rev. 0
			24590-PTF-M6-TLP-00003004, Rev. 0
	24590-PTF-M6-TLP-00005, Rev. 2		24590-PTF-M6-TLP-00005001, Rev. 0
			24590-PTF-M6-TLP-00005002, Rev. 0
			24590-PTF-M6-TLP-00005003, Rev. 0
			24590-PTF-M6-TLP-00005004, Rev. 0
			24590-PTF-M6-TLP-00005005, Rev. 0
	24590-PTF-M6-TLP-00006, Rev. 2		24590-PTF-M6-TLP-00006001, Rev. 0
			24590-PTF-M6-TLP-00006002, Rev. 0
			24590-PTF-M6-TLP-00006003, Rev. 0
			24590-PTF-M6-TLP-00006004, Rev. 0
			24590-PTF-M6-TLP-00006005, Rev. 0

This modification requests Ecology approval and incorporation into the permit the specific changes to the above DWP documents. Conversion from one to multiple drawings expands the drawings to provide better detail; revision clouds are used to show changes. As part of the conversion process, a final revision of the drawing to be expanded was issued to indicate that it has been superseded. For example, 24590-PTF-M6-TLP-00002, Rev. 4 was issued to document that the drawing has been superseded by 24590-PTF-M6-TLP-00002001 through 24590-PTF-M6-TLP-00002004.

Revisions are the result of ongoing design (changes from vendor preliminary data to vendor detailed design), quality/seismic flag changes, and general criteria from design verification review. The following identifies the significant changes that have been incorporated:

Significant changes common to most or all P&IDs are summarized below:

- Converted drawings from a single sheet to multi-sheet drawings
- Modified, deleted, and added notes, holds, and references
- Modified, identified, and added support/utility system lines, valves, in-line components, instruments, and logic controls
- Incorporated changes from change documentation identified in the Notes section on each drawing

This modification requests Ecology approval and incorporation of the following outstanding change document(s)

Quarter Ending 09/30/2012 24590-PTF-PCN-ENV-12-004

into the permit. Although not yet incorporated into the revised documents included in this PCN, the listed outstanding change document(s) are intended to be incorporated into the permit:

24590-PTF-M6-TLP-00002001
- 24590-PTF-M6N-TLP-00053

24590-PTF-M6-TLP-00002002
- 24590-PTF-M6N-TLP-00054

24590-PTF-M6-TLP-00002003
- 24590-PTF-M6N-TLP-00055

24590-PTF-M6-TLP-00002004
- 24590-PTF-M6N-TLP-00003
- 24590-PTF-M6N-TLP-00056

24590-PTF-M6-TLP-00003001
- 24590-PTF-M6N-TLP-00057
- 24590-PTF-M6PR-TLP-00003

24590-PTF-M6-TLP-00003002
- 24590-PTF-M6N-TLP-00057

24590-PTF-M6-TLP-00003003
- 24590-PTF-M6LN-M80T-00063
- 24590-PTF-M6LN-M80T-00067
- 24590-PTF-M6N-TLP-00057
- 24590-PTF-M6N-TLP-00060

24590-PTF-M6-TLP-00003004
- 24590-PTF-M6LN-TLP-00015
- 24590-PTF-M6N-TLP-00057

In accordance with Permit Condition III.10.C.2.e, this permit modification sent to Ecology may include page changes to the Permit, attachments, and permit application supporting documentation.

WAC 173-303-830 Modification Class:	Class 1	Class [1]1	Class 2	Class 3
Please mark the Modification Class:		X		

Enter relevant WAC 173-303-830, Appendix I Modification citation number: NA

Enter wording of WAC 173-303-830, Appendix I Modification citation:

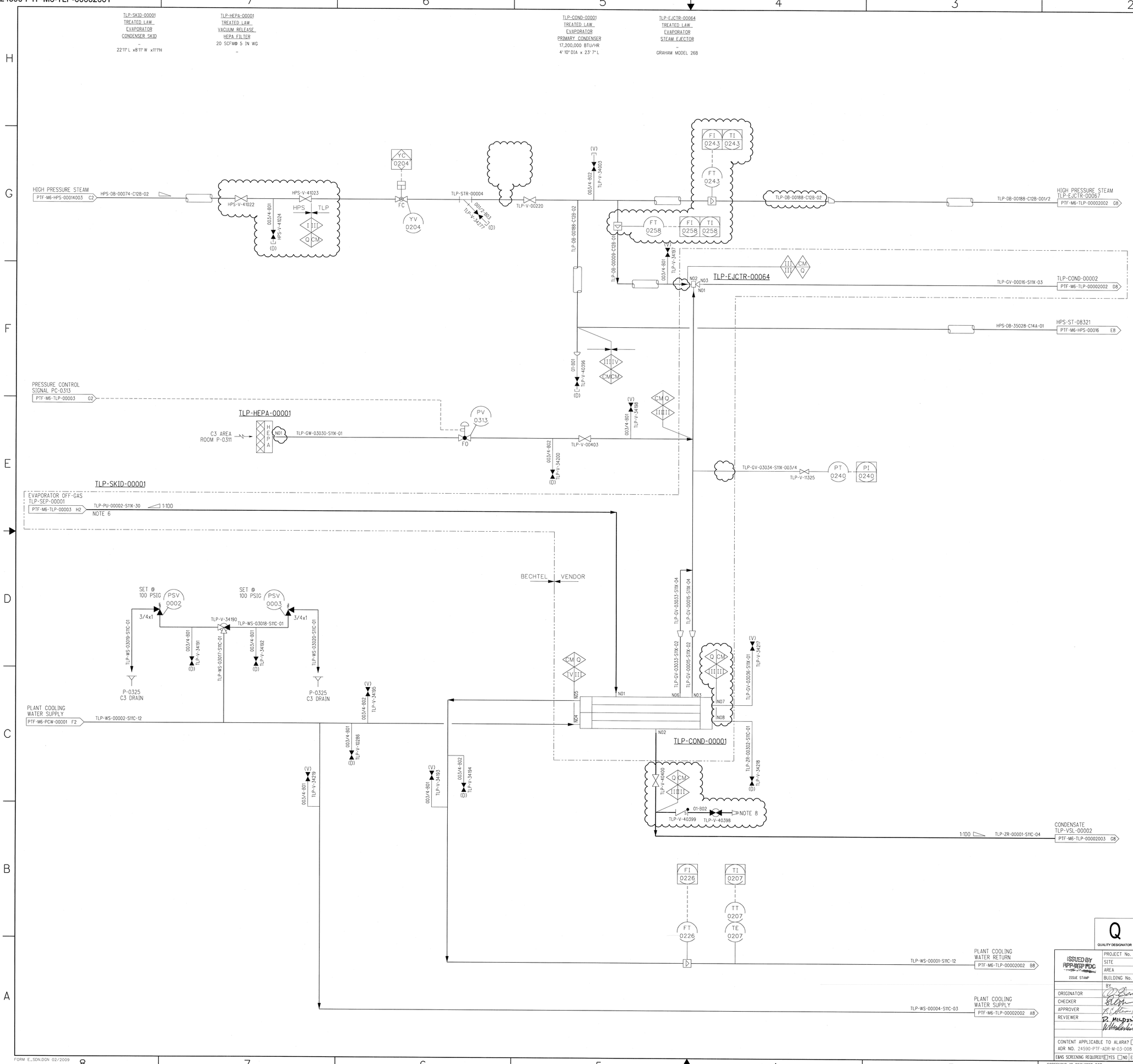
In accordance with WAC 173-303-830(4)(d)(i), this modification notification is requested to be reviewed and approved as a Class [1]1 modification. WAC 173-303-830(4)(d)(ii)(A) states, "Class 1 modifications apply to minor changes that keep the permit current with routine changes to the facility or its operation. These changes do not substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment. In the case of Class 1 modifications, the director may require prior approval."

Modification Approved/Concur: [X] Yes [ ] Denied (state reason below)

Reason for denial:

Reviewed by Ecology:

S. Dahl — Date: Nov 5 2012



NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
5. LINE WILL BE SELF-DRAINING OVER ITS ENTIRE LENGTH. IF MONITOR DETECTS SOURCE OF RADIATION, LINE CAN BE FLUSHED WITH DEMIN WATER FROM TLP-COND-00001 TO TLP-VSL-00002 OR TLP-SEP-00001 PRIOR TO ONSET OF ANY MAINTENANCE ACTIVITIES.
6. LINE TLP-PU-00002-S11X-30 WILL BE PROVIDED BY TLP-SKID-00001 VENDOR, SEPARATE FROM SKID.
7. DO NOT ROUTE OR SEND TO FLOOR DRAINS. DANGEROUS WASTE MUST BE COLLECTED AND PROPERLY MANAGED.
8. MNPT HOSE CONNECTION PROVIDED FOR DEMIN FLUSH WATER.
9. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-PTF-M6-TLP-00002 REV. 4. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6LN-TLP-00002, -00006, -00010, 24590-PTF-M6N-M80T-00080, 00092, 24590-PTF-M6N-TLP-00043, -00044, -00045, -00049, AND 24590-PTF-M6PN-TLP-00002.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, SYSTEM DESCRIOPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).
2. THE REQUIRED BATCH SEQUENCES, PERMISSIVES, INTERLOCKS, ALARMS AND OPERATOR INTERFACE POINTS ARE FULLY DESCRIBED IN THE TLP SYSTEM LOGIC DIAGRAMS (FUTURE) AND THE TLP SYSTEM DESCRIPTION (FUTURE REVISION).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

DRAWING INDEX

DWG NO	TITLE
24590-PTF-M6-TLP-00002001	TLP SYS CONDENSER TLP-COND-00001
24590-PTF-M6-TLP-00002002	TLP SYS CONDENSERS TLP-COND-00002 AND -00003
24590-PTF-M6-TLP-00002003	TLP SYS CONDENSATE COLLECTION TLP-VSL-00002
24590-PTF-M6-TLP-00002004	TLP SYS CONDENSATE COLLECTION DISTRIBUTION

Q
QUALITY DESIGNATOR

REVISION HISTORY

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 9			DRW	JDM	1/14/11

ISSUED BY RPP-WTP PDC
ISSUE STAMP

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	10

	BY	DATE
ORIGINATOR		01/13/11
CHECKER		1/13/11
APPROVER		1/14/11
REVIEWER	D. MILDON	1/13/11
		1/14/11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-03-008 REV: 2
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES

BECHTEL
RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW EVAPORATION PROCESS SYSTEM CONDENSER TLP-COND-00001

SCALE: NONE
24590-PTF-M6-TLP-00002001
REV 0

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREQ-002

"E" SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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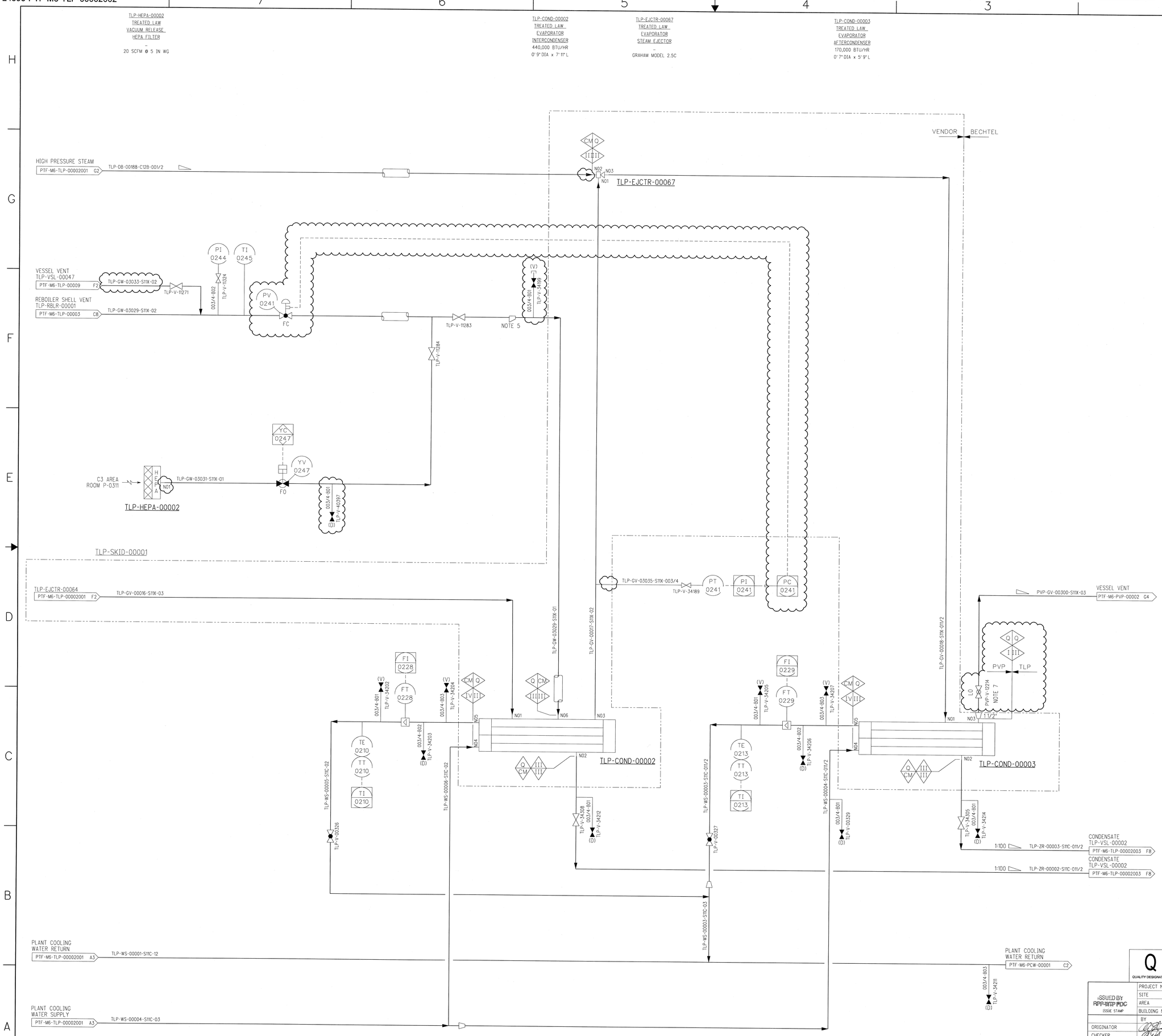
FORM E_SDN.DGN 02/2009



NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING UNLESS OTHERWISE NOTED.
5. LOCATE REDUCER AND ISOLATION VALVE AT VENDOR SKID BOUNDARY.
6. DO NOT ROUTE OR SEND TO FLOOR DRAINS. DANGEROUS WASTE MUST BE COLLECTED AND PROPERLY MANAGED.
7. PVP-V-12214 IS INTENDED FOR CONDENSER MAINTENANCE ISOLATION AND IS LOCKED OPEN TO COMPLY WITH API STANDARD 521 AND ASME CODE (UG-140(a)). VALVE TO BE INSTALLED NEAR REDUCER AND WITHIN OPERATOR REACH.
8. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-PTF-M6-TLP-00002 REV. 4. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6LN-PVP-00001, 24590-PTF-M6LN-TLP-00002, -00010, 24590-PTF-M6N-M80T-00080, 00092, 24590-PTF-M6N-TLP-00043, AND -00048.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).
2. THE REQUIRED BATCH SEQUENCES, PERMISSIVES, INTERLOCKS, ALARMS AND OPERATOR INTERFACE POINTS ARE FULLY DESCRIBED IN THE TLP SYSTEM LOGIC DIAGRAMS (FUTURE) AND THE TLP SYSTEM DESCRIPTION (FUTURE REVISION).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

Q
QUALITY DESIGNATOR

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 8	RJ	GW	DM	JBH	1/14/11

REVISION HISTORY

ISSUED BY RPP-WTP PDC
ISSUE STAMP

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	10

	BY	DATE
ORIGINATOR		1/13/11
CHECKER		1/13/11
APPROVER		1/14/11
REVIEWER		1.13.11
		1/14/11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-03-008 REV: 2
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES

BECHTEL
RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW EVAPORATION PROCESS SYSTEM CONDENSERS TLP-COND-00002 AND -00003

SCALE: NONE
24590-PTF-M6-TLP-00002002
REV 0

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SEQ-002

'E' SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

FORM E_SDN.DGN 02/2009

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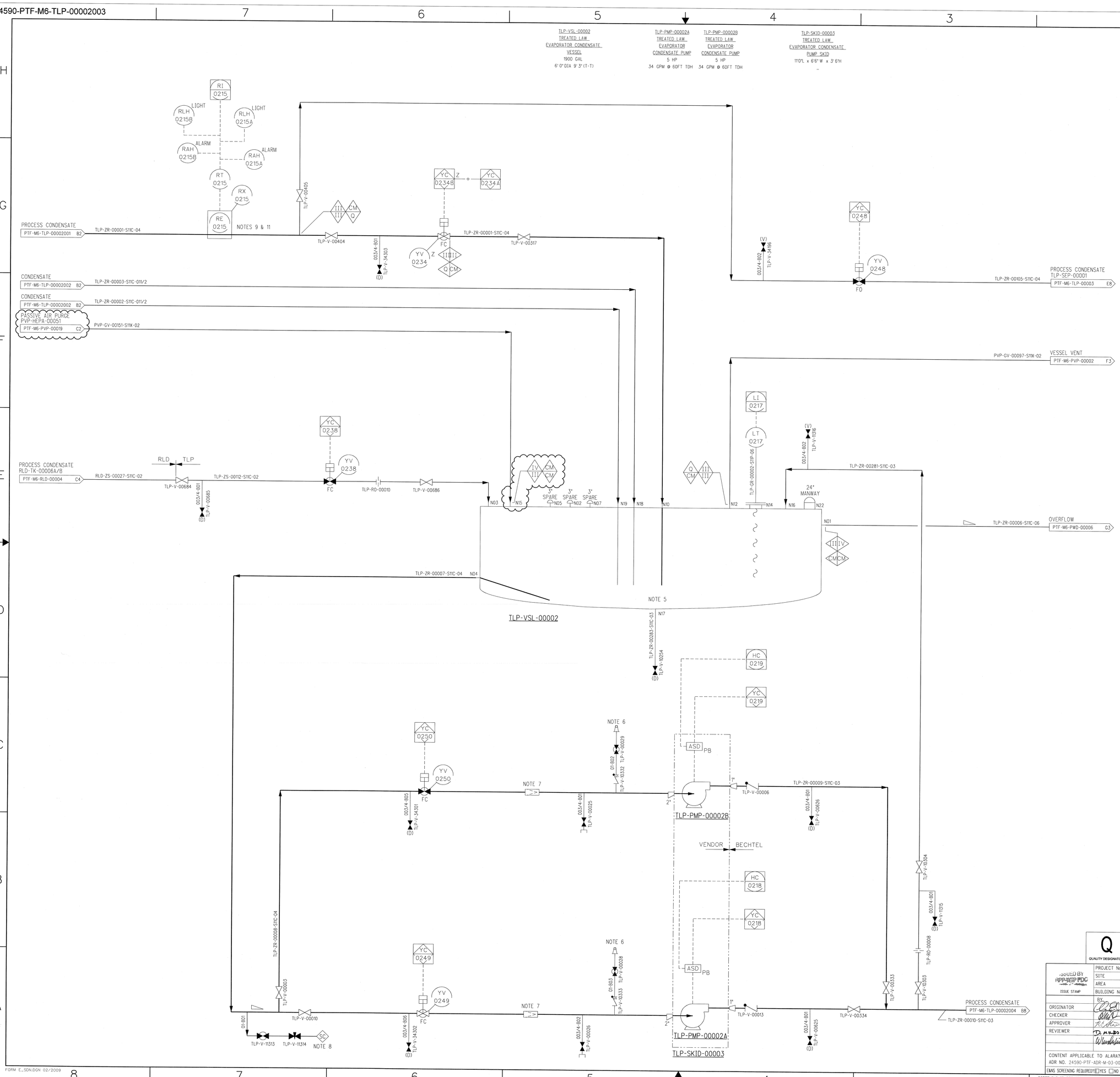


NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
5. SEE DRAWING 24590-PTF-M6-RLD-00006 FOR PLANT WASH REPRESENTATION AND NOZZLES UTILIZED.
6. CONNECTION PROVIDED FOR REAGENTS, PLANT WASH, AND SERVICE AIR.
7. REMOVABLE TEMPORARY START-UP STRAINER, TO BE REPLACED WITH PIPING SPOOL AFTER START-UP.
8. LOCATE THE SAMPLE CONNECTION IN AN ACCESSIBLE AREA AND IN A SAFE LOCATION TO FACILITATE SAMPLE CONNECTION. THE BALL VALVE, NEEDLE VALVE, AND SAMPLE CONNECTION POINT SHALL BE WITHIN OPERATOR'S IMMEDIATE REACH WHILE COLLECTING A SAMPLE. PROVIDE A NIPPLE DOWNSTREAM OF THE NEEDLE VALVE WITH A MNPT TERMINUS CLOSED BY A FNPT CAP. DO NOT POCKET THE LINE. DOWNSTREAM OF THE BALL VALVE, THE LINE SHALL BE FREE DRAINING.
9. LINE WILL BE SELF-DRAINING OVER ITS ENTIRE LENGTH. IF MONITOR DETECTS SOURCE OF RADIATION, LINE CAN BE FLUSHED WITH DEMIN WATER FROM TLP-COND-00001 TO TLP-VSL-00002 OR TLP-SEP-00001 PRIOR TO ONSET OF ANY MAINTENANCE ACTIVITIES.
10. DO NOT ROUTE OR SEND TO FLOOR DRAINS. DANGEROUS WASTE MUST BE COLLECTED AND PROPERLY MANAGED.
11. ALARM RAH-0215A TO BE LOCATED NEAR CONDENSER TLP-COND-00002 AND SUPPLEMENTED WITH A ROTATING LIGHT. ALARM RAH-0215B TO BE LOCATED NEAR VESSEL TLP-VSL-00002 AND SUPPLEMENTED WITH A ROTATING LIGHT.
12. CONDENSATE RETURN LINES SHALL BE SLOPED 1:100 TOWARDS THE INDICATED CONDENSATE VESSEL.
13. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-PTF-M6-TLP-00002 REV. 4. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6N-M80T-00080, 00097, AND 24590-PTF-M6N-TLP-00049.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).
2. THE REQUIRED BATCH SEQUENCES, PERMISSIVES, INTERLOCKS, ALARMS AND OPERATOR INTERFACE POINTS ARE FULLY DESCRIBED IN THE TLP SYSTEM LOGIC DIAGRAMS (FUTURE) AND THE TLP SYSTEM DESCRIPTION (FUTURE REVISION).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

Q
QUALITY DESIGNATOR

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 13					1/14/11

REVISION HISTORY

ISSUED BY RPP-WTP PDC
ISSUE STAMP

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	10

	BY	DATE
ORIGINATOR		1/13/11
CHECKER		1/13/11
APPROVER		1/14/11
REVIEWER		1-13-11
		1/14/11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-03-008 REV: 2
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES:

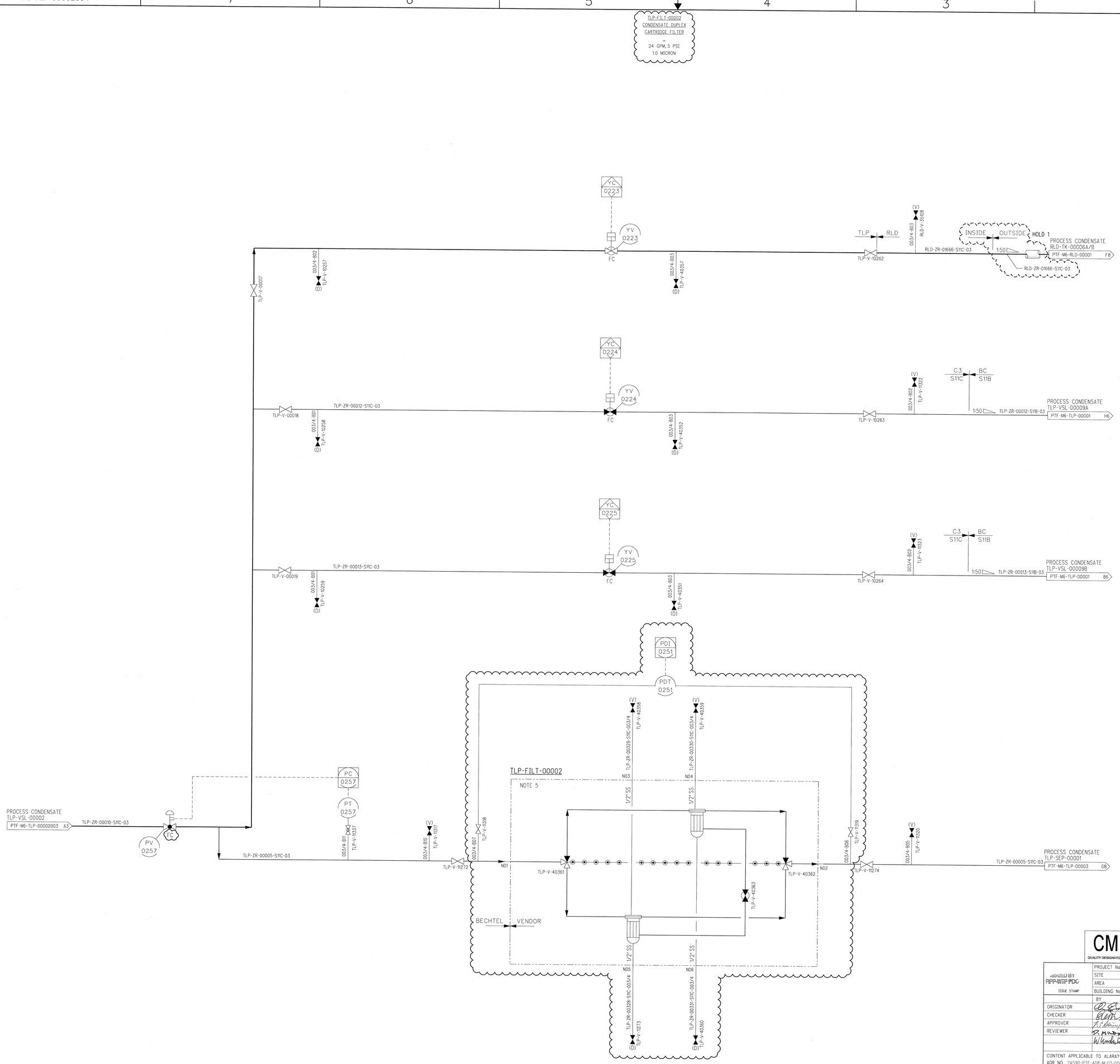
RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW EVAPORATION PROCESS SYSTEM CONDENSATE COLLECTION
TLP-VSL-00002

SCALE: NONE
24590-PTF-M6-TLP-00002003
REV 0

FORM E_SDN.DGN 02/2009
SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREQ-002
D-SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED
R11308489
1/13/2011 1:52:39 PM
PLOTTED BY: tdbarnes C:\Work\tdbarnes\dms03837\PTFM6TLP00002003.dgn



NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING UNLESS OTHERWISE NOTED, EXCEPT BLACK CELL LINES WHICH ARE SELF-DRAINING.
5. DUPLEX CARTRIDGE FILTER TLP-FILT-00002 SHALL RETAIN PARTICLES OF ONE MICRON AND LARGER. FILTER PDT SHALL BE PROVIDED WITH INTEGRAL INDICATOR.
6. DO NOT ROUTE OR SEND TO FLOOR DRAINS. DANGEROUS WASTE DRAINED MUST BE COLLECTED AND PROPERLY MANAGED.
7. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-PTF-M6-TLP-00002 REV. 4. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6LN-TLP-00002, 24590-PTF-M6N-M80T-00016, -00080, AND -00099.

HOLD/OPEN ITEMS:

1. HOLD PENDING CLOSURE OF APPROPRIATE ACTIONS IN 24590-WTP-PIER-MGT-10-0559-C (UNDER DEVELOPMENT).

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).
2. THE REQUIRED BATCH SEQUENCES, PERMISSIVES, INTERLOCKS, ALARMS AND OPERATOR INTERFACE POINTS ARE FULLY DESCRIBED IN THE TLP SYSTEM LOGIC DIAGRAMS (FUTURE) AND THE TLP SYSTEM DESCRIPTION (FUTURE REVISION).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

CM
QUALITY DESIGNATOR

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 7					1/14/11

REVISION HISTORY

ISSUED BY PTF-WTP PDC
ISSUE STAMP

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	10	
	BY	DATE
ORIGINATOR		1/13/11
CHECKER		1/13/11
APPROVER		1/14/11
REVIEWER		1-13-11
		1/14/11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-03-008 REV: 2
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW EVAPORATION PROCESS SYSTEM CONDENSATE DISTRIBUTION

SCALE: NONE

24590-PTF-M6-TLP-00002004

REV 0

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SEC-002

'E' SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

FORM E_SDN.DGN 02/2009

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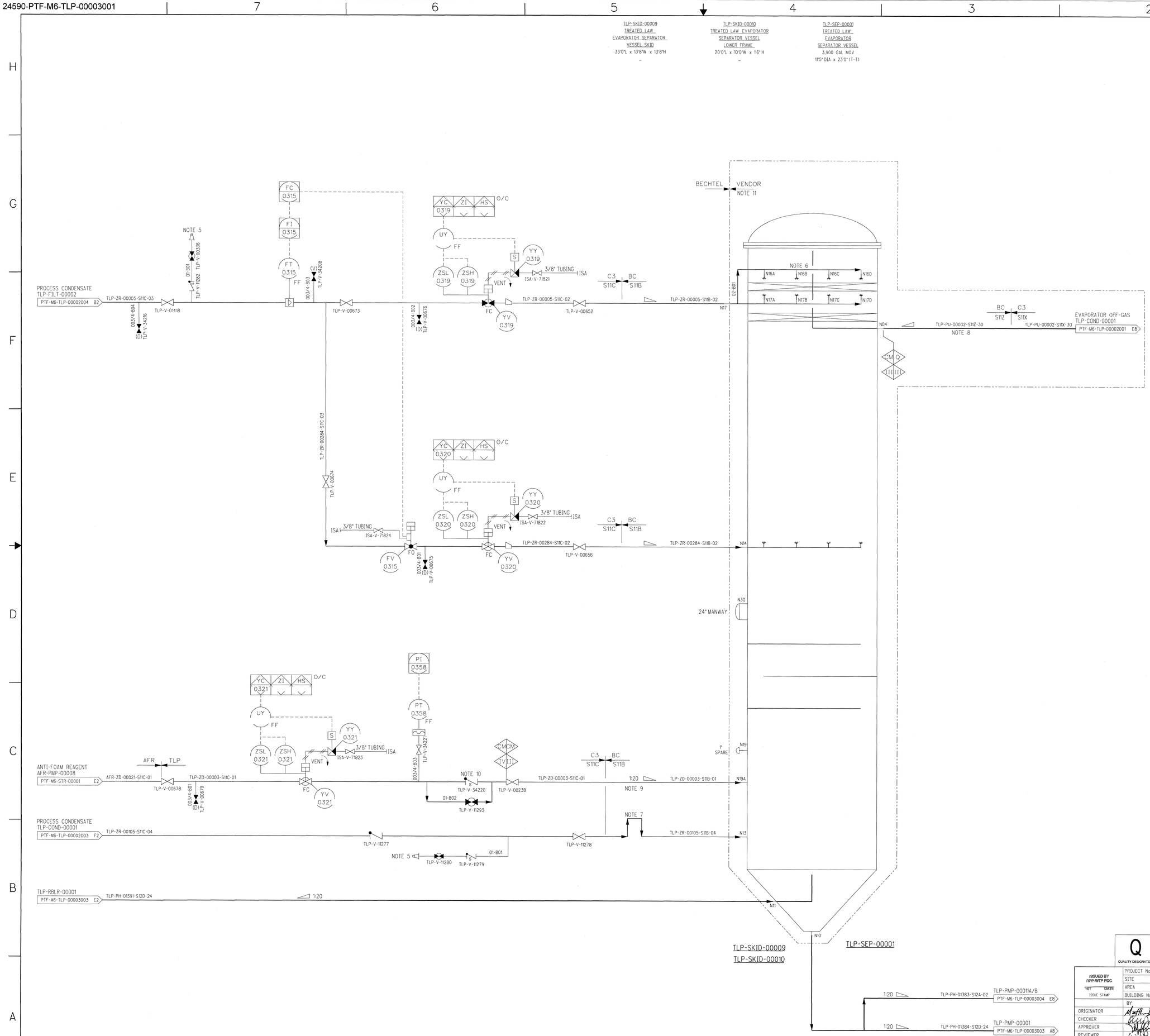

NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, EXCEPT BLACK CELL LINES WHICH ARE SELF DRAINING, UNLESS OTHERWISE NOTED.
5. CONNECTION PROVIDED FOR REAGENTS, PLANT WASH, AND SERVICE AIR.
6. SPRAY NOZZLES FOR UPPER DEMISTER PAD ARE MOUNTED EXTERNALLY AROUND THE PERIMETER OF THE SEPARATOR SHELL. THESE NOZZLES ARE SHOWN INTERNALLY TO DEPICT THE FUNCTION RATHER THAN LOCATION.
7. MINIMUM HYDRAULIC SEAL HEIGHT IS 3 FT-6 IN.
8. LINE TLP-PU-00002-S11X-30 SHALL BE PROVIDED BY TLP-SKID-00009 VENDOR, SEPARATE FROM SKID.
9. MINIMIZE BLACK CELL HORIZONTAL RUN. NO TRAPS.
10. CHECK VALVE OPENING PRESSURE IS 55 PSIG.
11. EQUIPMENT WITHIN VENDOR BOUNDARY IS TO BE SUPPLIED BY VENDOR. PIPING AND PIPE SUPPORT TO BE PROVIDED BY BECHTEL.
12. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-PTF-M6-TLP-00003 REV 4. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6LN-M80T-00019 AND 24590-PTF-M6N-M80T-00080.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

DRAWING INDEX

DWG NO	TITLE
24590-PTF-M6-TLP-00003001	TLP PROCESS SYSTEM SEPARATOR TLP-SEP-00001
24590-PTF-M6-TLP-00003002	TLP PROCESS SYSTEM BUBBLERS TLP-SEP-00001
24590-PTF-M6-TLP-00003003	TLP PROCESS SYSTEM SEPARATOR TLP-RBLR-00001
24590-PTF-M6-TLP-00003004	TLP PROCESS SYSTEM TLP-PMP-00011A/B

Q
QUALITY DESIGNATOR

REVISION HISTORY

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 12	MG				8/26/11

ISSUED BY RPP-WTP PDC
"IFT" DATE
ISSUE STAMP

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	10	

	BY	DATE
ORIGINATOR		8-26-11
CHECKER		8/26/11
APPROVER		8/26/11
REVIEWER		8/26/11
		8-26-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-03-008 REV: 2
EMS SCREENING REQUIRED? [X] YES [ ] NO | EMS INITIAL IF YES: [illegible]

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW EVAPORATION PROCESS SYSTEM SEPARATOR TLP-SEP-00001

SCALE: NONE

24590-PTF-M6-TLP-00003001

REV 0

FORM E_SDN.DGN 02/2009

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GRP-SREC-002

COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

"E" SIZE - 44x34

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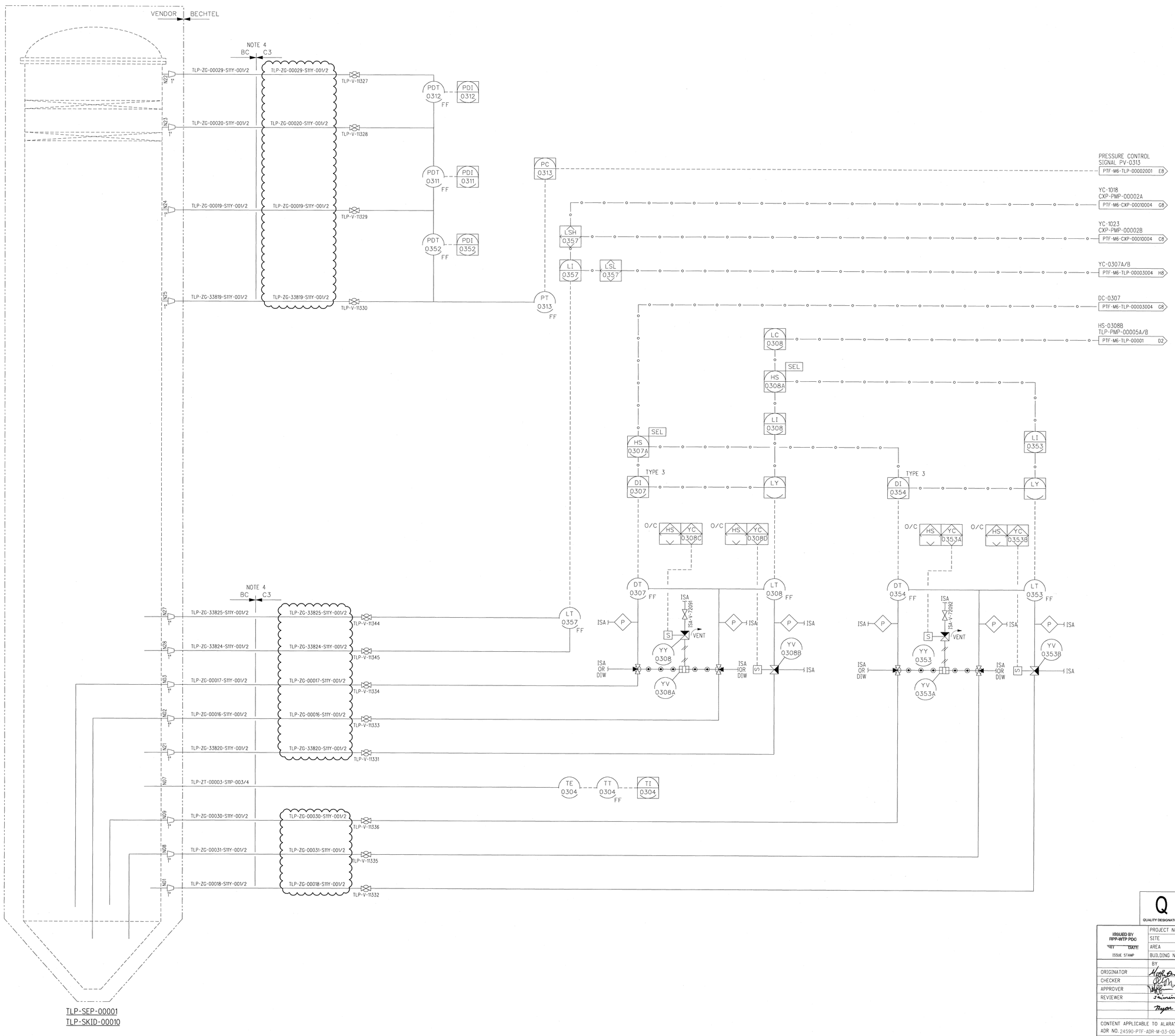

NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. THE PRESSURE BOUNDARY FOR ALL COMPONENTS SHOWN ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
3. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, EXCEPT BLACK CELL LINES WHICH ARE SELF DRAINING, UNLESS OTHERWISE NOTED.
4. FOR BUBBLER RACKS AND SYSTEM CONNECTIONS, SEE DRAWING 24590-PTF-M6-ISA-00010 .
5. EQUIPMENT WITHIN VENDOR BOUNDARY IS TO BE SUPPLIED BY VENDOR. PIPING AND PIPE SUPPORT TO BE PROVIDED BY BECHTEL.
6. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS, AND IN PART, SUPERSEDES 24590-PTF-M6-TLP-00003 REV 4. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6LN-M80T-00019, 24590-PTF-M6N-M80T-00080, AND -00112.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 6	MS				8/26/11

Q QUALITY DESIGNATOR

REVISION HISTORY

ISSUED BY RPP-WTP PDC — DATE — ISSUE STAMP

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	10	

	BY	DATE
ORIGINATOR		8-26-11
CHECKER		8-26-11
APPROVER		8/26/11
REVIEWER		8/26/11
		8-26-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-03-008 REV: 2
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF TREATED LAW EVAPORATION PROCESS SYSTEM SEPARATOR TLP-SEP-00001

SCALE: NONE

24590-PTF-M6-TLP-00003002

REV 0

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

2

'E' SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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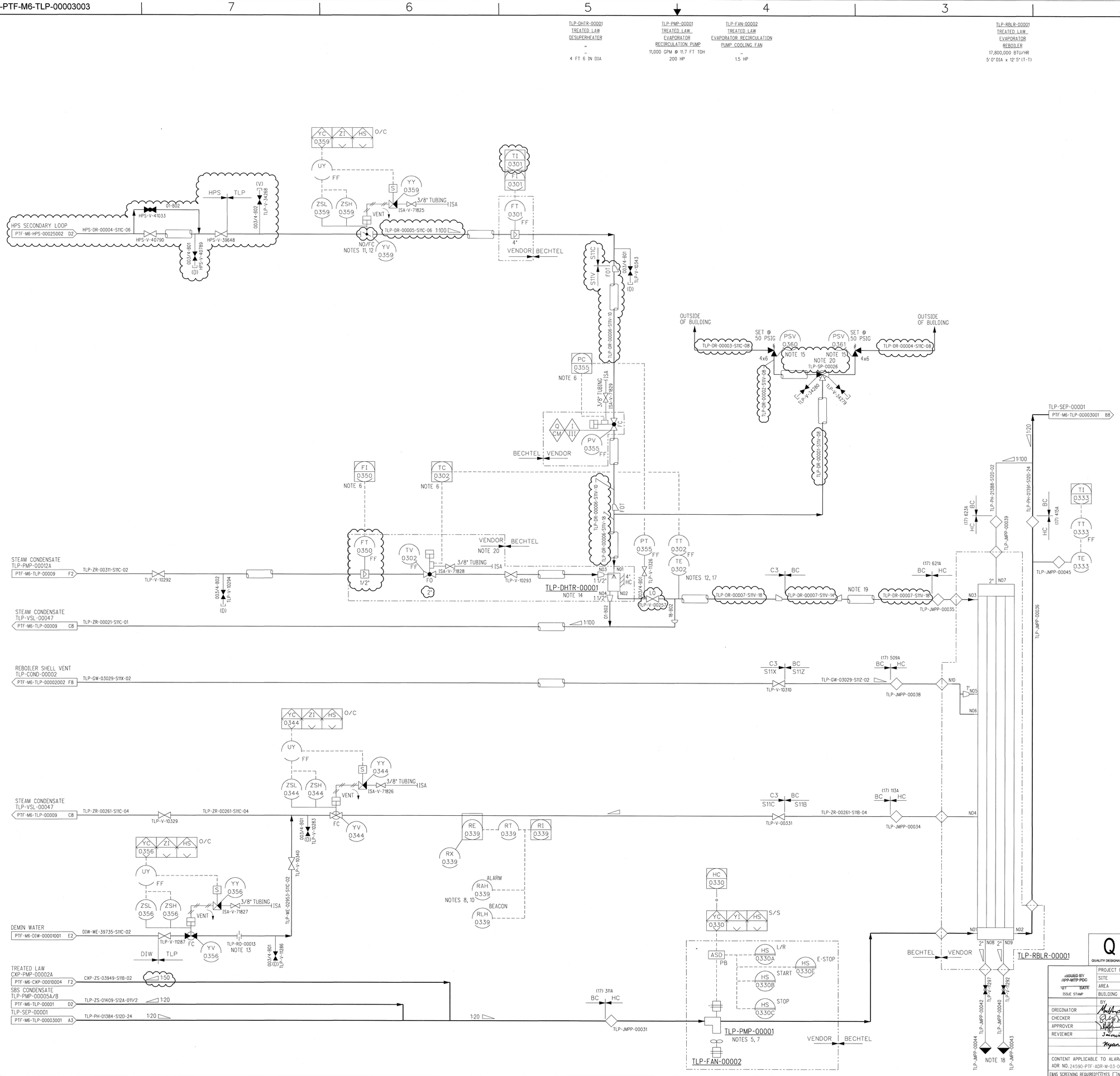
PLOTTED BY: gpodeks

FORM E_SDN.DGN 02/2009



NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, EXCEPT BLACK CELL LINES WHICH ARE SELF DRAINING, UNLESS OTHERWISE NOTED
5. RECIRCULATION PUMP DISCHARGE RATE WILL BE ESTIMATED BASED ON MOTOR AMPERAGE MEASUREMENT AND PUMP PERFORMANCE CURVE.
6. RECYCLED STEAM CONDENSATE IS INJECTED INTO THE REBOILER STEAM SUPPLY TO MAINTAIN SATURATED CONDITIONS. CONTROL OF THE CONDENSATE FLOW RATE IS PROPORTIONAL TO THE DEVIATION BETWEEN THE MEASURED TEMPERATURE AND THE DESIRED SATURATION TEMPERATURE. THE SATURATION TEMPERATURE IS DERIVED FROM THE MEASURED STEAM PRESSURE.
7. SEE DRAWING 24590-PTF-M6-PSW-00006002 FOR PUMP SEAL WATER CONNECTIONS.
8. RAH-0339 IN LOCAL ROOM AND SUPPLEMENTED WITH A ROTATING BEACON.
9. ALL EQUIPMENT WITHIN VENDOR BOUNDARY SUPPLIED BY VENDOR EXCEPT PIPING, MANUAL VALVES, AND PIPE SUPPORT TO BE SUPPLIED BY BECHTEL. EQUIPMENT DESIGN DEPENDENT ON VENDOR SYSTEM DESIGN.
10. UPON RAH-0339 TRIP SHUT YV-0359, YV-0344, YV-0906 OPEN YV-0908.
11. YV-0359 IS A SLOW OPENING AND SLOW CLOSING BUTTERFLY VALVE.
12. HI-HI DESUPERHEATER TEMPERATURE CLOSES VALVE YV-0359.
13. RESTRICTION ORIFICE (20 GPM).
14. TLP-DHTR-00001 SHALL HAVE 4" OF "HC" INSULATION.
15. IN ORDER TO MEET INLET PRESSURE DROP REQUIREMENTS, MINIMIZE THE LENGTH OF RELIEF VALVE PIPING. LOCATE REDUCER AS CLOSE AS POSSIBLE TO THE RELIEF VALVE INLET. MINIMIZE THE TOTAL LENGTH OF DISCHARGE PIPING. LOCATE EXPANSION AS CLOSE AS POSSIBLE TO THE RELIEF VALVE DISCHARGE.
16. WTP IS RESPONSIBLE FOR QUALIFICATION OF SMALL BORE PIPING FOR REBOILER.
17. INSTALL TEMPERATURE ELEMENT INSIDE A THERMOWELL. PROVIDE A SHIELD UPSTREAM OF THE THERMOWELL FROM SUBCOOLED CONDENSATE DROPLETS.
18. WASTE CAN NOT BE DRAINED ON HOT CELL FLOOR. DO NOT ROUTE OR SEND TO FLOOR DRAINS. DANGEROUS WASTE DRAINED MUST BE COLLECTED AND PROPERLY MANAGED.
19. INSULATE WITH REFLECTIVE METAL INSULATION.
20. TLP-SP-00026 ISA ROTARY-TYPE SELECTOR 3-WAY VALVE WITH 2 INTEGRAL BLEED VALVES TLP-V-34279 AND TLP-V-39280.
21. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND IN PART SUPERSEDES 24590-PTF-M6-TLP-00003 REV 4. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6LN-TLP-00001, -00010, 24590-PTF-M6N-10-00013, 24590-PTF-M6N-M8OT-00080, 24590-PTF-M6N-TLP-00047, -00050, AND 24590-PTF-M6PR-TLP-00002.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 21	MS	RVM	DRC	JM	8/26/11

QUALITY DESIGNATOR: Q

REVISION HISTORY

ISSUED BY RPP-WTP PDC / NIT DATE / ISSUE STAMP		
PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	10	

	BY	DATE
ORIGINATOR		8-26-11
CHECKER		8/26/11
APPROVER		8/26/11
REVIEWER	Jasmini Dave	8/26/11
	Megan Zickler	8-26-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-03-008 REV: 2
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW EVAPORATION PROCESS SYSTEM SEPARATOR TLP-RBLR-00001

SCALE: NONE

24590-PTF-M6-TLP-00003003

REV 0

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

"E" SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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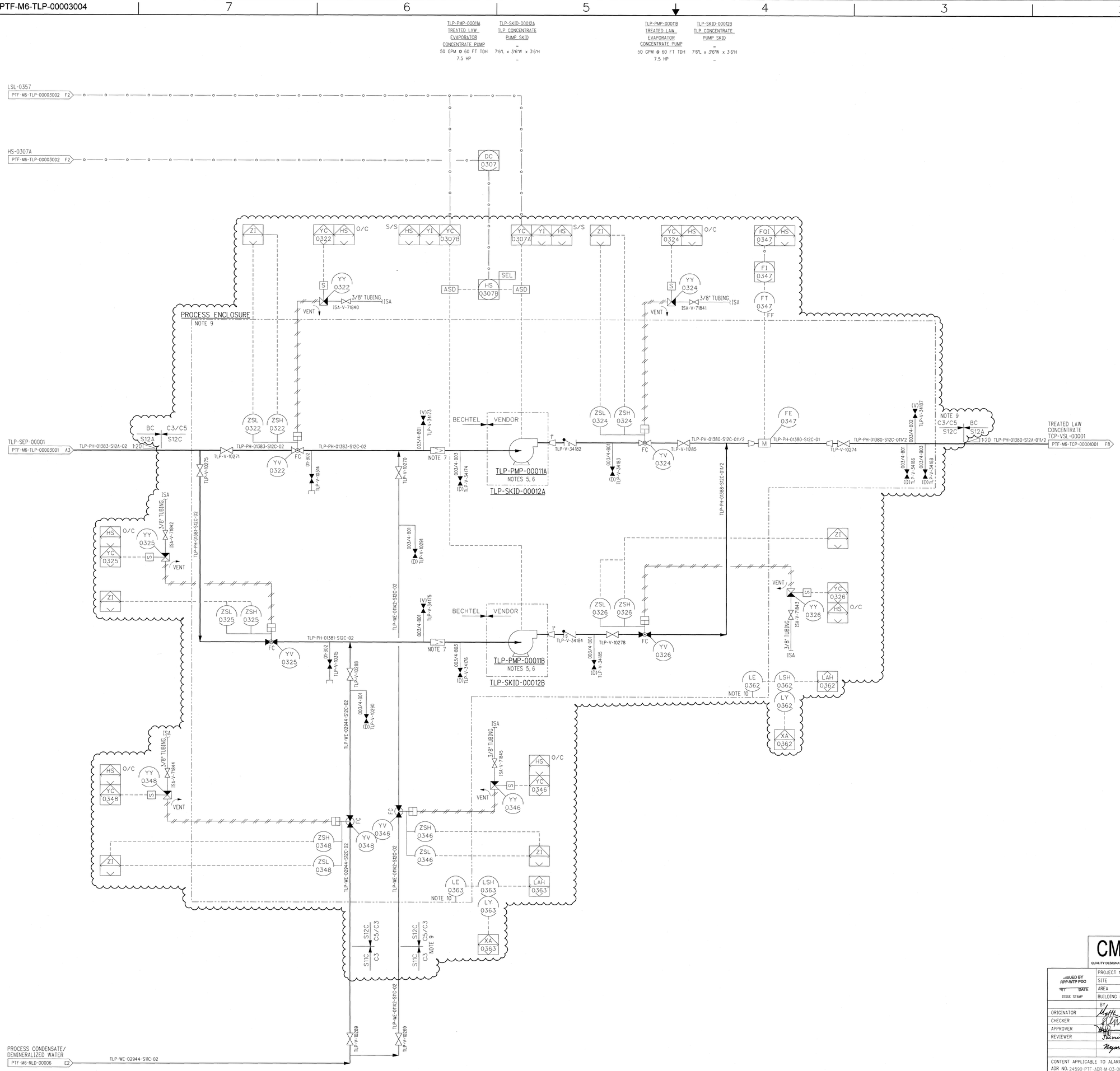
FORM E_SDN.DGN 02/2009



NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, EXCEPT BLACK CELL LINES WHICH ARE SELF DRAINING, UNLESS OTHERWISE NOTED
5. SEE DRAWING 24590-PTF-M6-PSW-00006002 FOR PUMP SEAL WATER CONNECTIONS.
6. EQUIPMENT WITHIN VENDOR BOUNDARY IS TO BE SUPPLIED BY VENDOR. PIPING AND PIPE SUPPORT TO BE PROVIDED BY BECHTEL.
7. REMOVABLE TEMPORARY START-UP STRAINER, TO BE REPLACED WITH PIPING SPOOL AFTER START-UP.
8. WASTE CAN NOT BE DRAINED ON HOT CELL FLOOR. DO NOT ROUTE OR SEND TO FLOOR DRAINS. DANGEROUS WASTE DRAINED MUST BE COLLECTED AND PROPERLY MANAGED.
9. PROCESS ENCLOSURE IS CONSIDERED SECONDARY CONTAINMENT WHICH REQUIRES DWP PAINT COATING AND LEAK DETECTION. PROCESS ENCLOSURE SHALL BE SEALED TO ENSURE PROPER VENT OPERATION.
10. LE-0362/0363 IS CABLE TYPE CONDUCTIVITY LEVEL DETECTION ELEMENT. CONDUCTIVITY CABLE IS PLACED ON PROCESS FLOOR FOR LEAK DETECTION AROUND PUMPS AND UNDERNEATH PIPING AND VALVES.
11. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND IN PART SUPERSEDES 24590-PTF-M6-TLP-00003 REV 4. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6N-M8OT-00080, 24590-PTF-M6N-TLP-00047, AND -00051.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

CM
QUALITY DESIGNATOR

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 11	HG	RL	JD	JD	8/26/11

REVISION HISTORY

ISSUED BY RPP-WTP PDC
DATE
ISSUE STAMP

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	10

	BY	DATE
ORIGINATOR	Matthew Hardin	8-26-11
CHECKER	[illegible]	8/26/11
APPROVER	[illegible]	8/26/11
REVIEWER	Jasmine Dave	8/26/11
	Megan Zacks	8-26-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-03-008 REV: 2
E&NS SCREENING REQUIRED? [X] YES [ ] NO E&NS INITIAL IF YES

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW EVAPORATION PROCESS SYSTEM
TLP-PMP-00011A/B

SCALE: NONE

24590-PTF-M6-TLP-00003004

REV 0

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SRC-002

'E' SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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PLOTTED BY: mdritter

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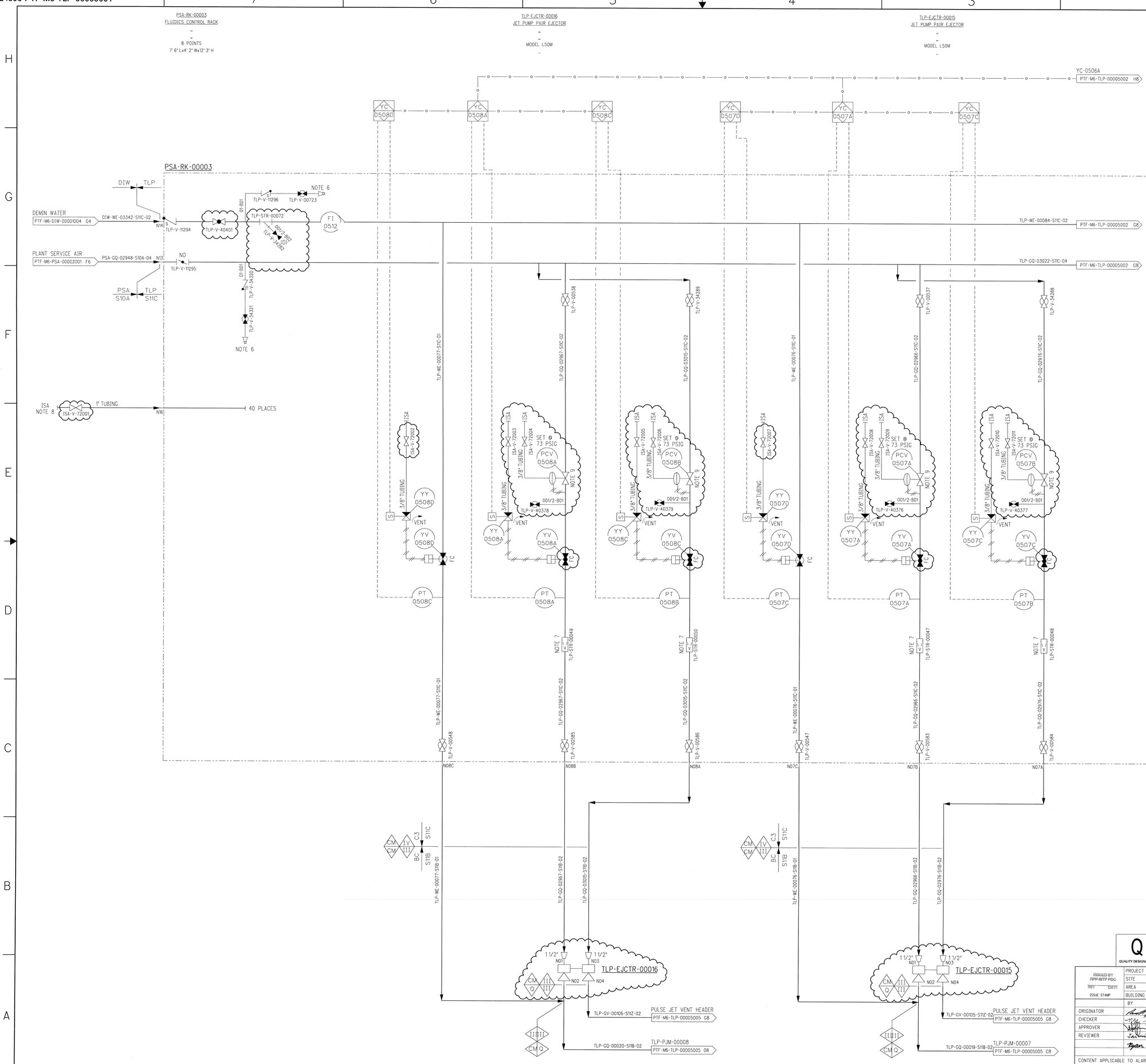
FORM E_SDN.DGN 02/2009



NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, EXCEPT BLACK CELL LINES WHICH ARE SELF DRAINING, UNLESS OTHERWISE NOTED.
5. FOR PROCESS INFORMATION, REFER TO DRAWING 24590-PTF-M6-TLP-00001.
6. CONNECTION PROVIDED FOR REAGENTS, PLANT WASH AND SERVICE AIR.
7. STRAINER IS PERMANENTLY INSTALLED.
8. ALL TUBING OUTSIDE THE RACK TO BE FIELD RUN. TUBING ROUTING, SPECIFICATION OF ADDITIONAL IN-TUBING DEVICES, AND TAGGING OF IN-TUBING DEVICES WITHIN THE RACK TO BE DONE IN ACCORDANCE WITH C&I INSTALLATION DETAILS AND DESIGN GUIDE 24590-WTP-GPG-ENG-0142.
9. RECOMMENDED INSTALLATION OF THE PCV IS TO CONNECT THE CONTROL LINE TO A STRAIGHT PIPE RUN OF PIPE 3 TO 5 FEET DOWNSTREAM OF THE PCV AND TO HAVE 3 FEET OF STRAIGHT PIPE RUN ON BOTH SIDES OF THE VALVE.
10. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-PTF-M6-TLP-00005 REV 3. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6LN-M80T-00033, 24590-PTF-M6LN-TLP-00005, -00008, 24590-PTF-M6N-M80T-00080, AND -00132.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

DRAWING INDEX

DWG NO	TITLE
24590-PTF-M6-TLP-00005001	TLP SYSTEM UTILITY RACK PSA-RK-00003
24590-PTF-M6-TLP-00005002	TLP SYSTEM UTILITY RACK PSA-RK-00003
24590-PTF-M6-TLP-00005003	TLP SYSTEM UTILITY RACK PSA-RK-00003
24590-PTF-M6-TLP-00005004	TLP SYSTEM UTILITY RACK PSA-RK-00003
24590-PTF-M6-TLP-00005005	TLP SYSTEM VESSEL TLP-VSL-00009A PJM'S

Q
QUALITY DESIGNATOR

REVISION HISTORY

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 10	RSW				10/7/11

ISSUED BY RPP-WTP PDC
INIT DATE
ISSUE STAMP

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	10	

	BY	DATE
ORIGINATOR		10/5/11
CHECKER		10/5/11
APPROVER		10/7/11
REVIEWER		10/5/11
		10-6-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-03-008 REV: 2
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES: DVB

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW EVAPORATION PROCESS SYSTEM UTILITY RACK PSA-RK-00003

SCALE: NONE

24590-PTF-M6-TLP-00005001

REV 0

FORM E_SDN.DGN 02/2009

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

'E' SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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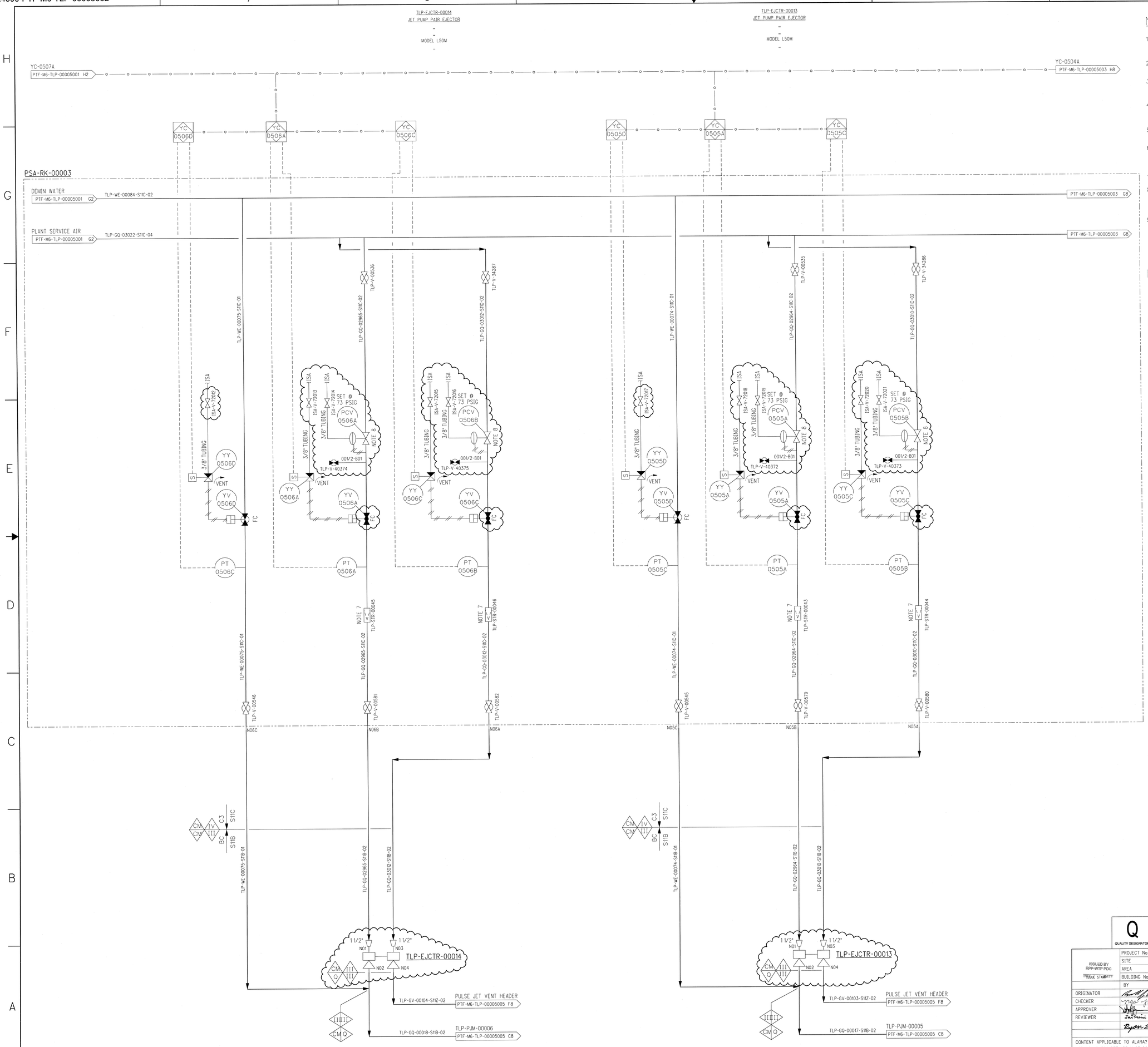

NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV, UNLESS OTHERWISE NOTED
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, EXCEPT BLACK CELL LINES WHICH ARE SELF-DRAINING, UNLESS OTHERWISE NOTED.
5. FOR PROCESS INFORMATION, REFER TO DRAWING 24590-PTF-M6-TLP-00001.
6. TUBING ROUTING, SPECIFICATION OF ADDITIONAL IN-TUBING DEVICES, AND TAGGING OF IN-TUBING DEVICES WITHIN THE RACK TO BE DONE IN ACCORDANCE WITH C&I INSTALLATION DETAILS AND DESIGN GUIDE 24590-WTP-GPG-ENG-0142.
7. STRAINER IS PERMANENTLY INSTALLED.
8. RECOMMENDED INSTALLATION OF THE PCV IS TO CONNECT THE CONTROL LINE TO A STRAIGHT PIPE RUN OF PIPE 3 TO 5 FEET DOWNSTREAM OF THE PCV AND TO HAVE 3 FEET OF STRAIGHT PIPE RUN ON BOTH SIDES OF THE VALVE.
9. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-PTF-M6-TLP-00005 REV 3. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6LN-TLP-00005, 24590-PTF-M6N-M80T-00080, AND -00132.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

Q
QUALITY DESIGNATOR

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 9	RSW	JD	RLG		10/7/11

REVISION HISTORY

ISSUED BY RPP-WTP PDC
ISSUE STATUS

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	10	

	BY	DATE
ORIGINATOR		10/5/11
CHECKER		10/5/11
APPROVER		10/7/11
REVIEWER		10/5/11
		10-6-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-03-008 REV-2
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW EVAPORATION PROCESS SYSTEM UTILITY RACK PSA-RK-00003

SCALE: NONE

24590-PTF-M6-TLP-00005002

REV 0

R11431846

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

E SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

FORM E_SDN.DGN 02/2009

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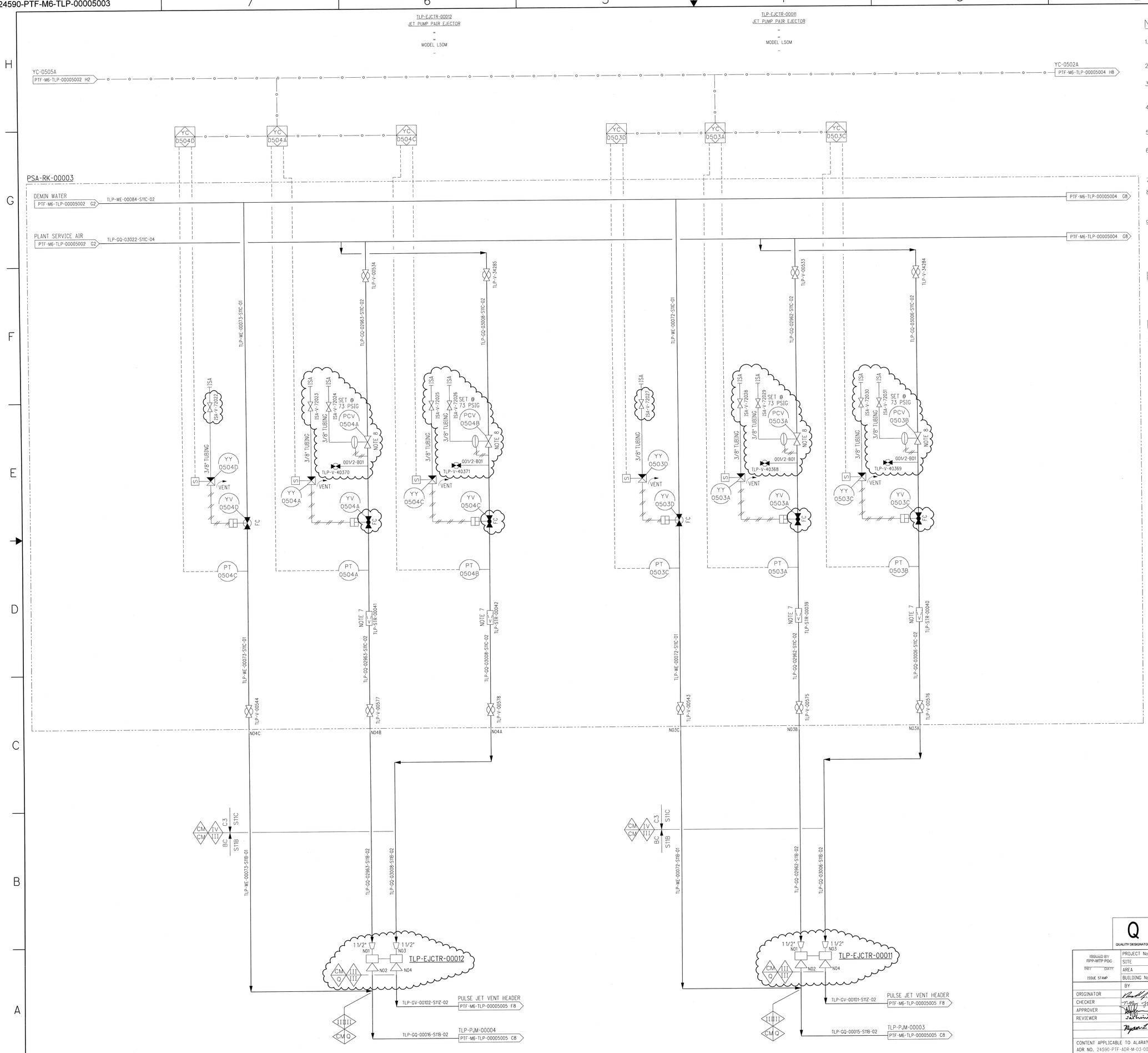

NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING, IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV, UNLESS OTHERWISE NOTED
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, EXCEPT BLACK CELL LINES WHICH ARE SELF-DRAINING, UNLESS OTHERWISE NOTED.
5. FOR PROCESS INFORMATION, REFER TO DRAWING 24590-PTF-M6-TLP-00001.
6. TUBING ROUTING, SPECIFICATION OF ADDITIONAL IN-TUBING DEVICES, AND TAGGING OF IN-TUBING DEVICES WITHIN THE RACK TO BE DONE IN ACCORDANCE WITH C&I INSTALLATION DETAILS AND DESIGN GUIDE 24590-WTP-GPG-ENG-0142.
7. STRAINER IS PERMANENTLY INSTALLED.
8. RECOMMENDED INSTALLATION OF THE PCV IS TO CONNECT THE CONTROL LINE TO A STRAIGHT PIPE RUN OF PIPE 3 TO 5 FEET DOWNSTREAM OF THE PCV AND TO HAVE 3 FEET OF STRAIGHT PIPE RUN ON BOTH SIDES OF THE VALVE.
9. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-PTF-M6-TLP-00005 REV 3. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6LN-TLP-00005, 24590-PTF-M6N-M80T-00080, AND -00132.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

Q
QUALITY DESIGNATOR

REVISION HISTORY

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 9	RSW	WTD	JD	RLC	10/7/11

ISSUED BY RPP-WTP PDC	PROJECT No.	24590
INIT DATE	SITE	HANFORD
	AREA	200E
ISSUE STAMP	BUILDING No.	10

	BY	DATE
ORIGINATOR	Paul J. Wilson	10/4/11
CHECKER	Tracy Stevens	10/5/11
APPROVER	Rick Cole	10/7/11
REVIEWER	Jasmine Save	10/5/11
	Rajan L. Gelli	10-6-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-03-008 REV: 2
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES: [illegible]

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW EVAPORATION PROCESS SYSTEM UTILITY RACK PSA-RK-00003

SCALE: NONE

24590-PTF-M6-TLP-00005003

REV 0

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREQ-002

'E' SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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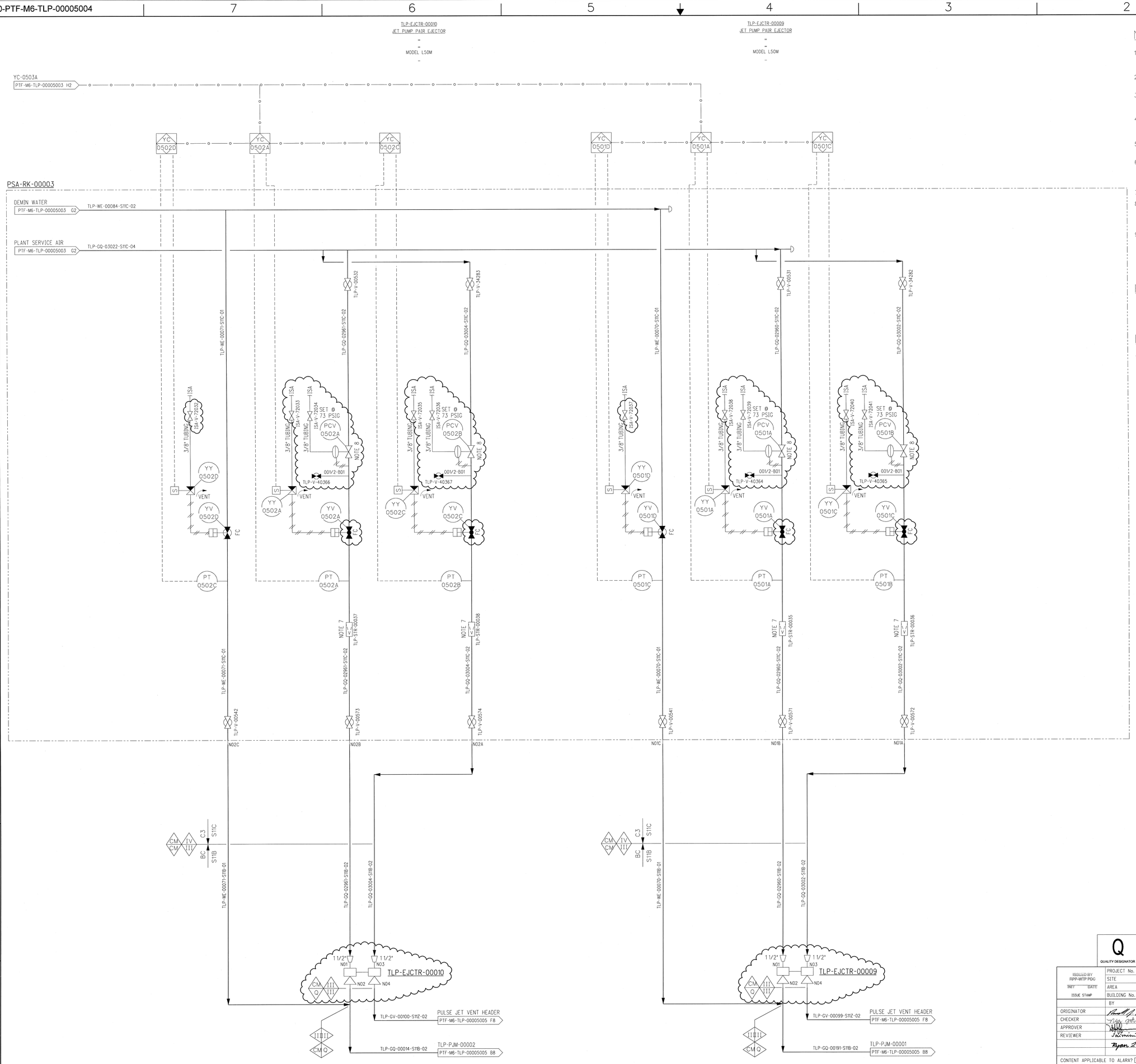
FORM E_SDN.DGN 02/2009

24590-PTF-M6-TLP-00005004



NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING, IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, EXCEPT BLACK CELL LINES WHICH ARE SELF-DRAINING, UNLESS OTHERWISE NOTED.
5. FOR PROCESS INFORMATION, REFER TO DRAWING 24590-PTF-M6-TLP-0001.
6. TUBING ROUTING, SPECIFICATION OF ADDITIONAL IN-TUBING DEVICES, AND TAGGING OF IN-TUBING DEVICES WITHIN THE RACK TO BE DONE IN ACCORDANCE WITH C&I INSTALLATION DETAILS AND DESIGN GUIDE 24590-WTP-GPG-ENG-0142.
7. STRAINER IS PERMANENTLY INSTALLED.
8. RECOMMENDED INSTALLATION OF THE PCV IS TO CONNECT THE CONTROL LINE TO A STRAIGHT PIPE RUN OF PIPE 3 TO 5 FEET DOWNSTREAM OF THE PCV AND TO HAVE 3 FEET OF STRAIGHT PIPE RUN ON BOTH SIDES OF THE VALVE.
9. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-PTF-M6-TLP-00005 REV 3. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6LN-TLP-00005, 24590-PTF-M6N-M80T-00080, AND -00132.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, STSTEM DESCRIPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

Q
QUALITY DESIGNATOR

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 9	RSW				10/7/11

REVISION HISTORY

ISSUED BY RPP-WTP PDC
INIT DATE
ISSUE STAMP

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	10	
	BY	DATE
ORIGINATOR		10/4/11
CHECKER		10/5/11
APPROVER		10/7/11
REVIEWER		10/5/11
		10-6-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-03-008 REV: 2
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW EVAPORATION PROCESS SYSTEM
UTILITY RACK
PSA-RK-00003

SCALE: NONE

24590-PTF-M6-TLP-00005004

REV 0

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

"E" SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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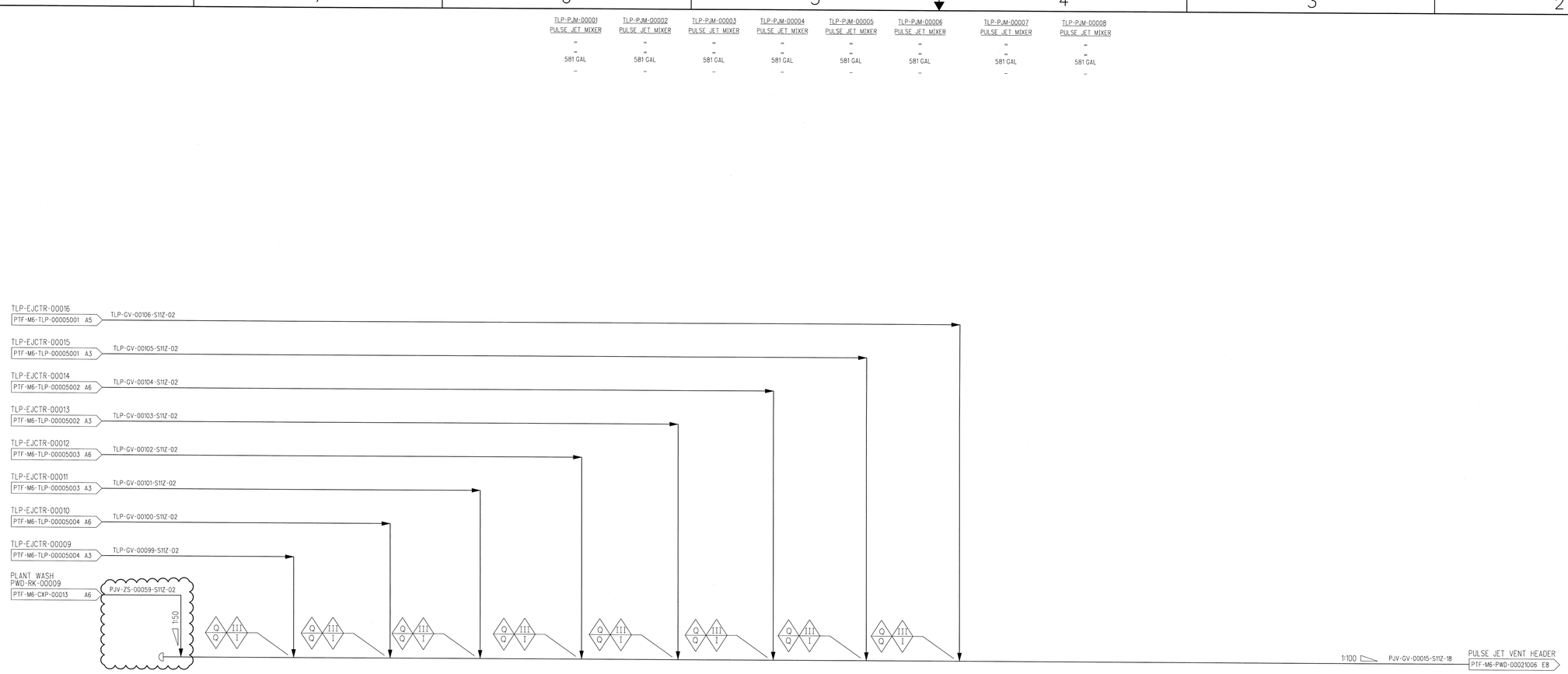
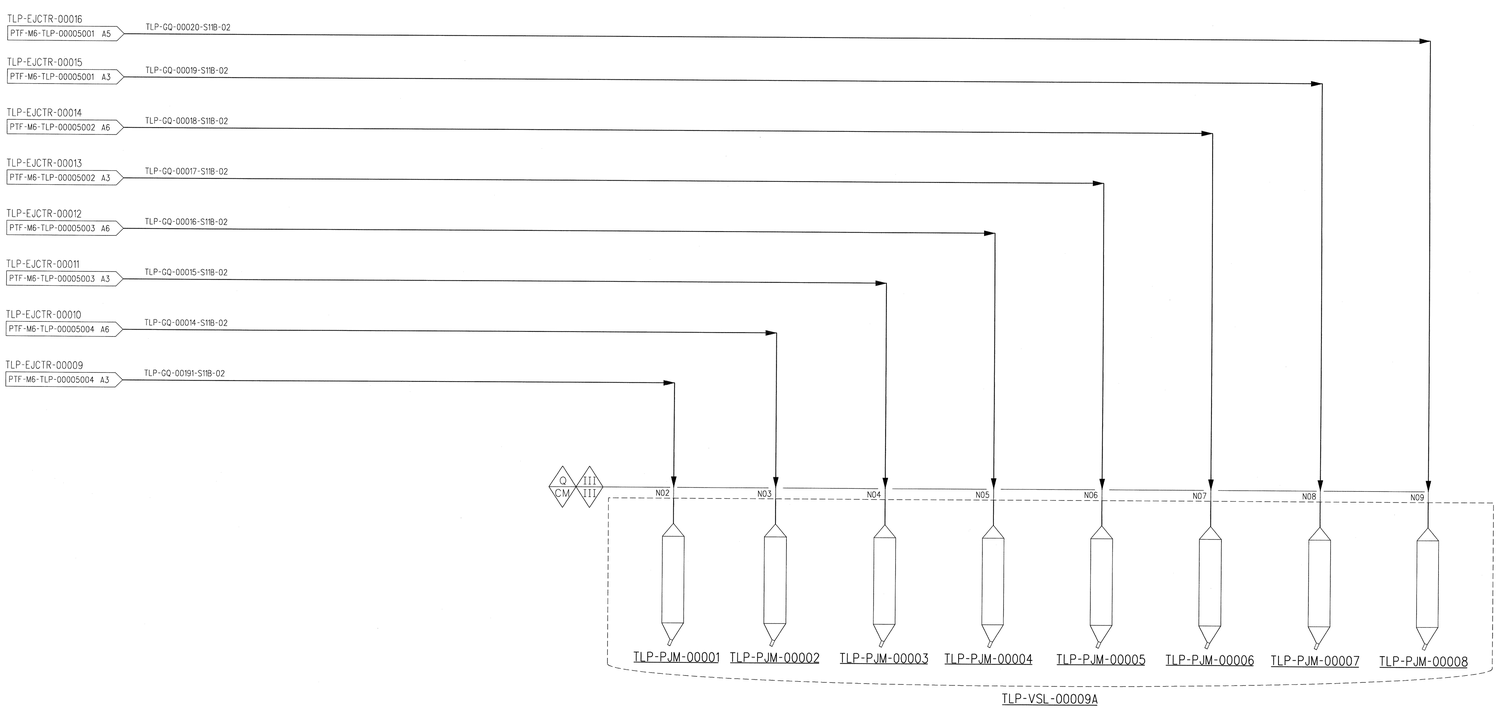
FORM E_SDN.DGN 02/2009

24590-PTF-M6-TLP-00005005





NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL Q AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING ARE LOCATED IN THE BLACK CELL AND SHALL BE SELF DRAINING, UNLESS OTHERWISE NOTED.
5. FOR PROCESS INFORMATION, REFER TO DRAWING 24590-PTF-M6-TLP-00001.
6. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-PTF-M6-TLP-00005 REV 3. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6N-10-00004, 24590-PTF-M6N-M80T-00055, -00080, AND 24590-PTF-M6PR-10-00002.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).

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Q
QUALITY DESIGNATOR

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION; SEE NOTE 6	RSW				10/7/11

REVISION HISTORY

ISSUED BY RPP-WTP PDC
INIT DATE
ISSUE STAMP

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	10	
	BY	DATE
ORIGINATOR		10/4/11
CHECKER		10/5/11
APPROVER		10/7/11
REVIEWER		10/5/11
		10-6-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-03-008 REV: 2
E&NS SCREENING REQUIRED? [X] YES [ ] NO E&NS INITIAL IF YES

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW EVAPORATION PROCESS SYSTEM
VESSEL TLP-VSL-00009A
PULSE JET MIXERS

SCALE: NONE

24590-PTF-M6-TLP-00005005 REV 0

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

'E' SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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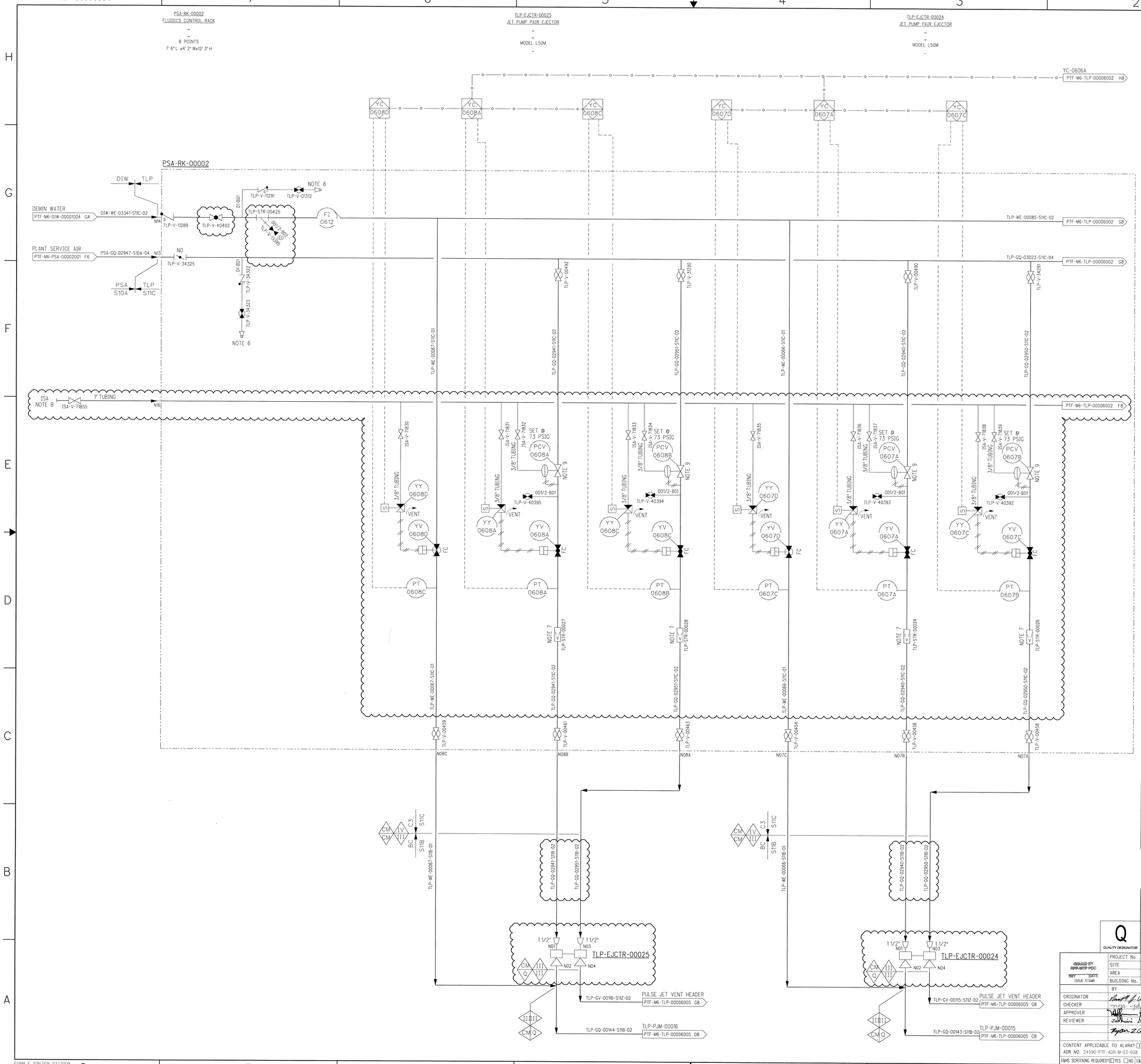
FORM E_SDN.DGN 02/2009



NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING, IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, EXCEPT BLACK CELL LINES WHICH ARE SELF DRAINING, UNLESS OTHERWISE NOTED.
5. FOR PROCESS INFORMATION, REFER TO DRAWING 24590-PTF-M6-TLP-00001.
6. CONNECTION PROVIDED FOR REAGENTS, PLANT WASH AND SERVICE AIR.
7. STRAINER IS PERMANENTLY INSTALLED.
8. ALL TUBING OUTSIDE THE RACK TO BE FIELD RUN. TUBING ROUTING, SPECIFICATION OF ADDITIONAL IN-TUBING DEVICES, AND TAGGING OF IN-TUBING DEVICES WITHIN THE RACK TO BE DONE IN ACCORDANCE WITH C&I INSTALLATION DETAILS AND DESIGN GUIDE 24590-WTP-GPG-ENG-0142.
9. RECOMMENDED INSTALLATION OF THE PCV IS TO CONNECT THE CONTROL LINE TO A STRAIGHT PIPE RUN OF PIPE 3 TO 5 FEET DOWNSTREAM OF THE PCV AND TO HAVE 3 FEET OF STRAIGHT PIPE RUN ON BOTH SIDES OF THE VALVE.
10. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-PTF-M6-TLP-00006 REV 3. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6LN-M80T-00033, 24590-PTF-M6LN-TLP-00005, 24590-PTF-M6N-10-00007, 24590-PTF-M6N-M80T-00080, AND -00132.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).

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DRAWING INDEX

DWG NO	TITLE
24590-PTF-M6-TLP-00006001	TLP SYSTEM UTILITY RACK PSA-RK-00002
24590-PTF-M6-TLP-00006002	TLP SYSTEM UTILITY RACK PSA-RK-00002
24590-PTF-M6-TLP-00006003	TLP SYSTEM UTILITY RACK PSA-RK-00002
24590-PTF-M6-TLP-00006004	TLP SYSTEM UTILITY RACK PSA-RK-00002
24590-PTF-M6-TLP-00006005	TLP SYSTEM VESSEL TLP-VSL-00009B PJM'S

REVISION HISTORY

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 10	RPW	MTF	JD/RW	RW	9/23/11

QUALITY DESIGNATOR: Q

ISSUED BY RPP-WTP PDC

	BY	DATE
ORIGINATOR		9/23/11
CHECKER		9/23/11
APPROVER		9/23/11
REVIEWER		9/23/11
		9-23-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO

ADR NO. 24590-PTF-ADR-M-03-008 REV: 2

EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	10

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF TREATED LAW EVAPORATION SYSTEM UTILITY RACK PSA-RK-00002

SCALE: NONE

24590-PTF-M6-TLP-00006001

REV 0

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

"E" SIZE - 44x34

COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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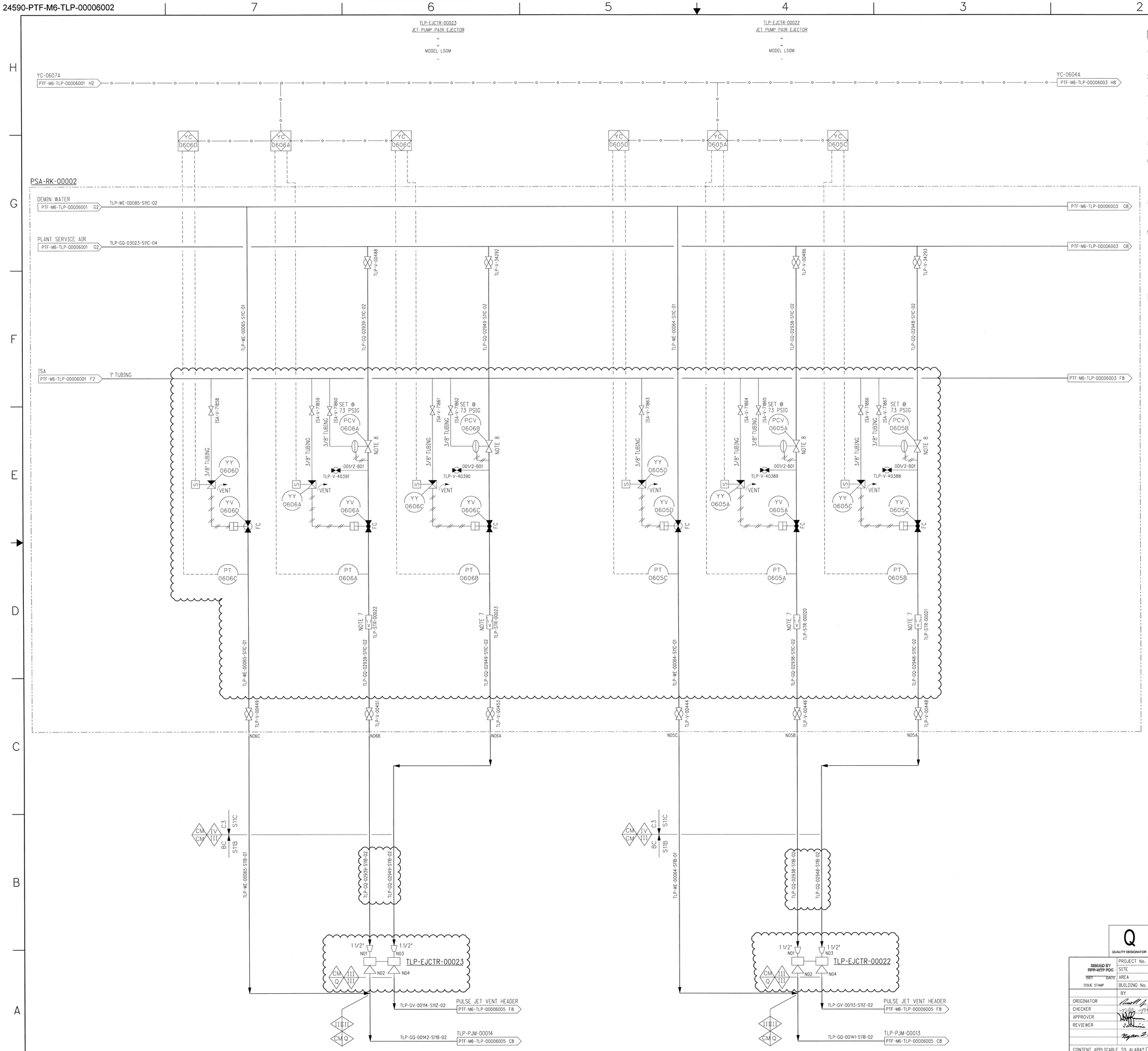
FORM E_SDN.DGN 02/2009

24590-PTF-M6-TLP-00006002



NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING, IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV, UNLESS OTHERWISE NOTED
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, EXCEPT BLACK CELL LINES WHICH ARE SELF-DRAINING, UNLESS OTHERWISE NOTED.
5. FOR PROCESS INFORMATION, REFER TO DRAWING 24590-PTF-M6-TLP-00001.
6. TUBING ROUTING, SPECIFICATION OF ADDITIONAL IN-TUBING DEVICES, AND TAGGING OF IN-TUBING DEVICES WITHIN THE RACK TO BE DONE IN ACCORDANCE WITH C&I INSTALLATION DETAILS AND DESIGN GUIDE 24590-WTP-GPG-ENG-0142.
7. STRAINER IS PERMANENTLY INSTALLED.
8. RECOMMENDED INSTALLATION OF THE PCV IS TO CONNECT THE CONTROL LINE TO A STRAIGHT PIPE RUN OF PIPE 3 TO 5 FEET DOWNSTREAM OF THE PCV AND TO HAVE 3 FEET OF STRAIGHT PIPE RUN ON BOTH SIDES OF THE VALVE.
9. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-PTF-M6-TLP-00006 REV 3. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6LN-TLP-00005, 24590-PTF-M6N-10-00007, 24590-PTF-M6N-M80T-00080, AND -00132.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

Q
QUALITY DESIGNATOR

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 9	RJW	TJO	JDHuse	KJ	9/23/11

REVISION HISTORY

ISSUED BY RPP-WTP PDC		
INIT	DATE	
ISSUE STAMP		

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	10	

	BY	DATE
ORIGINATOR	Randall J. Wilson	9/23/11
CHECKER	TJO	9/23/11
APPROVER	JDHuse	9/23/11
REVIEWER	Johnnie Dave	9/23/11
	Ryan Z Colli	9-23-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-03-008 REV: 2
E&NS SCREENING REQUIRED? [X] YES [ ] NO E&NS INITIAL IF YES

BECHTEL
RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW EVAPORATION SYSTEM
UTILITY RACK
PSA-RK-00002

SCALE: NONE

24590-PTF-M6-00006002

REV 0

R1143093

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

"E" SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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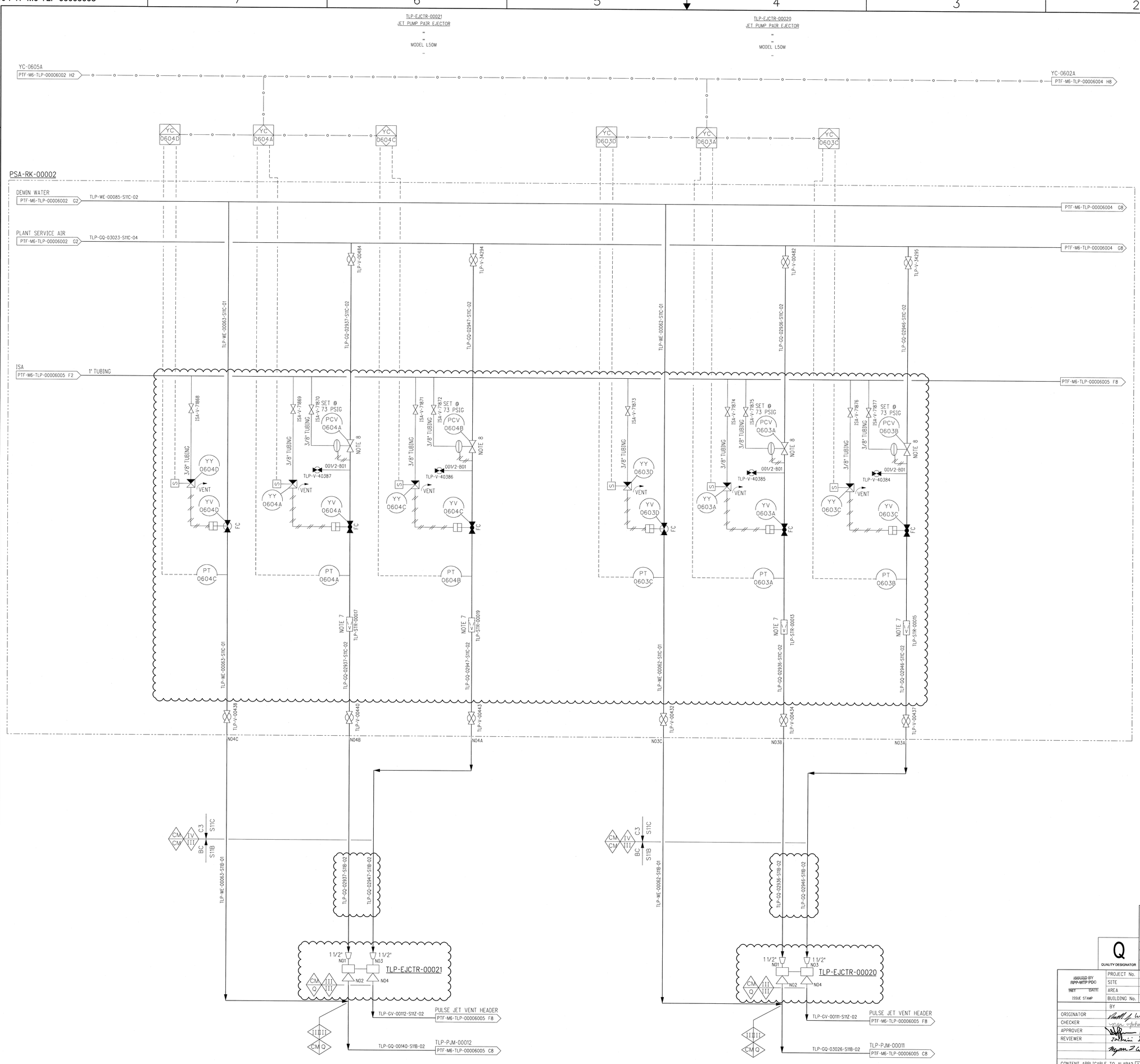
FORM E_SDN.DGN 02/2009

24590-PTF-M6-TLP-00006003



NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING, IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV, UNLESS OTHERWISE NOTED
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, EXCEPT BLACK CELL LINES WHICH ARE SELF-DRAINING, UNLESS OTHERWISE NOTED.
5. FOR PROCESS INFORMATION, REFER TO DRAWING 24590-PTF-M6-TLP-00001.
6. TUBING ROUTING, SPECIFICATION OF ADDITIONAL IN-TUBING DEVICES, AND TAGGING OF IN-TUBING DEVICES WITHIN THE RACK TO BE DONE IN ACCORDANCE WITH C&I INSTALLATION DETAILS AND DESIGN GUIDE 24590-WTP-GPG-ENG-0142.
7. STRAINER IS PERMANENTLY INSTALLED.
8. RECOMMENDED INSTALLATION OF THE PCV IS TO CONNECT THE CONTROL LINE TO A STRAIGHT PIPE RUN OF PIPE 3 TO 5 FEET DOWNSTREAM OF THE PCV AND TO HAVE 3 FEET OF STRAIGHT PIPE RUN ON BOTH SIDES OF THE VALVE.
9. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-PTF-M6-TLP-00006 REV 3. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6LN-TLP-00005, 24590-PTF-M6N-10-00007, 24590-PTF-M6N-M80T-00080, AND -00132.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

Q
QUALITY DESIGNATOR

REVISION HISTORY

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 9	RSW	MTB	DRC	WJ	9/23/11

ISSUED BY RPP-WTP PDC

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	10	

	BY	DATE
ORIGINATOR		9/23/11
CHECKER		9/23/11
APPROVER		9/23/11
REVIEWER		9/23/11
		9-23-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-03-008 REV: 2

EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES:

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW EVAPORATION SYSTEM
UTILITY RACK
PSA-RK-00002

SCALE: NONE

24590-PTF-M6-TLP-00006003

REV 0

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

'E' SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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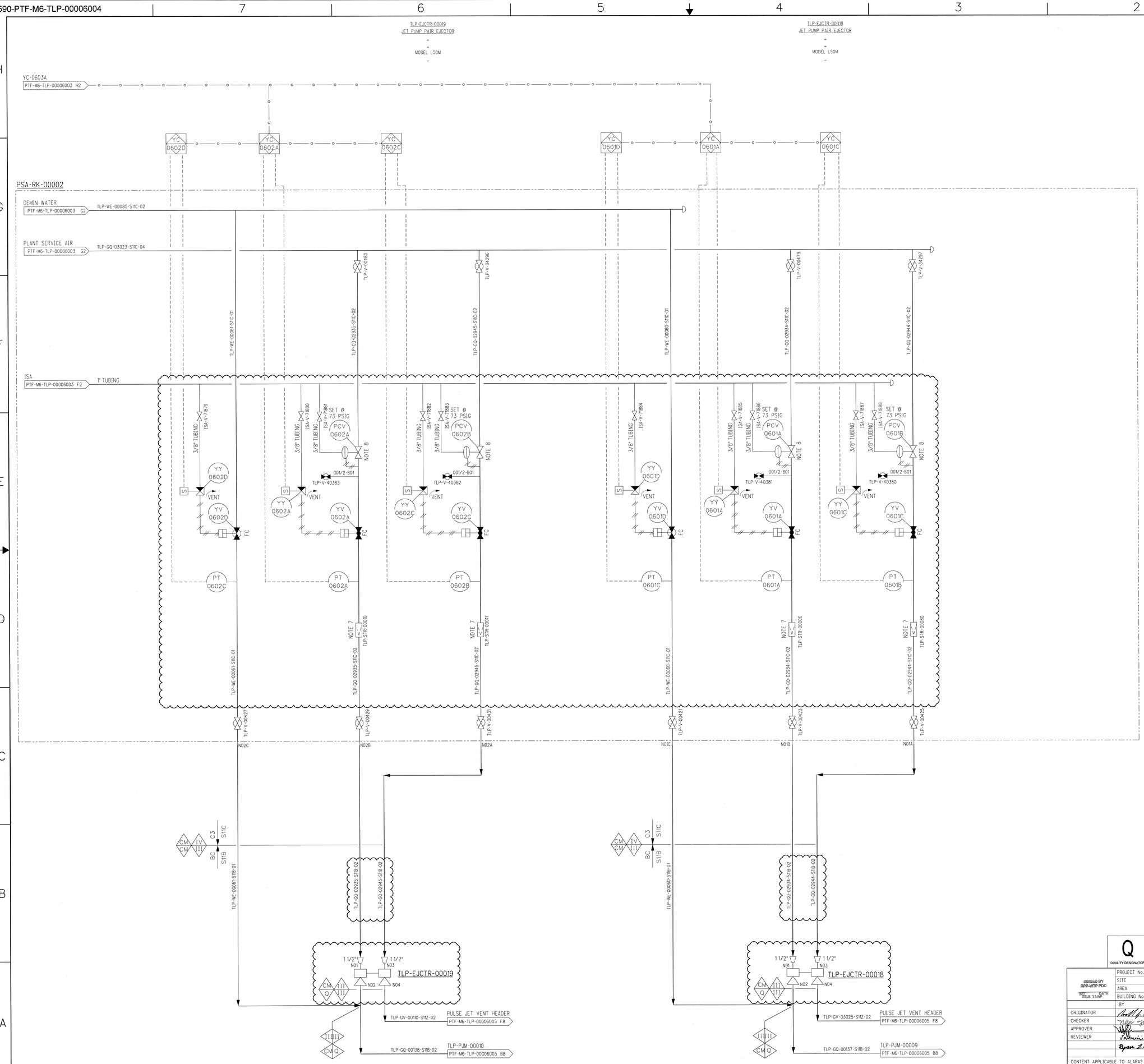
PLOTTED BY: ewebb

FORM E_SDN.DGN 02/2009



NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING, IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, EXCEPT BLACK CELL LINES WHICH ARE SELF-DRAINING, UNLESS OTHERWISE NOTED.
5. FOR PROCESS INFORMATION, REFER TO DRAWING 24590-PTF-M6-TLP-0001.
6. TUBING ROUTING, SPECIFICATION OF ADDITIONAL IN-TUBING DEVICES, AND TAGGING OF IN-TUBING DEVICES WITHIN THE RACK TO BE DONE IN ACCORDANCE WITH C&I INSTALLATION DETAILS AND DESIGN GUIDE 24590-WTP-GPG-ENG-0142.
7. STRAINER IS PERMANENTLY INSTALLED.
8. RECOMMENDED INSTALLATION OF THE PCV IS TO CONNECT THE CONTROL LINE TO A STRAIGHT PIPE RUN OF PIPE 3 TO 5 FEET DOWNSTREAM OF THE PCV AND TO HAVE 3 FEET OF STRAIGHT PIPE RUN ON BOTH SIDES OF THE VALVE.
9. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-PTF-M6-TLP-00006 REV 3. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6LN-TLP-00005, 24590-PTF-M6N-10-0007, 24590-PTF-M6N-M80T-00080, AND -00132.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, STSTEM DESCRIPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

Q
QUALITY DESIGNATOR

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 9	RCW	TJT	JD	JDB	9/29/11

REVISION HISTORY

ISSUED BY RPP-WTP PDC
INIT. DATE
ISSUE STAMP

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	10	

	BY	DATE
ORIGINATOR	Paul M. Wigen	9/26/11
CHECKER	Ryan Johnson	9/26/11
APPROVER	[illegible]	9/29/11
REVIEWER	Sudhir Dave	9/27/11
	Ryan Zhelli	9-27-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-03-008 REV: 2
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES: [illegible]

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

"E" SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW EVAPORATION PROCESS SYSTEM UTILITY RACK PSA-RK-00002

SCALE: NONE

24590-PTF-M6-TLP-00006004

REV 0

R1142036

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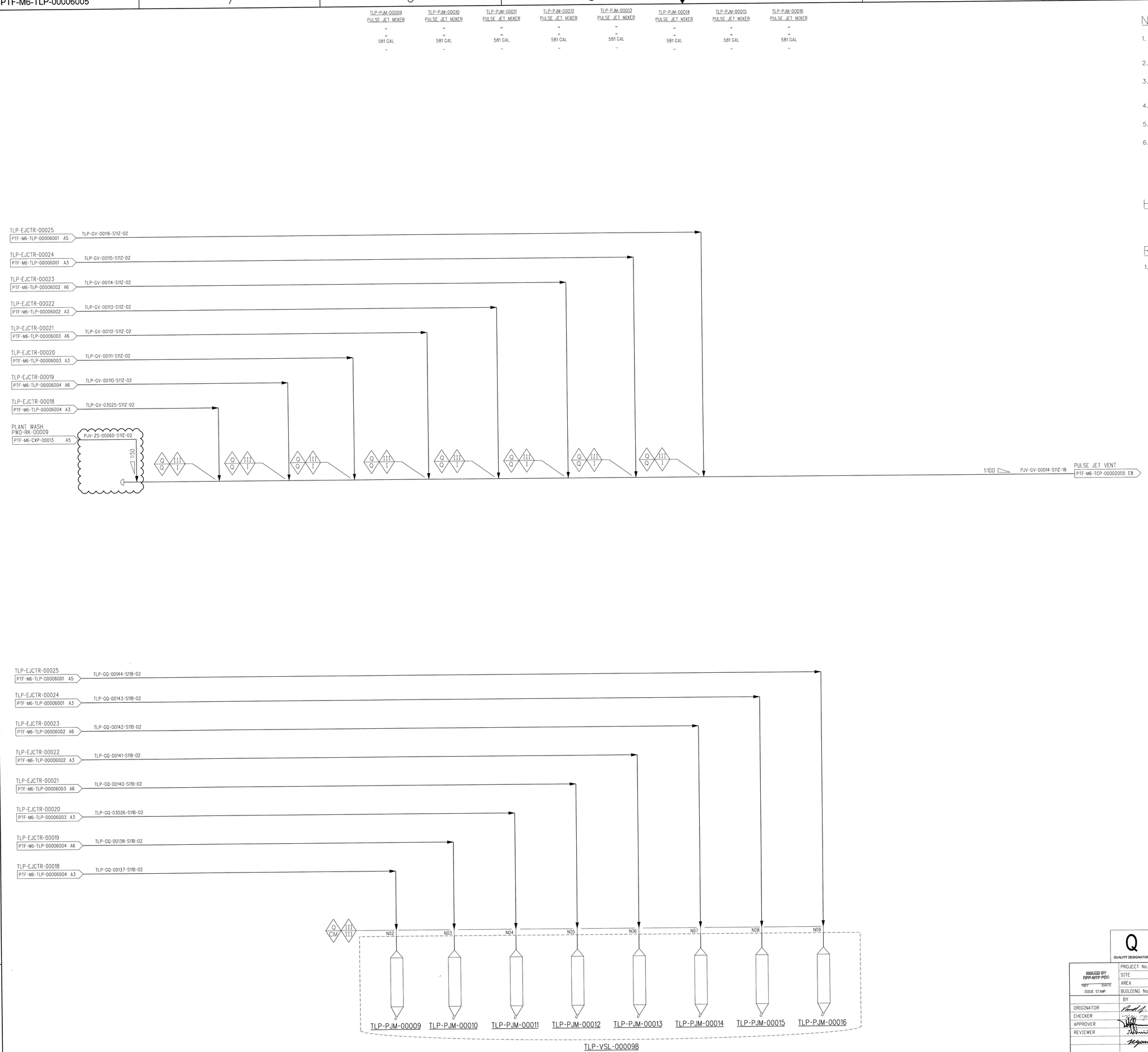
FORM E_SDN.DGN 02/2009

24590-PTF-M6-TLP-00006005



NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL Q AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE SELF DRAINING, UNLESS OTHERWISE NOTED.
5. FOR PROCESS INFORMATION, REFER TO DRAWING 24590-PTF-M6-TLP-00001.
6. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-PTF-M6-TLP-00006 REV 3. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6N-10-00004, 24590-PTF-M6N-M80T-00055, -00080, 00097, AND 24590-PTF-M6PR-10-00002.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-TLP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW EVAPORATION PROCESS (TLP).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

Q
QUALITY DESIGNATOR

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 6	RSW		JD/RC		9/23/11

REVISION HISTORY

ISSUED BY RPP-WTP PDC
REV DATE
ISSUE STAMP

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	10	
	BY	DATE
ORIGINATOR		9/23/11
CHECKER		9/23/11
APPROVER		9/23/11
REVIEWER		9/23/11
		9-23-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-03-008 REV: 2
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES: N/A

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW EVAPORATION PROCESS SYSTEM
VESSEL TLP-VSL-00009B
PULSE JET MIXERS

SCALE: NONE

24590-PTF-M6-TLP-00006005

REV 0

E SIZE - 44x34
COMPUTER GENERATED - MANUAL
DESIGN CHANGES NOT PERMITTED

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

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FORM E_SDN.DGN 02/2009

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
Process System TCP-VSL-00001 (Treated LAW Concentrate Storage Vessel)		-M5-V17T-00006, Rev 1 -M6-TCP-00001001, Rev 0 -M6-TCP-00001002, Rev 0 -M6-TCP-00002001, Rev 1 -M6-TCP-00002002, Rev 1 -M6-TCP-00002003, Rev 1 -M6-TCP-00002004, Rev 1 -M6-TCP-00002005, Rev 1 -MV-TCP-P0002, Rev 1 -MVD-TCP-P0002, Rev 2 -N1D-TCP-P0001, Rev 2 -P1-P01T-00001, Rev 7 **24590-WTP** -3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev 4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3	and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	
Treated LAW Evaporation Process System TLP-VSL-00002 (Treated LAW Evaporator Condensate Vessel) TLP-VSL-00009A (LAW SBS Condensate Receipt Vessel) TLP-VSL-00009B (LAW SBS Condensate Receipt Vessel)	TLP	**24590-PTF** -3PS-MEVV-T0001, Rev 3 -M5-V17T-00005, Rev 2 -M6-TLP-00001, Rev 3 ~~-M6-TLP-00002, Rev 3~~ -M6-TLP-00002001, Rev. 0 -M6-TLP-00002002, Rev. 0 -M6-TLP-00002003, Rev. 0 -M6-TLP-00002004, Rev. 0 ~~-M6-TLP-00003, Rev 3~~ -M6-TLP-00003001, Rev. 0 -M6-TLP-00003002, Rev. 0	Section 4.1.2.11; Tables 4-2 and 4-6; and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	TLP-VSL-00002 = 2,227 TLP-VSL-00009A = 130,010 TLP-VSL-00009B = 130,010

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
		-M6-TLP-00003003, Rev. 0 -M6-TLP-00003004, Rev. 0 -M6-TLP-00005001, Rev. 0 -M6-TLP-00005002, Rev. 0 -M6-TLP-00005003, Rev. 0 -M6-TLP-00005004, Rev. 0 -M6-TLP-00005005, Rev. 0 -M6-TLP-00006001, Rev. 0 -M6-TLP-00006002, Rev. 0 -M6-TLP-00006003, Rev. 0 -M6-TLP-00006004, Rev. 0 -M6-TLP-00006005, Rev. 0 -MVD-TLP-P0001, Rev 2 -MVD-TLP-P0002, Rev 2 -MVD-TLP-00004, Rev 1 -MV-TLP-P0001, Rev 1 -MV-TLP-P0002, Rev 1 -N1D-TLP-P0001, Rev 2 -N1D-TLP-P0006, Rev 1 -P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7 **24590-WTP** -3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev 4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3		
Spent Resin and Dewatering Process System RDP-VSL-00002A (Spent Resin Slurry	RDP	**24590-PTF** -3PS-MWD0-TP003, Rev 1 -M5-V17T-00020, Rev 2 -M6-RDP-00001, Rev 3	Section 4.1.2.13; Tables 4-2 and 4-6; and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	RDP-VSL-00002A = 15,230 RDP-VSL-00002B = 15,230

Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems

Miscellaneous Unit System Description[a]	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
Cesium Nitric Acid Recovery Process System (Cont.) CNP-HX-00002 (Cesium Evaporator Primary Condenser) CNP-HX-00003 (Cesium Evaporator Inter-Condenser) CNP-HX-00004 (Cesium Evaporator After-Condenser)	CNP	**24590-PTF** -M5-V17T-00014, Rev 2 -M6-CNP-00001, Rev 2 -M6-CNP-00002, Rev 2 -M6-CNP-00008001, Rev 0 -M6-CNP-00010, Rev 2 -MED-CNP-P0003, Rev 0 -MED-CNP-P0004, Rev 0 -MED-CNP-P0005, Rev 0 -MED-CNP-P0010, Rev 0 -N1D-CNP-P0002, Rev 1 -N1D-CNP-P0003, Rev 1 -N1D-CNP-P0012, Rev 1 -P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7 -P1-P01T-00003, Rev 4 -P1-P01T-00004, Rev 6 -3PS-MEVV- T0002, Rev 4	Section 4.1.2.6.; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	N/A N/A N/A
Treated LAW Evaporation Process System TLP-SEP-00001 (Treated LAW Evaporator Separator Vessel)	TLP	**24590-PTF** -3PS-MEVV- T0001, Rev 2 -M5-V17T-00005, Rev 2 -M6-TLP-00001, Rev 3 ~~-M6-TLP-00002, Rev 3~~ -M6-TLP-00002001, Rev. 0 -M6-TLP-00002002, Rev. 0 -M6-TLP-00002003, Rev. 0	Section 4.1.2.11; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	TLP-SEP-00001= 13,359

Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems

Miscellaneous Unit System Description[a]	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
		-M6-TLP-00002004, Rev. 0 ~~-M6-TLP-00003, Rev 3~~ -M6-TLP-00003001, Rev. 0 -M6-TLP-00003002, Rev. 0 -M6-TLP-00003003, Rev. 0 -M6-TLP-00003004, Rev. 0 -M6-TLP-00005001, Rev. 0 -M6-TLP-00005002, Rev. 0 -M6-TLP-00005003, Rev. 0 -M6-TLP-00005004, Rev. 0 -M6-TLP-00005005, Rev. 0 -M6-TLP-00006001, Rev. 0 -M6-TLP-00006002, Rev. 0 -M6-TLP-00006003, Rev. 0 -M6-TLP-00006004, Rev. 0 -M6-TLP-00006005, Rev. 0 -MVD-TLP-P0001, Rev 2 -MVD-TLP-P0002, Rev 2 -MVD-TLP-P0004, Rev 1 -MVD-TLP-P0005, Rev 2 -MV-TLP-P0001, Rev 1 -MV-TLP-P0002, Rev 1 -N1D-TLP-P0001, Rev 2 -N1D-TLP-P0005, Rev 3 -N1D-TLP-P0006, Rev 1 -P1-P01T-00001, Rev 7		

Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems

Miscellaneous Unit System Description[a]	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
		-P1-P01T-P0002, Rev 7 -P1-P01T-00003, Rev 4		
Treated LAW Evaporation Process System (Cont.) TLP-COND-00001 (Treated LAW Primary Condenser) TLP-COND-00002 (Treated LAW Inter-condenser) TLP-COND-00003 (Treated LAW After-condenser)	TLP	**24590-PTF** -3PS-MEVV- T0001, Rev 2 -M5-V17T-00005, Rev 2 -M6-TLP-00001, Rev 3 ~~-M6-TLP-00002, Rev 3~~ -M6-TLP-00002001, Rev. 0 -M6-TLP-00002002, Rev. 0 -M6-TLP-00002003, Rev. 0 -M6-TLP-00002004, Rev. 0 ~~-M6-TLP-00003, Rev 3~~ -M6-TLP-00003001, Rev. 0 -M6-TLP-00003002, Rev. 0 -M6-TLP-00003003, Rev. 0 -M6-TLP-00003004, Rev. 0 -M6-TLP-00005001, Rev. 0 -M6-TLP-00005002, Rev. 0 -M6-TLP-00005003, Rev. 0 -M6-TLP-00005004, Rev. 0 -M6-TLP-00005005, Rev. 0 -M6-TLP-00006001, Rev. 0	Section 4.1.2.11; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	N/A

Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems

Miscellaneous Unit System Description[a]	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	Maximum Capacity (gallons)
		-M6-TLP-00006002, Rev. 0 -M6-TLP-00006003, Rev. 0 -M6-TLP-00006004, Rev. 0 -M6-TLP-00006005, Rev. 0 -MED-TLP-P0001, Rev 0 -MED-TLP-00002, Rev 4 -MED-TLP-00003, Rev 4 -MV-TLP-P0001, Rev 1 -MV-TLP-P0002, Rev 1 -N1D-TLP-P0002, Rev 0 -N1D-TLP-P0003, Rev 4 -P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7 -P1-P01T-00003, Rev 4		
Treated LAW Evaporation Process System (Cont.) TLP-RBLR-00001 (Treated LAW Evaporator Reboiler)	TLP	**24590-PTF** -3PS-MEVV- T0001, Rev 2 -M5-V17T-00005, Rev 5 -MV-TLP-P0001, Rev 1 -MV-TLP-P0002, Rev 1 -N1D-TLP-P0011, Rev 1 -P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7 -P1-P01T-00003, Rev 4	Section 4.1.2.11; Table C-8; and Figures C1-1, C1-2 and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	N/A

Quarter Ending 09/30/2012 24590-PTF-PCN-ENV-12-006

Hanford Facility RCRA Permit Modification Notification Form
Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

Index

Page 2 of 3: Hanford Facility RCRA Permit, Part III, Operating Unit 10, Waste Treatment and Immobilization Plant
Replace Piping and Instrumentation Diagrams (P&ID) for the PTF Waste Feed Receipt Process System (FRP) and Treated LAW Concentrate Storage Process System (TCP) in Appendix 8.2 of the Dangerous Waste Permit (DWP).

Submitted by Co-Operator:

D. M. Busche — Date 7/2/12

Reviewed by ORP Program Office:

D. L. Noyes — Date 8/7/12

Quarter Ending 09/30/2012 24590-PTF-PCN-ENV-12-006

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **Waste Treatment and Immobilization Plant**	Permit Part: **Part III, Operating Unit 10**

Description of Modification:

The purpose of this Class 1 prime modification is to update the P&IDs for the PTF Treated LAW Concentrate Storage Process System and Waste Feed Receipt Process System in Appendix 8.2 of the DWP.

The following P&IDs are being submitted to replace the documents currently in Appendix 8.2:

Appendix 8.2			
Replace	24590-PTF-M6-FRP-00009 Rev. 3*	With	24590-PTF-M6-FRP-00009001 Rev. 0
	24590-PTF-M6-FRP-00010 Rev. 3**		24590-PTF-M6-FRP-00010001 Rev. 0
	24590-PTF-M6-TCP-00001001 Rev. 0		24590-PTF-M6-TCP-00001001 Rev. 1
	24590-PTF-M6-TCP-00001002 Rev. 0		24590-PTF-M6-TCP-00001002 Rev. 1
			24590-PTF-M6-TCP-00001003 Rev. 0

*NOTE: Revision 4 was issued but not incorporated into the DWP. The following change documents (all now inactive) have been issued against the drawings: 24590-PTF-M6N-FRP-00058, -00073, -00083, and portions of 24590-PTF-M6LN-M80T-00008, 24590-PTF-M6N-10-00004, 24590-PTF-M6N-M80T-00050, -00059, and -00068. All of the change documents have been submitted to ORP and Ecology (Milk Run).

**NOTE: Revision 4 was issued but not incorporated into the DWP. The following change documents (all now inactive) have been issued against the drawings: 24590-PTF-M6N-FRP-00058, -00073, 24590-PTF-M6N-M80T-00059, -00068, and 24590-PTF-M6LN-M80T-00008. All of the change documents have been submitted to ORP and Ecology (Milk Run).

This modification requests Ecology approval and incorporation into the permit the specific changes to the above DWP documents. Revisions are the result of ongoing design changes and quality/seismic flag changes. The following identifies the significant changes that have been incorporated:

FRP SYSTEM

- Pipe size changes for pipe going to PVP header
- Deleted flush solution lines PWD-ZS-67036-S11C-02 and PWD-JS-00068-S11C-02 going to wash rack
- Moved isolation valves, added flush lines and check valves, deleted drain
- Wash Rack Seismic/Quality, notes and standardization changes
- Notes, holds, and references have been revised

TCP SYSTEM

- Removed TCP-BULGE-00004 and added process enclosure
- General instrumentation revisions
- Revised the maximum allowable pressure drop for the in-bleed HEPA filter equipment
- Drawing 24590-PTF-M6-TCP-00001003 was generated from 24590-PTF-M6-TCP-00001002 and includes information from replacing Bulge-00004 with C3/C5 process equipment enclosure for contamination control
- Notes, holds, and references have been revised

Quarter Ending 09/30/2012 24590-PTF-PCN-ENV-12-006

This modification requests Ecology approval and incorporation of the following outstanding change document(s) into the permit. Although not yet incorporated into the revised documents included in this PCN, the listed outstanding change document(s) are intended to be incorporated into the permit:

24590-PTF-M6-TCP-00001002

- 24590-PTF-M6LN-TCP-00007

In accordance with Permit Condition III.10.C.2.e. this permit modification may include page changes to the Permit, attachments, and permit application supporting documentation. Necessary permit changes are attached to this PCN. Ecology is requested to approve the attached permit changes and incorporate the changes in the next revision of the WTP DWP.

See attached.

WAC 173-303-830 Modification Class:	Class 1	Class [1]1	Class 2	Class 3
Please mark the Modification Class:		X		

Enter relevant WAC 173-303-830, Appendix I Modification citation number: NA

Enter wording of WAC 173-303-830, Appendix I Modification citation:

In accordance with WAC 173-303-830(4)(d)(i), this modification notification is requested to be reviewed and approved as a Class [1]1 modification. WAC 173-303-830(4)(d)(ii)(A) states, "Class 1 modifications apply to minor changes that keep the permit current with routine changes to the facility or its operation. These changes do not substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment. In the case of Class 1 modifications, the director may require prior approval."

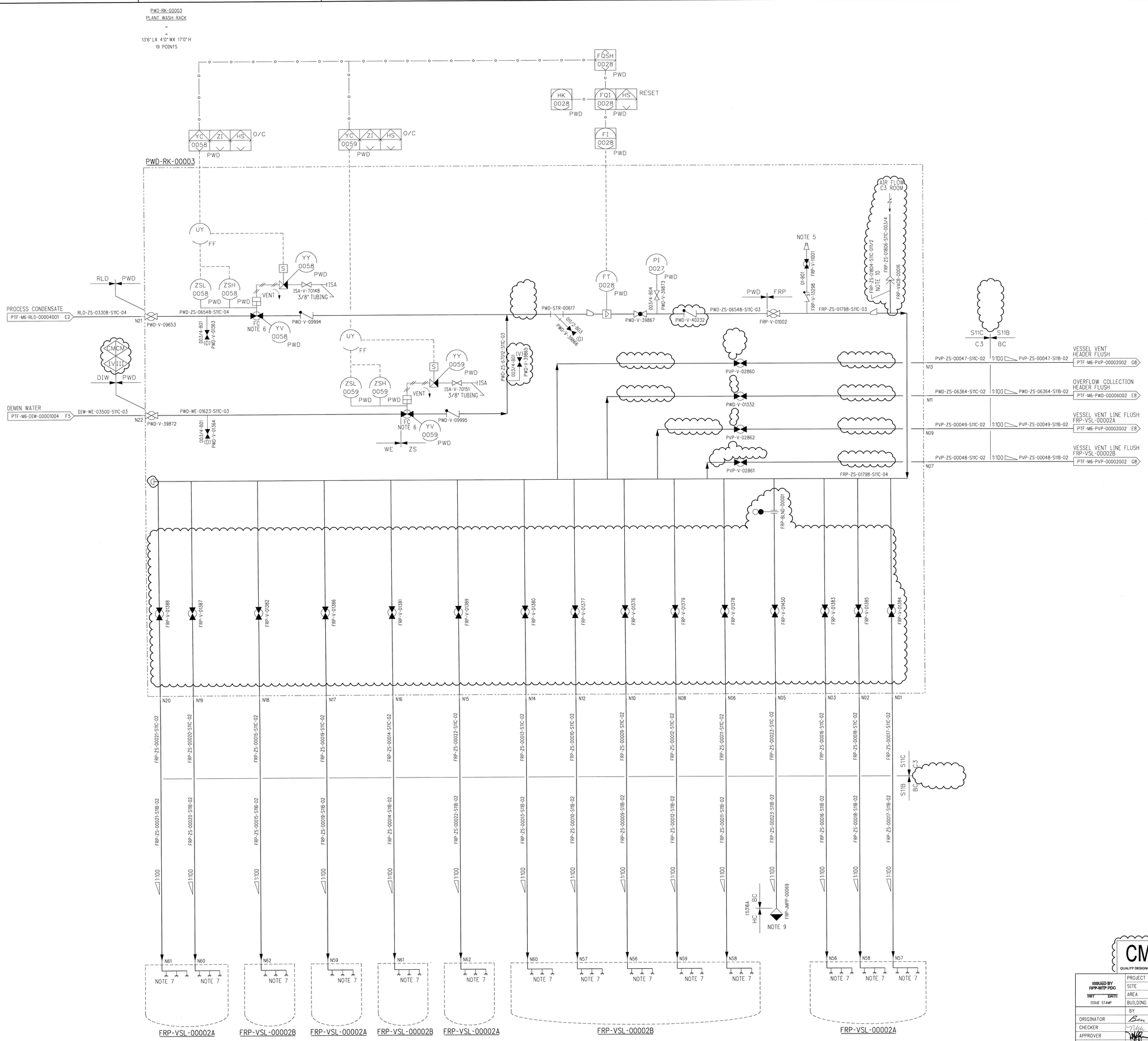
Modification Approved/Concur: ☑ Yes ☐ Denied (state reason below)

Reason for denial:

Reviewed by Ecology:

10-9-12

S. Dahl Date



NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, EXCEPT BLACK CELL LINES WHICH ARE SELF-DRAINING, UNLESS OTHERWISE NOTED.
5. CONNECTION PROVIDED FOR REAGENTS, PLANT WASH, AND SERVICE AIR.
6. VALVES INTERLOCKED TO PREVENT MULTIPLE VALVE OPERATION.
7. PIPE ROUTING LIMITED TO A MAXIMUM OF AN 11 FT. STRAIGHT VERTICAL DROP AT THE CONNECTION TO THE VESSEL.
8. BLACK CELL PIPING TO BE SUPPORTED FOR MAXIMUM WATERFALL AND FOR THE EXPECTED DYNAMIC FORCES DURING THE TRANSITION FROM A DRY PIPE TO A LIQUID-FULL PIPE.
9. HOT CELL FLUSH CONNECTION EXPECTED TO BE USED FOR CELL CLEANING AND MAINTENANCE. FLUSH LINE MAY BE USED FOR OTHER FUNCTIONS AS REQUIRED DURING PLANT OPERATION.
10. PIPE TO BE CONNECTED TO HORIZONTAL RUN OF HEADER PIPE. ROUTE AIR INLET PIPING TO SAFE LOCATION.
11. THIS DRAWING SUPERSEDES 24590-PTF-M6-FRP-00009 REV 4. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6N-10-00004, 24590-PTF-M6N-FRP-00058, -00073, -00083, 24590-PTF-M6LN-M80T-00008, 24590-PTF-M6N-M80T-00050, -00059, AND -00068.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-FRP-00001, SYSTEM DESCRIPTION FOR THE WASTE FEED RECEIPT PROCESS (FRP).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

DRAWING INDEX

DWG NO	TITLE
24590-PTF-M6-FRP-00009001	FRP SYSTEM UTILITY SERVICES PWD-RK-00003

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 11	BL				11/29/11

CM QUALITY DESIGNATOR

REVISION HISTORY

ISSUED BY RFP-WTP PDO — TRF DATE — ISSUE STAMP

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	10	
	BY	DATE
ORIGINATOR	Ben	8/22/11
CHECKER		8/22/11
APPROVER		11/29/11
REVIEWER		5/26/11
		8-25-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-02-007 REV- 6
EMS SCREENING REQUIRED? [ ] YES [ ] NO EMS INITIAL IF YES

BECHTEL
RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
WASTE FEED RECEIPT PROCESS SYSTEM UTILITY SERVICES PWD-RK-00003

SCALE: NONE

24590-PTF-M6-FRP-00009001 REV 0

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

E1 SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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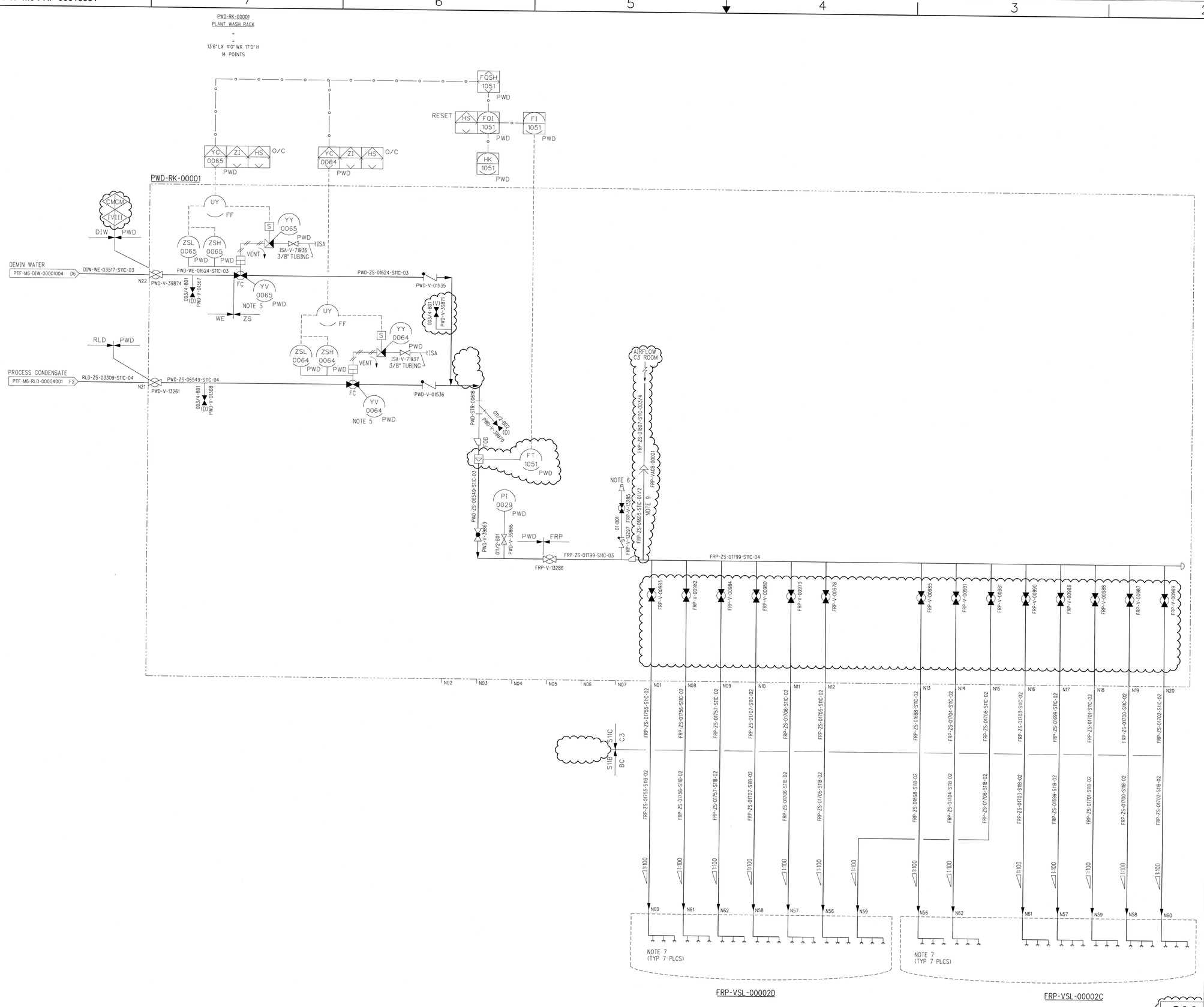
FORM E_SDN.DGN 02/2009



NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, EXCEPT BLACK CELL LINES WHICH ARE SELF DRAINING, UNLESS OTHERWISE NOTED.
5. VALVES INTERLOCKED TO PREVENT MULTIPLE VALVE OPERATION.
6. CONNECTIONS PROVIDED FOR REAGENT, PLANT WASH, AND SERVICE AIR.
7. PIPE ROUTING LIMITED TO A MAXIMUM OF AN 11 FT STRAIGHT VERTICAL DROP AT THE CONNECTION TO THE VESSEL.
8. BLACK CELL PIPING TO BE SUPPORTED FOR MAXIMUM WATERFALL AND FOR THE EXPECTED DYNAMIC FORCES DURING THE TRANSITION FROM A DRY PIPE TO A LIQUID-FULL PIPE.
9. PIPE TO BE CONNECTED TO HORIZONTAL RUN OF HEADER PIPE. ROUTE AIR INLET PIPING TO SAFE LOCATION.
10. THIS DRAWING SUPERSEDES 24590-PTF-M6-FRP-00010 REV 4. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6N-FRP-00058, -00073, 24590-PTF-M6N-M80T-00059, -00068, AND 24590-PTF-M6LN-M80T-00008.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-PTF-3YD-FRP-00001, SYSTEM DESCRIPTION FOR THE WASTE FEED RECEIPT PROCESS (FRP).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

DRAWING INDEX

DWG NO	TITLE
24590-PTF-M6-FRP-00010001	FRP SYSTEM UTILITY SERVICES PWD-RK-00001

REVISION HISTORY

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 10	BL				11/29/11

CM
QUALITY DESIGNATOR

ISSUED BY RPP-WTP PDO
INIT ISSUE STAMP

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	10	

	BY	DATE
ORIGINATOR		8/22/11
CHECKER		8/22/11
APPROVER		11/29/11
REVIEWER		8/24/11
		8-25-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-02-007 REV: 6
E&NS SCREENING REQUIRED? [X] YES [ ] NO E&NS INITIAL IF YES

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
WASTE FEED RECEIPT PROCESS SYSTEM UTILITY SERVICES PWD-RK-00001

SCALE: NONE

24590-PTF-M6-FRP-00010001 REV 0

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

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COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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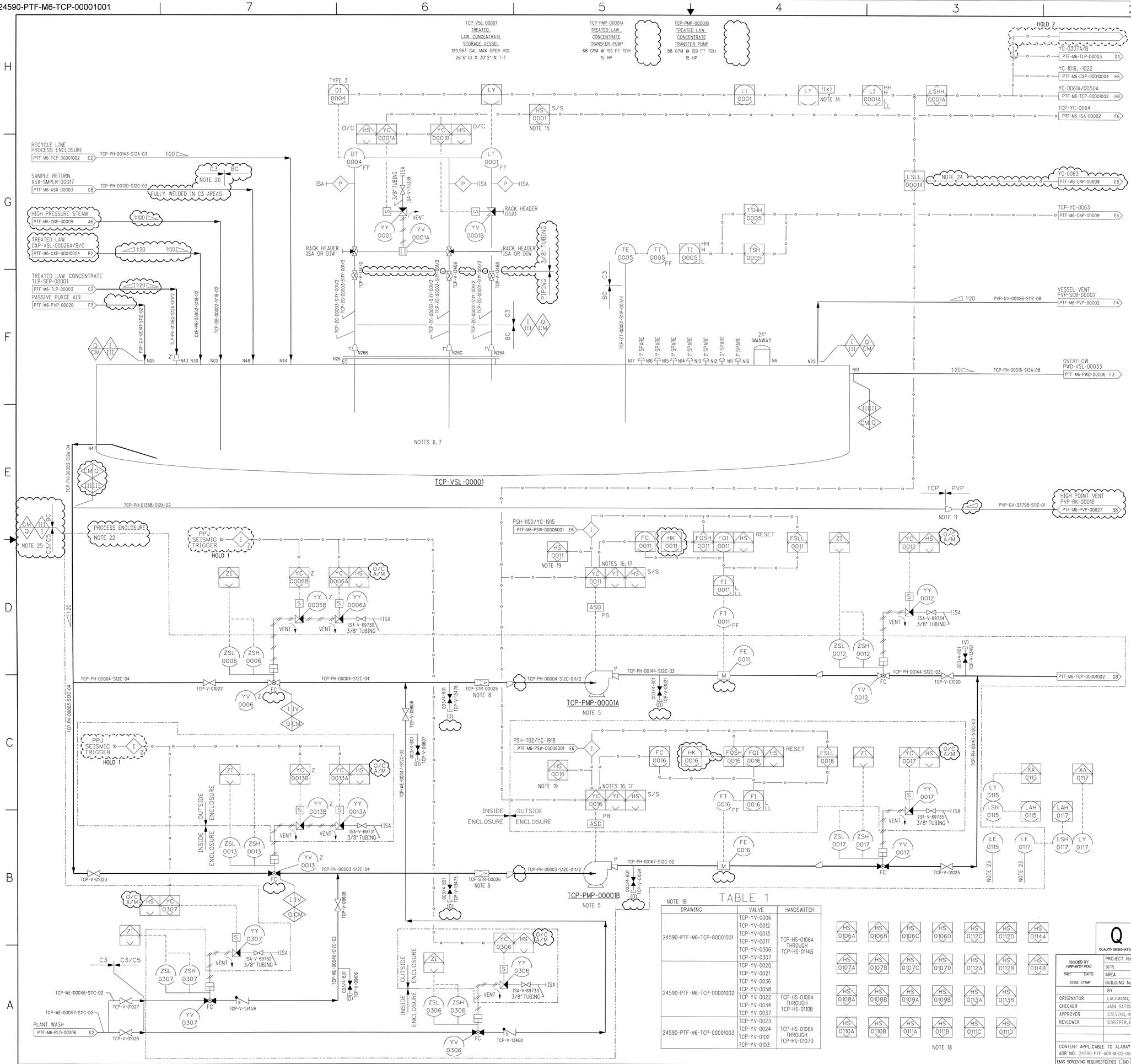

NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED. THE PRESSURE BOUNDARY FOR THE NON-SAFETY SOLENOID VALVES AND NON-SAFETY INSTRUMENT AIR SUPPLY (ISA) IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
5. FOR PUMP SEAL WATER DISTRIBUTION DRAWING, REFER TO DRAWING 24590-PTF-M6-PSW-00006001
6. FOR PULSE JET MIXER REPRESENTATION AND NOZZLES, REFER TO DRAWING 24590-PTF-M6-TCP-00002005.
7. FOR PLANT WASH REPRESENTATION AND NOZZLES, REFER TO DRAWING 24590-PTF-M6-TLP-00007.
8. PROVIDE REMOVABLE PIPING SPOOL FOR START UP STRAINER. STRAINER WILL BE REMOVED AND REPLACED BY A SPOOL PIECE PRIOR TO START UP.
9. DELETED
10. DELETED
11. MINIMUM HEIGHT OF REDUCER GREATER THAN OVERFLOW HEIGHT.
12. DELETED
13. REVISION 0: THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-M6-TCP-00001REV 4. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6N-TCP-00017, 24590-PTF-M6N-M8DT-00037, AND -00038. DELETED BACKFLOW PREVENTER TCP-BFP-00002. DIPPED LEGS FROM NOZZLES 10, 14, AND 16 HAVE BEEN REMOVED DUE TO HPAV CONCERNS.
14. FUNCTION CONVERTS TANK LEVEL IN INCHES TO GALLONS.
15. TCP-HS-0001 STARTS/STOPS BUBBLER TCP-LT-0001/TCP-DT-0004 FLUSH AND PURGE SEQUENCE.
16. PUMPS TCP-PMP-00001A AND TCP-PMP-00001B MUST HAVE A SUCTION AND DISCHARGE FLOW PATH TO OPERATE.
17. SUCTION VENT VALVE PVP-YV-2715 MUST BE CLOSED TO OPERATE PUMPS. REFER TO DRAWING 24590-PTF-M6-PVP-00027.
18. HANDSWITCHES ALIGN VALVES IN TABLE 1.
19. HANDSWITCH BYPASSES PUMP FLOW PATH PERMISSIVES.
20. PHYSICAL LAYOUT SHALL PROVIDE COMPLETE VISIBILITY OF PROCESS PIPELINES IN C3 AREAS FOR DAILY VISUAL INSPECTION.
21. FOR TCP BUBBLER RACK TCP-RK-00003 DETAILS, REFER TO DRAWING 24590-PTF-M6-ISA-00002.
22. PROCESS ENCLOSURE IS CONSIDERED SECONDARY CONTAINMENT WHICH REQUIRES DWP PAINT COATING AND LEAK DETECTION. PROCESS ENCLOSURE SHALL BE SEALED TO ENSURE PROPER VENT OPERATION.
23. CONDUCTIVITY CABLE IS PLACED INSIDE THE PROCESS ENCLOSURE ON THE FLOOR FOR LEAK DETECTION AROUND PUMPS AND UNDERNEATH PIPING AND VALVES.
24. LOW-LOW LEVEL IN TCP-VSL-00001 CLOSES STEAM VALVE YV-0063 (P&ID 24590-PTF-M6-CNP-00009) AND SHUTS DOWN TCP-PMP-00001A OR B.
25. THE QUALITY/SEISMIC BREAK APPLIES TO THE PIPING, NOT THE ENCLOSURE.
26. REVISION 1: REVISED TO INCORPORATE 24590-PTF-M6N-TCP-00020, -00022 , -00023, 24590-PTF-M6N-M8DT-00054, AND 24590-PTF-M6PR-TCP-00003. IDENTIFY BOUNDARY FOR EQUIPMENT, VALVES AND INSTRUMENTATION IN THE C3/C5 EQUIPMENT ENCLOSURE FOR CONTAMINATION CONTROL.

HOLD/OPEN ITEMS:

1. PENDING PPJ SYSTEM DESIGN.
2. PENDING PJM LOGIC DESIGN.

REFERENCES:

1, 2. DELETED

3. 24590-PTF-3YD-TCP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW-CONCENTRATE STORAGE PROCESS (TCP).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

DRAWING INDEX

DWG NO	TITLE
24590-PTF-M6-TCP-00001001	TREATED LAW CONCENTRATE STORAGE SYSTEM
24590-PTF-M6-TCP-00001002	TREATED LAW CONCENTRATE STORAGE SYSTEM
24590-PTF-M6-TCP-00001003	TREATED LAW CONCENTRATE STORAGE SYSTEM

TABLE 1

NOTE 18

DRAWING	VALVE	HANDSWITCH
24590-PTF-M6-TCP-00001001	TCP-YV-0006 TCP-YV-0012 TCP-YV-0013 TCP-YV-0017 TCP-YV-0306 TCP-YV-0307	TCP-HS-0106A THROUGH TCP-HS-0114B
24590-PTF-M6-TCP-00001002	TCP-YV-0020 TCP-YV-0021 TCP-YV-0036 TCP-YV-0058	
	TCP-YV-0022 TCP-YV-0034 TCP-YV-0037	TCP-HS-0106A THROUGH TCP-HS-0110B
24590-PTF-M6-TCP-00001003	TCP-YV-0023 TCP-YV-0024 TCP-YV-0102 TCP-YV-0103	TCP-HS-0106A THROUGH TCP-HS-0107D

HS 0106A, HS 0106B, HS 0106C, HS 0106D, HS 0112C, HS 0112D, HS 0114A
HS 0107A, HS 0107B, HS 0107C, HS 0107D, HS 0112A, HS 0112B, HS 0114B
HS 0108A, HS 0108B, HS 0109A, HS 0109B, HS 0113A, HS 0113B
HS 0110A, HS 0110B, HS 0111A, HS 0111B, HS 0111C, HS 0111D

NOTE 18

Q QUALITY DESIGNATOR

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
1	REVISED PER NOTE 26	NW	MAX	VLR	RC	9/23/11
0	ISSUED FOR CONSTRUCTION SEE NOTE 13	SL	SJ	ES/CL	RS/JM	4/14/08

REVISION HISTORY

ISSUED BY DIPP-WTP POC / TMT / DATE / ISSUE STAMP

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	10	

	BY	DATE
ORIGINATOR	LACHMANN, SARAH	4-3-08
CHECKER	JAIN, SATISH	4-3-08
APPROVER	STEVENS, ROBERT	4-14-08
REVIEWER	STRIEPER, EGBERT	4/5/08

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-02-006 REV: 5
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREQ-002

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW CONCENTRATE STORAGE PROCESS SYSTEM TCP-VSL-00001

SCALE: NONE

24590-PTF-M6-TCP-00001001

REV 1

E SIZE 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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9/19/2011 7:32:07 AM

FORM E_SDN.DGN 02/2009

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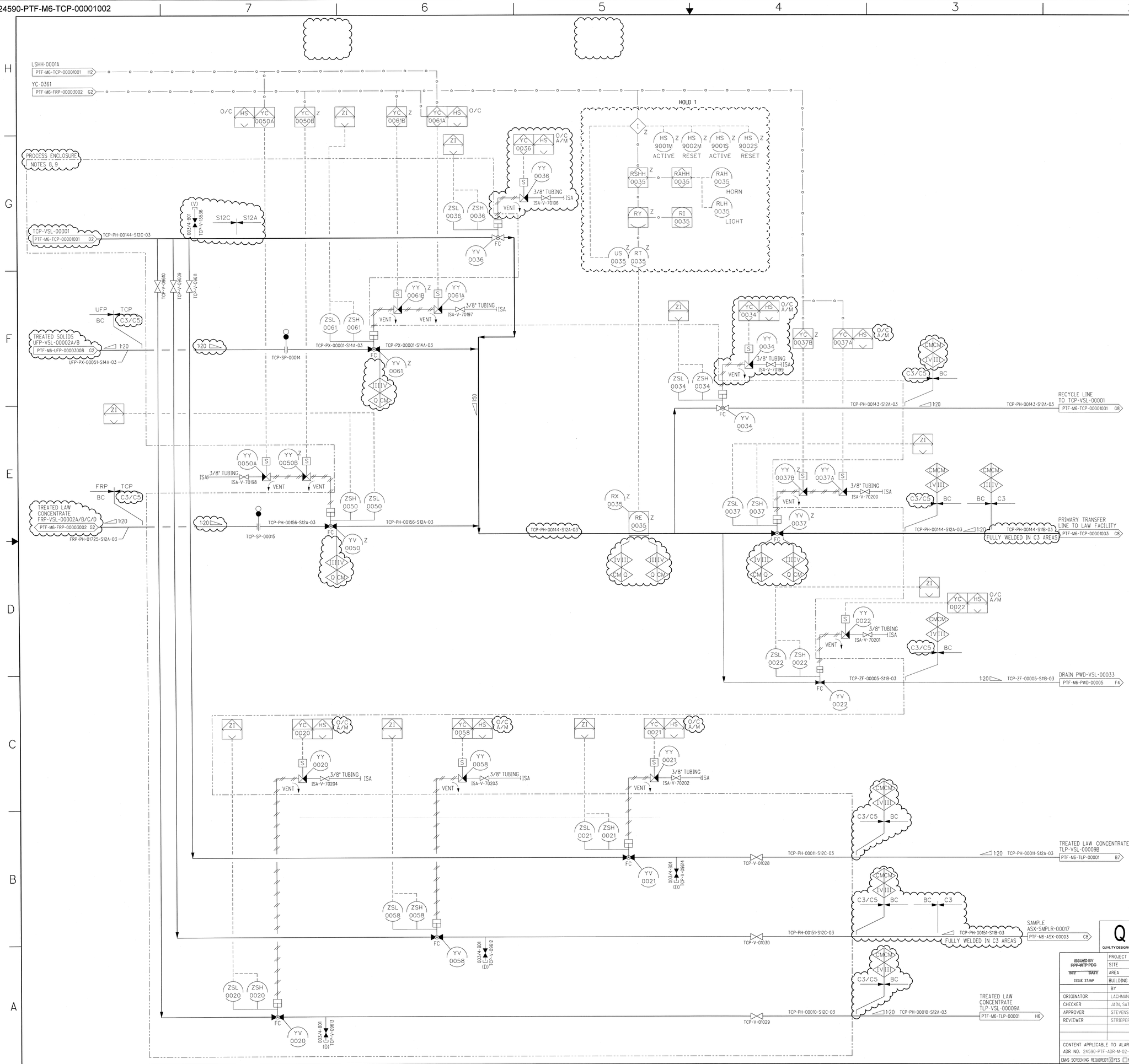


NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-II, UNLESS OTHERWISE NOTED. VALVES AND ACTUATORS FOR YV-0037, YV-0050, YV-0061 AND GAMMA MONITOR RE-0035 ARE QUALITY LEVEL Q AND SEISMIC CATEGORY SC-III. THE PRESSURE BOUNDARY FOR THE NON-SAFETY SOLENOID VALVES AND NON-SAFETY INSTRUMENT AIR SUPPLY (ISA) IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
5. DELETED
6. REVISION 0: THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-PTF-M6-TCP-00001 REV 4. THIS DRAWING INCLUDES INFORMATION FROM 24590-PTF-M6N-M80T-00037, -00038, -00045, 24590-PTF-M6N-TCP-00018, AND 24590-WTP-FC-P-06-0216. ADDED VENT LINES PVP-PH-00008/00009-S12C-01 WITH CONTROL VALVES.
7. VALVES ON THIS DRAWING CAN BE ALIGNED BY HANDSWITCHES LOCATED ON 24590-PTF-M6-TCP-00001001, TABLE 1.
8. PHYSICAL LAYOUT SHALL PROVIDE COMPLETE VISIBILITY OF PROCESS PIPELINES IN C3 AREAS FOR DAILY VISUAL INSPECTION.
9. PROCESS ENCLOSURE IS CONSIDERED SECONDARY CONTAINMENT WHICH REQUIRES DWP PAINT COATING AND LEAK DETECTION. PROCESS ENCLOSURE SHALL BE SEALED TO ENSURE PROPER VENT OPERATION.
10. REVISION 1: REVISED TO INCORPORATE 24590-PTF-M6N-TCP-00020, -00022, -00024, 24590-PTF-M6LN-TCP-00001, -00003, 24590-PTF-M6LN-M80T-00002, -00035, 24590-PTF-M6PR-TCP-00001, -00002, AND -00004. SPARE TRANFER LINE AND LINES FOR FUTURE SUPPLEMENTAL LAW FACILITY, VALVES TCP-YV-0102, -0024, AND -0103, -0023 WERE MOVED TO DRAWING 24590-PTF-M6-TCP-00001003. BALANCE OF THE VALVES WERE LOCATED INSIDE THE NEW C3/C5 PROCESS EQUIPMENT ENCLOSURE FOR CONTAMINATION CONTROL REPLACING TCP-BULGE-00004

HOLD/OPEN ITEMS:

1. PENDING PPJ SYSTEM DESIGN.

REFERENCES:

1,2. DELETED

3. 24590-PTF-3YD-TCP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW CONCENTRATE STORAGE PROCESS (TCP).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
1	REVISED PER NOTE 10	NJD	AM	VLG	DRC	NJD 9/23/11
0	ISSUED FOR CONSTRUCTION SEE NOTE 6	SL	SJ	ES/CL	RS/JM	4-14-08

REVISION HISTORY

Q
QUALITY DESIGNATOR

ISSUED BY RPP-WTP PDC
TRNT DATE
ISSUE STAMP

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	10	

	BY	DATE
ORIGINATOR	LACHMANN, SARAH	4-3-08
CHECKER	JAIN, SATISH	4-3-08
APPROVER	STEVENS, ROBERT	4-14-08
REVIEWER	STRIEPER, EGBERT	4/5/08

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-PTF-ADR-M-02-006 REV: 5
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES [ ]

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF
TREATED LAW CONCENTRATE STORAGE SYSTEM TCP-VSL-00001

SCALE: NONE

24590-PTF-M6-TCP-00001002

REV 1

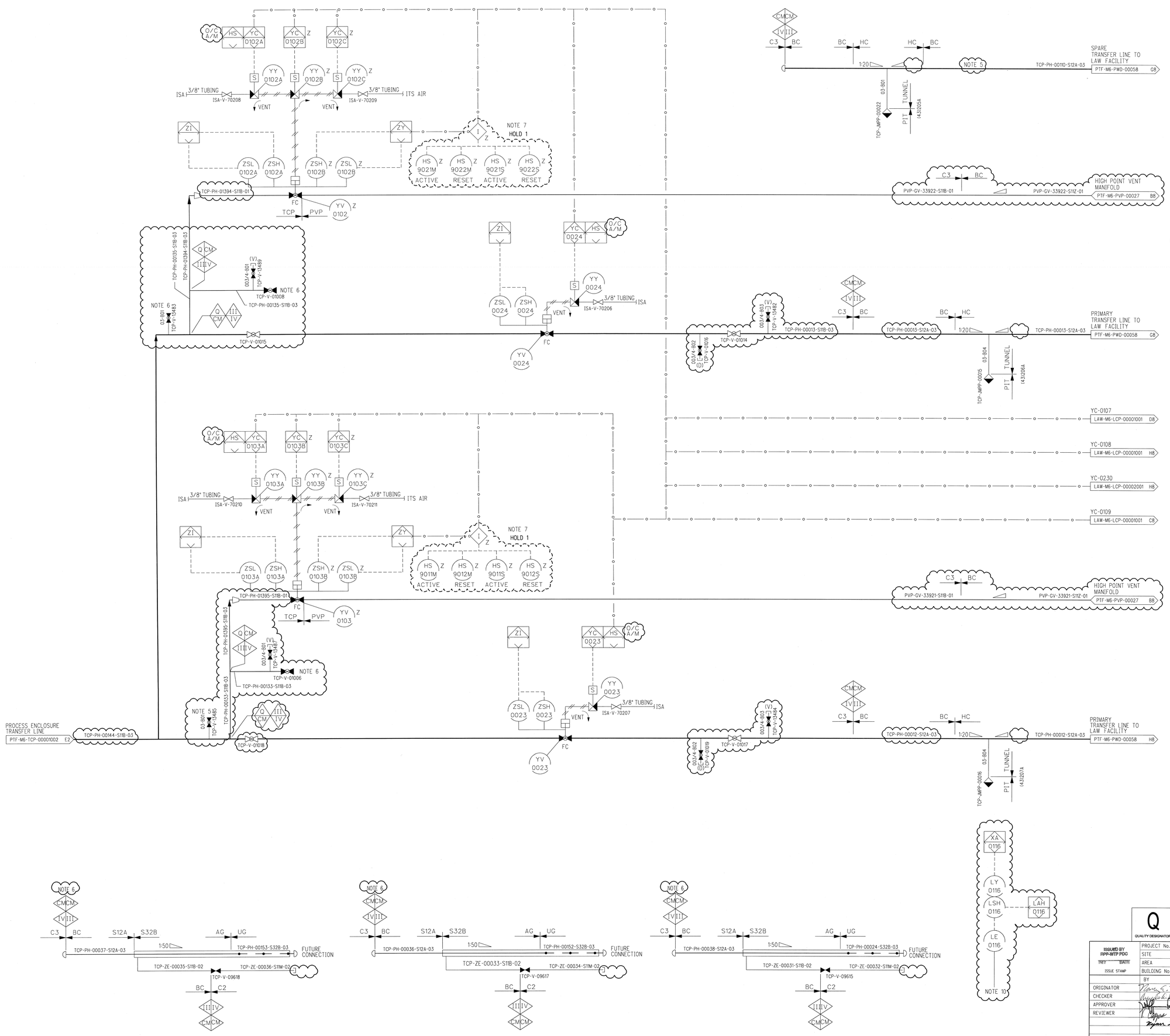
R14430218

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

'E' SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

FORM E_SDN.DGN 02/2009

PLOTTED BY: dewebb C:\Work\dewebb\dms0383\PTFM6TCP00001002.dgn 9/22/2011 3:20:23 PM



NOTES:

1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED. THE PRESSURE BOUNDARY FOR THE NON-SAFETY SOLENOID VALVES AND NON-SAFETY INSTRUMENT AIR SUPPLY (ISA) IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
5. SPARE TRANSFER LINE IS TO BE CONNECTED UPON FAILURE OF PRIMARY TRANSFER LINES. CONNECT TCP-PH-00144-S11B-03 B01 TO TCP-PH-00110-S12A-03.
6. VALVES TCP-V-01006, TCP-V-01008, AND TCP-V-13483 WILL BE CONNECTED TO LINES TCP-PH-00037-S12A-03, TCP-PH-00036-S12A-03, AND TCP-PH-00038-S12A-03 FOR TRANSFERS OF TREATED LAW CONCENTRATE TO THE FUTURE SUPPLEMENTAL LAW FACILITY.
7. THE PPJ LIMITS TIME VALVES TCP-YV-0102 AND TCP-YV-0103 ARE CLOSED.
8. VALVES ON THIS DRAWING CAN BE ALIGNED BY HANDSWITCHES LOCATED ON 24590-PTF-M6-TCP-00001001, TABLE 1.
9. PROCESS PIPELINES ARE FULLY WELDED WITH BUTT WELDED SLEEVED TOP ENTRY PLUG VALVES IN C3 AREAS FOR LEAK CONTROL. PHYSICAL LAYOUT SHALL PROVIDE COMPLETE VISIBILITY OF PROCESS PIPELINES IN C3 AREAS FOR DAILY VISUAL INSPECTION EXCEPT THE PLATFORM THAT HAS SECONDARY CONTAINMENT AND LEAK DETECTION.
10. CONDUCTIVITY CABLE IS PLACED ON THE PLATFORM FLOOR FOR LEAK DETECTION UNDERNEATH PIPING AND VALVES.
11. THIS DRAWING WAS GENERATED FROM DRAWING 24590-PTF-M6-TCP-00001002. THIS DRAWING INCLUDES INFORMATION FROM REPLACING TCP-BULGE-00004 WITH C3/C5 PROCESS EQUIPMENT ENCLOSURE FOR CONTAMINATION CONTROL, 24590-PTF-M6N-TCP-00022, -00024, AND 24590-PTF-M6LN-M80T-00035.

HOLD/OPEN ITEMS:

1. PENDING PPJ SYSTEM DESIGN.

REFERENCES:

1. 24590-PTF-3YD-TCP-00001, SYSTEM DESCRIPTION FOR THE TREATED LAW CONCENTRATE STORAGE PROCESS (TCP).

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 11	NW	AH			9/23/11

REVISION HISTORY

QUALITY DESIGNATOR: Q

ISSUED BY RPP-WTP PDC — DATE

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	10	

	BY	DATE
ORIGINATOR		8/3/11
CHECKER		8/9/11
APPROVER		9/23/11
REVIEWER		9/23/11
		9-23-11

CONTENT APPLICABLE TO ALARA? X YES NO

ADR NO. 24590-PTF-ADR-M-02-006 REV: 5

EMS SCREENING REQUIRED? X YES NO EMS INITIAL IF YES

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - PTF TREATED LAW CONCENTRATE STORAGE SYSTEM TCP-VSL-00001

SCALE: NONE

24590-PTF-M6-TCP-00001003

REV 0

SIZE: E 44x34

COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

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FORM E_SDN.DGN 02/2009

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Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
Waste Feed Receipt Process System FRP-VSL-00002A (Waste Feed Receipt Vessel) FRP-VSL-00002B (Waste Feed Receipt Vessel) FRP-VSL-00002C (Waste Feed Receipt Vessel) FRP-VSL-00002D (Waste Feed Receipt Vessel)	FRP	**24590-PTF** -M2-FRP-P0001, Rev 2 -M2-FRP-P0002, Rev 2 -M2-FRP-P0003, Rev 2 -M2-FRP-P0004, Rev 4 -M5-V17T-00003, Rev 2 -M6-FRP-00001, Rev3 -M6-FRP-00002, Rev 3 -M6-FRP-00003, Rev 3 -M6-FRP-00005, Rev 3 -M6-FRP-00006, Rev 3 -M6-FRP-00007, Rev 3 -M6-FRP-00008, Rev 3 -M6-FRP-00009001, Rev ~~3~~0 -M6-FRP-00010001, Rev ~~3~~0 -MVD-FRP-00005, Rev 12 -MVD-FRP-00006, Rev 12 -MVD-FRP-00007, Rev 12 -MVD-FRP-00008, Rev 12 -N1D-FRP-00001, Rev 7 -P1-P01T-00001, Rev 7 -P1-P01T-P0002, Rev 7 **24590-WTP** -3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev 4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3	Section 4.1.2.1; Tables 4-2 and 4-6; and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	FRP-VSL-00002A = 472,900 FRP-VSL-00002B = 472,900 FRP-VSL-00002C = 472,900 FRP-VSL-00002D = 472,900
Waste Feed Evaporation Process System	FEP	**24590-PTF** -3PS-MEVV-T0001, Rev 2	Section 4.1.2.2; Tables 4-2 and 4-6; and Figures C1-1, C1-2, and C1-02A	FEP-VSL-00005 = 5,022

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
Process System TCP-VSL-00001 (Treated LAW Concentrate Storage Vessel)		-M5-V17T-00006, Rev 1 -M6-TCP-00001001, Rev ~~0~~1 -M6-TCP-00001002, Rev ~~0~~1 -M6-TCP-00001003, Rev 0 -M6-TCP-00002001, Rev 1 -M6-TCP-00002002, Rev 1 -M6-TCP-00002003, Rev 1 -M6-TCP-00002004, Rev 1 -M6-TCP-00002005, Rev 1 -MV-TCP-P0002, Rev 1 -MVD-TCP-P0002, Rev 2 -N1D-TCP-P0001, Rev 2 -P1-P01T-00001, Rev 7 **24590-WTP** -3PS-G000-T0002, Rev 8 -3PS-MV00-T0001, Rev 4 -3PS-MV00-T0002, Rev 3 -3PS-MV00-T0003, Rev 3	and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	
Treated LAW Evaporation Process System TLP-VSL-00002 (Treated LAW Evaporator Condensate Vessel) TLP-VSL-00009A (LAW SBS Condensate Receipt Vessel) TLP-VSL-00009B (LAW SBS Condensate Receipt Vessel)	TLP	**24590-PTF** -3PS-MEVV-T0001, Rev 3 -M5-V17T-00005, Rev 2 -M6-TLP-00001, Rev 3 -M6-TLP-00002, Rev 3 -M6-TLP-00003, Rev 3 -MVD-TLP-P0001, Rev 2 -MVD-TLP-P0002, Rev 2 -MVD-TLP-00004, Rev 1 -MV-TLP-P0001, Rev 1 -MV-TLP-P0002, Rev 1 -N1D-TLP-P0001, Rev 2	Section 4.1.2.11; Tables 4-2 and 4-6; and Figures C1-1, C1-2, and C1-02A of Operating Unit Group 10, Addendum C of this Permit.	TLP-VSL-00002 = 2,227 TLP-VSL-00009A = 130,010 TLP-VSL-00009B = 130,010

Table III.10.E.J – Pretreatment Plant Tank Systems Secondary Containment Systems, Including Sumps, Leak Detection Boxes, Bulges, Autosamplers, and Floor Drains

Sump, Bulge or Drain Line I.D.# & Room Location	Maximum Sump (gallons) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump, Bulge or Drain Line Dimensions[a] (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
PWD-SUMP-00037 P-0124A	7.5		30" Dia. x 27" Deep Stainless Steel	**24590-PTF** -M6-PWD-00012, Rev 2
RLD-SUMP-00003 P-0150 (Radioactive Liquid Waste Disposal Area, El. 0', outdoor)	583	Dry Sump	78" x 48" x 36" Deep Epoxy coating	**24590-PTF** -M6-RLD-00002, Rev 3
PVP-ZY-00037-S11B-03, P-0105 (PVP-BULGE-00001, El. 0')			3" Stainless Steel	-M6-PVP-00017002, Rev 0
PVP-ZY-00036-S11B-03, P-0101A (PVP-BULGE-00002, El. 0')			3" Stainless Steel	-M6-PVP-00018002, Rev 0
TCP-ZF-00032-S11B-03 Drain Line, P-0116 (TCP-BULGE-00004, El. 0')	N/A	N/A	3" Stainless Steel	**24590-PTF** -M6-TCP-00001002, Rev ~~0~~1
DIW-ZF-01511-S11B-03 Drain Line, P-0320 (DIW-BULGE-00001, El. 56')	N/A	N/A	3" Stainless Steel	**24590-PTF** -M6-DIW-00004001
DIW-ZF-01510-S11B-03, P-0320 Drain Line (DIW-	N/A	N/A	3" Stainless Steel	**24590-PTF** -M6-DIW-00004001