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

15-ESQ-0001

OCT 10 2014

Ms. S. L. Dahl-Crumpler
Nuclear Waste Program
State of Washington
Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

Dear Ms. Dahl-Crumpler:

CLASS 1 MODIFICATIONS TO THE HANFORD FACILITY RESOURCE CONSERVATION AND RECOVERY ACT PERMIT (PERMIT), QUARTER ENDING SEPTEMBER 30, 2014

In accordance with Permit Condition I.C.3, enclosed for your notification are the Class 1 modifications for the quarter ending September 30, 2014.

These modifications update information in Part III of Permit Revision 8C. The modifications pertain to the Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility, the 242-A Evaporator, the 325 Hazardous Waste Treatment Unit, the Integrated Disposal Facility, and the Waste Treatment and Immobilization Plant. The Class 1 modifications are being made to ensure that activities are conducted in compliance with the Permit. A record of the enclosed documentation is maintained in the Hanford Facility Operating Record.

If you have any questions, please contact me, or your staff may contact Jeffrey A. Frey, Acting Assistant Manager for Safety and Environment, on (509) 376-7727.

Sincerely,

Doug S. Shoop
Acting Manager

ESQ:ACM

Enclosure

cc: See page 2

cc w/encl:
R. G. Hastings, ORP (CD ROM)
J. L. Cantu, Ecology (CD ROM)
Administrative Record, TSD: H-0-1, H-0-8, D-2-11, H6-08, S-2-8, T-2-8, T-2-6, T-3-4. (Hard Copy & CD ROM)
Ecology NWP Library (Hardcopy & CD ROM)
Environmental Portal, LMSI, A3-95 (CD ROM)
Gonzaga University, Foley Center Library (CD ROM)
HF Operating Record (J. K. Perry, MSA, H7-28) (CD ROM)
Portland State University, Government Information (CD ROM)
University of Washington, Suzzallo Library, Govt Publications Department (CD ROM)
U.S. Department of Energy, Public Reading Room, Washington State University, Tri Cities, Consolidated Information Ctr., (CD ROM)

cc w/o encl:
B. M. Barnes, CHPRC
A. S. Carlson, Ecology
B. L. Curn, URS
S. L. Dahl, Ecology
K. A. Hadley, WCH
J. A. Hedges, Ecology
T. A. Hopkins, CHPRC
M. E. Jones, Ecology
J. D. McDonald, Ecology
S. Murdock, BNI
B. Peck, BNI
J. R. Seaver, CHPRC
H. T. Tilden, PNNL
M. B. Wilson, MSA
D. M. Yasek, WRPS

ENCLOSURE

CLASS 1 MODIFICATIONS FOR QUARTER ENDING SEPTEMBER 30, 2014
Ms. S. L. Dahl-Crumpler, Ecology

Consisting of 199 pages,
including this cover page

Hanford Facility RCRA Permit Modification Notification Forms

Part III, Operating Unit Group 3

Liquid Effluent Retention Facility & 200 Area Effluent Treatment Facility

Index

Submitted by Co-Operator: _____ 9/24/2014
Date

Reviewed by RL Program Office: _____ 9/25/14
Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Liquid Effluent Retention Facility & 200 Area Effluent Treatment Facility	**Part III, Operating Unit Group 3**

Description of Modification:
Hanford Facility RCRA Permit III.3 Permit Conditions:

III.3.E SECURITY

III.3.E.1 The Permittees comply with the Security requirements specific to the LERF and 200 Area ETF in Addendum E and Permit Attachment 3 as required by Permit Condition ~~II.L~~II.M. [WAC 173-303-310(2)]

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. Editorial correction.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/18/14 Date

Remove and Replace the Following Sections:

Remove Part III Permit Conditions, dated April 29, 2014, and replace with Permit Conditions dated September 30, 2014.

PART III, OPERATING UNIT GROUP 3 PERMIT CONDITIONS

Liquid Effluent Retention Facility & 200 Area Effluent Treatment Facility

Unit Description:

The Liquid Effluent Retention Facility (LERF) and 200 Area Effluent Treatment Facility(200 Area ETF) consists of an aqueous waste treatment system that provides treatment, storage integral to the treatment process, and storage of secondary wastes from the treatment process for a variety of aqueous mixed waste. The 200 Area ETF is located in the 200 East Area. Aqueous wastes managed by the 200 Area ETF include process condensate from the LERF and 200 Area ETF and other aqueous waste generated from onsite remediation and waste management activities.

The LERF consists of three lined surface impoundments, or basins. Aqueous waste from LERF is pumped to the 200 Area ETF for treatment in a series of process units, or systems, that remove or destroy essentially all of the dangerous waste constituents. The treated effluent is discharged to a State-Approved Land Disposal Site (SALDS) north of the 200 West Area, under the authority of a Washington State Waste Discharge Permit (Ecology 2000) and 200 Area ETF Delisting (40 CFR 261, Appendix IX, Table 2). Construction of the LERF began in 1990. Waste management operations began at LERF in April 1994. Construction of the 200 Area ETF began in 1992. Waste management operations began at 200 Area ETF in November of 1995.

This Chapter provides unit-specific Permit conditions applicable to the dangerous waste management units for LERF and 200 Area ETF.

List of Addenda Specific to Operating Unit Group 3

Addendum A	Part A Form, dated March 31, 2014
Addendum B	Waste Analysis Plan, dated March 31, 2013
Addendum C	Process Information, dated April 8, 2014
Chapter 5.0	Groundwater Monitoring (DOE/RL-2013-46, Rev. 0), dated April 29, 2014
Addendum E	Security Requirements, dated, June 30, 2011
Addendum F	Preparedness and Prevention, dated April 8, 2014
Addendum G	Personnel Training, dated June 30, 2012
Addendum H	Closure Plan, dated June 30, 2011
Addendum I	Inspection Requirements, dated April 8, 2014
Addendum J	Contingency Plan, dated March 31, 2012

Definitions

State and federal delisting actions: The state delisting action pursuant to WAC 173-303-910(3), August 8, 2005, and the federal delisting action appearing in 40 CFR 261, Appendix IX, Table 2 applicable to the United States, Department of Energy, Richland, Washington.

Acronyms

LERF and 200 Area ETF 200-Area Liquids Processing Facility

III.3.A COMPLIANCE WITH UNIT-SPECIFIC PERMIT CONDITIONS

III.3.A.1 The Permittees will comply with all Permit Conditions in this Chapter and its Addendums and Chapters with respect to dangerous waste management and dangerous waste management units in LERF and 200 Area ETF, in addition to requirements in Permit Part I and Part II.

III.3.B GENERAL WASTE MANAGEMENT

III.3.B.1 The Permittees are authorized to accept dangerous and/or mixed waste for treatment in dangerous waste management units that satisfies the waste acceptance criteria in Permit Addendum B according to the waste acceptance procedures in Permit Addendum B. [WAC 173-303-300]

III.3.B.2 The Permittees are authorized to manage dangerous and/or mixed wastes physically present in the dangerous waste management units in LERF and 200 Area ETF as of the effective date of this Permit according to the requirements of Permit Condition III.15.B.1.

III.3.B.3 The Permittees are authorized to treat and/or store dangerous/mixed waste in the dangerous waste management units in LERF and 200 Area ETF according to the following requirements:

III.3.B.3.a The Permittees are authorized to treat, and store as necessary in support of treatment, dangerous waste in the 200 Area ETF tank systems identified in Permit Addendum C, Section C.2, and Section C.4 according to the Permit Conditions of this Chapter.

III.3.B.3.b The Permittees are authorized to store and treat those dangerous and/or mixed waste identified in Permit Addendum C, Section C.3, in containers according to the requirements of this Chapter. All container management activities pursuant to this Permit Condition will take place within the container storage area or within the 200 Area ETF process area identified in Permit Addendum C, Figure C.3.

III.3.B.3.c Treatment in containers authorized by Permit Condition III.3.B.3.b is limited to decanting of free liquids, and addition of sorbents to free liquids. The Permittees will ensure that sorbents are compatible with wastes and the containers. Sorbents will be compliant with the requirements of WAC 173-303-140(4)(b)(iv), incorporated by reference.

III.3.B.3.d The Permittees are authorized to treat aqueous waste in LERF Basins (Basins 42, 43 and 44) subject to the following requirements:

III.3.B.3.d.1 Following treatment in a LERF basin, aqueous wastes must be treated in 200 Area ETF according to Permit Conditions III.3.B.3.a through c.; [40 CFR 268.4(2)(iii), incorporated by reference by WAC 173-303-140]

III.3.B.3.d.2 The Permittees must ensure that for each basin, either supernatant is removed on a flow-through basis, to meet the requirement of 40 CFR 268.4(a)(2)(ii) incorporated by reference by WAC 173-303-140, or incoming waste is shown to not contain solids by either: (1) sampling results showing the waste does not contain detectable solids, or (2) filtering through a 10 micron filter;[WAC 173-303-815(2)(b)(ii)]

III.3.B.4 The Permittees will maintain the physical structure of the LERF and 200 Area ETF as documented in the applicable sections of Permit Addendum C, Section C.2. [WAC 173-303-630(7), WAC 173-303-640(3), WAC 173-303-640(4)]

III.3.B.5 The Permittees are authorized to use treated effluent for recycle/makeup water purposes at the 200 Area ETF as outlined in Permit Addendum C, Section C.2.5.5, and the letters dated August 19, 2005, EPA Region 10 to Keith A. Klein; and August 8, 2005, Department of Ecology to Keith A. Klein. [WAC 173-303-815 (2)(b)(ii)]

III.3.B.6 The Permittees will maintain and operate systems for the 200 Area ETF documented in Permit Addendum C, Section C.2.5 as necessary for proper operation of the 200 Area ETF, compliance with the conditions of this Permit, and protection of human health and the environment. For purposes of this Permit Condition, the Monitor and Control System documented in Permit Addendum C, Section C.2.5.1, is considered to include all indicators, sensors, transducers, actuators and other control devices connected to but remote from the centralized monitor and control system (MCS) computer.

III.3.B.7 The Permittees must complete the following requirements prior to acceptance for treatment in 200 Area ETF aqueous waste streams with listed waste numbers subject to the requirements of the State and Federal delisting: [WAC 173-303-815(2)(b)(ii)]

III.3.B.7.a The Permittees will prepare a written waste processing strategy according to the requirements of the State and Federal Delisting Actions Conditions (1)(a)(ii) and (1)(b), incorporated by reference, and Permit Addendum B, Section B.2.2.2.

III.3.B.7.b The waste processing strategy required by Permit Condition III.3.B.7.a, must document the proposed processing configuration for the 200 Area ETF, operating conditions for each processing unit, and the expected treated effluent characteristics based on the process model and treatability envelope data required by State and Federal Delisting Conditions (1)(a)(ii) and (1)(b).

III.3.B.7.c The written waste processing strategy required by Permit Condition III.3.B.7.a must demonstrate that the projected treated effluent characteristics satisfy the delisting exclusion limits in State and Federal Delisting Condition (5) of the state and federal delisting actions, and the discharge limits of the State Discharge Permit ST-4500.

III.3.B.7.d The Permittees will place a copy of the written waste processing strategy required by Permit Condition III.3.B.7.a in the Hanford Facility Operating Record, LERF and 200 Area ETF file as part of the documentation of waste streams accepted for management at the 200 Area ETF.

III.3.B.8 Treatment of aqueous waste streams in the 200 Area ETF with listed waste numbers that are subject to the requirements of the state and federal delisting actions must comply with the requirements of State and Federal Delisting Condition (1)(c), incorporated by reference. [WAC 173-303-815 (2)(b)(ii)]

III.3.B.9 The Permittees will manage treated effluent in the final verification tanks according to the requirements of the State and Federal Delisting Conditions (3) and (5), incorporated by reference. [WAC 173-303-815 (2)(b)(ii)]

III.3.B.10 The Permittees will manage treated effluent from the 200 Area ETF according to the requirements of the State Waste Discharge Permit ST 4500 and State and Federal Delisting Condition (7). [WAC 173-303-815(2)(b)(ii)]

III.3.B.11 The Permittees will ensure compliance with treatment standards (40 CFR 268, incorporated by reference by WAC 173-303-140) applicable to treated effluent prior to discharge to the State Authorized Land Disposal Site (SALDS), the delisting criteria at 40 CFR 261, Appendix IX, Table 2, and the corresponding state-approved delisting (dated August 8, 2005, all incorporated by reference). Sampling and analysis necessary for these demonstrations must meet the corresponding requirements in Permit Addendum B. [WAC 173-303-140, WAC 173-303-815 (2)(b)(ii)]

III.3.C WASTE ANALYSIS

III.3.C.1 The Permittees will comply with requirements in Permit Addendum B for sampling and analysis of all dangerous and/or mixed waste required by conditions in this Chapter. [WAC 173-303-300]

III.3.C.2 The Permittees will have an accurate and complete waste profile as described in Permit Addendum B, Section B.2.1.2, for every waste stream accepted for management in LERF and 200 Area ETF dangerous waste management units. [WAC 173-303-380 (1)(a), (b)]

III.3.C.3 The Permittees will place a copy of each waste profile required by Permit Condition III.15.C.2 in the Hanford Facility Operating Record, LERF and 200 Area ETF file required by Permit Condition II.I.2. [WAC 173-303-380 (1)(a), (b)]

III.3.C.4		The Permittees will make a copy of the waste profile required by Permit Condition III.15.C.2 available upon request. [WAC 173-303-380 (1)(a), (b)]
III.3.C.5		Records and results of waste analysis described in this Permit will be maintained in the Hanford Facility Operating Record, LERF and 200 Area ETF file required by Permit Condition II.I.2. [WAC 173-303-380 (1)(a), (b)]
III.3.D	**RECORDKEEPING AND REPORTING**	
III.3.D.1		The Permittees will place the following into the Hanford Facility Operating Record, LERF and 200 Area ETF file required by Permit Condition II.I.2:
III.3.D.1.a		Records required by WAC 173-303-380 (1)(k), and -(o) incorporated by reference.
III.3.D.1.b		Records and results of waste analysis, waste determinations (as required by Subpart CC) and trial tests required by WAC 173-303-300, General waste analysis, and by 40 CFR §264.1034,§264.1063, §264.1083, §265.1034, §265.1063, §265.1084, §268.4(a), and §268.7; [WAC 173-303-310(2)]
III.3.D.1.c		An inspection log, summarizing inspections conducted pursuant to Permit Condition III.3.H.1; [WAC 173-303-380(1)(e)]
III.3.D.1.d		Records required by the State and Federal Delisting Condition (6), incorporated by reference; [WAC 173-303-815 (2)(b)(ii)]
III.3.E	**SECURITY**	
III.3.E.1		The Permittees comply with the Security requirements specific to the LERF and 200 Area ETF in Addendum E and Permit Attachment 3 as required by Permit Condition II.M. [WAC 173-303-310(2)]
III.3.F	**PREPAREDNESS AND PREVENTION**	
III.3.F.1		The Permittees will comply with the Preparedness and Prevention requirements specific to LERF and 200 Area ETF in Addendum F. [WAC 173-303-340]
III.3.G	**CONTINGENCY PLAN**	
III.3.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.3.H	**INSPECTIONS**	
III.3.H.1		The Permittees will comply with Addendum I in addition to the requirements of Permit Condition II.X. [WAC 173-303-320]
III.3.I	**TRAINING PLAN**	
III.3.I.1		The Permittees will include the training requirements described in Addendum G of this Chapter specific to the dangerous waste management units and waste management activities at LERF and 200 Area ETF into the written training plan required by Permit Condition II.C.
III.3.J	**GENERAL REQUIREMENTS**	
III.3.J.1		The Permittees will comply with the requirements of WAC 173-303-395(1), incorporated by reference, for prevention of reaction of ignitable, reactive, or incompatible wastes.
III.3.K	CLOSURE	
III.3.K.1		The Permittees will close dangerous waste management units in the LERF and 200 Area ETF in accordance with Addendum H, Closure Plan, and Permit Condition II.J. [WAC 173-303-610(3)(a)]

III.3.L POST CLOSURE – RESERVED

III.3.M CRITICAL SYSTEMS – RESERVED

III.3.N RESERVED

III.3.O CONTAINERS

III.3.O.1 Container Storage and Treatment Unit Standards

III.3.O.1.a As part of or in addition to the requirements of Permit Condition III.3.B.2, the Permittees will ensure the integrity of container storage secondary containment and the chemically resistant coating described in Addendum C, Section C.3.4.1 as necessary to ensure any spills or releases to secondary containment do not migrate to the underlying concrete or soils.

III.3.O.1.a.1 Include documentation of any damage and subsequent repairs in the Hanford Facility Operating Record, LERF and 200 Area ETF file required by Permit Condition II.I.2.

III.3.O.2 Container Management Standards

III.3.O.2.a The Permittees will maintain and manage wastes in accordance with the requirements of Addendum C, Section 4.3.2, and Section 4.3.2. [WAC 173-303-630(2)]

III.3.O.2.b The Permittees will label containers in accordance with the requirements of Addendum C, Section C.3.2, and Section C.3.3. [WAC 173-303-630(3)]

III.3.O.2.c The Permittees will comply with the requirements for managing wastes in containers in WAC 173-303-630(5), incorporated by reference.

III.3.O.2.d The Permittees will ensure wastes are compatible with containers and with other wastes stored or treated in containers within the 200 Area ETF according to the requirements of Addendum C, Section C.3.4.3. [WAC 173-303-630(4), WAC 173-303-630(9)]

III.3.O.2.e The Permittees may treat wastes in containers via decanting of free liquids and addition of sorbents. The Permittees may not use addition of sorbents for purposes of changing the treatability group of a waste with respect to the land disposal restriction standards of 40 CFR 268, incorporated by reference by WAC 173-303-140.

III.3.O.2.f The Permittees will remove any accumulated liquids from container storage areas in 200 Area ETF according to the requirements of Addendum C, Section C.3.4.2, to ensure containers are not in contact with free liquids and to prevent overflow of the container storage area secondary containment.

III.3.O.2.g The Permittees will comply with the requirements for air emissions from containers in Addendum C, Section C.6.3.2. [WAC 173-303-692]

III.3.P TANK SYSTEMS

III.3.P.1 Tank System Requirements

III.3.P.1.a The Permittees will develop a schedule for conducting integrity assessments (IA). The schedule will meet the requirements of Addendum C, Section C.4.2, and consideration of the factors in WAC 173-303-640(2)(e) or WAC 173-303-640(3)(b) as applicable:

III.3.P.1.b The Permittees will maintain a copy of the schedule required by Permit Condition III.3.P.1.a, in the Hanford Facility Operating Record, LERF and 200 Area ETF file, and conduct periodic integrity assessments according to the schedule. The Permittees will document results of integrity assessments conducted according to the IA in the Hanford Facility Operating Record, LERF and 200 Area ETF file.

III.3.P.1.c		For existing tank systems, if a tank system is found to be leaking, or is unfit for use, the Permittees must follow the requirements of WAC 173-303-640(7), incorporated by reference. [WAC 173-303-640(3)(b)]
III.3.P.2		Tank System Operating Requirements
III.3.P.2.a		The Permittees will comply with the requirements of WAC 173-303-640(5)(a), incorporated by reference.
III.3.P.2.b		The Permittees will comply with the requirements of Addendum C, Section C.4.5.2. [WAC 173-303-640(5)(b)]
III.3.P.2.c		The Permittees will comply with the requirements of Addendum C, Section C.4.6. [WAC 173-303-640(5)(d)]
III.3.P.2.d		The Permittees will comply with the requirements of WAC 173-303-640(7), incorporated by reference, in response to spills or leaks from tanks systems at 200 Area ETF. [WAC 173-303-640(5)(c)]
III.3.P.2.e		The Permittees will ensure that the Waste Processing Strategy required by Permit Condition III.3.B.7.a, provides for the immediate treatment or blending of waste accepted for management at the 200 Area ETF such that the resulting waste or mixture is no longer reactive or ignitable when further managed in 200 Area ETF tank systems. [WAC 173-303-640(9)]
III.3.P.2.f		The Permittees will comply with the requirements of WAC 173-303-640(10), incorporated by reference.
III.3.Q		**SURFACE IMPOUNDMENTS**
III.3.Q.1		The Permittees will maintain the three LERF basins according to the requirements of WAC 173-303-650 (2)(f), incorporated by reference.
III.3.Q.2		The Permittees will operate the LERF basins according to the requirements of Addendum C, Section C.5.3, and Addendum I, Section I.2.2.3.1 to prevent over-topping. [WAC 173-303-650 (2)(c)]
III.3.Q.3		The Permittees will develop and maintain, and operate the LERF basins to ensure that any flow of waste into the impoundment can be immediately shut off in the event of overtopping or liner failure. [WAC 173-303-650 (2)(d)]
III.3.Q.4		The Permittees will comply with the requirements of WAC 173-303-650 (2)(g), incorporated by reference.
III.3.Q.5		The Permittees will comply with the requirements of WAC 173-303-650 (4)(b), incorporated by reference.
III.3.Q.6		The Permittees will comply with the requirements of WAC 173-303-650 (4)(c), incorporated by reference. The certification required by this Permit Condition must be provided to Ecology no later than seven calendar days after the date of the certification. A copy of the certification will be placed in the Hanford Facility Operating Record, LERF and 200 Area ETF file required by Permit Condition II.I.2. [WAC 173-303-650 (4)(c)]
III.3.Q.7		The Permittees will comply with the requirements of WAC 173-303-650(5)(b), incorporated by reference, in response to events in WAC 173-303-650(5)(a), incorporated by reference.
III.3.Q.8		The Permittees will comply with the requirements of WAC 173-303-650(5)(d) for any LERF basin that has been removed from service in accordance with Permit Condition III.3.Q.7 that the Permittees will restore to service. [WAC 173-303-650(5)(d)]

III.3.Q.9 The Permittees will close any LERF basin removed from service in accordance with the requirements of Permit Condition III.3.Q.7 or a basin that cannot be repaired or that the Permittees will not to return to service. [WAC 173-303-650(5)(e)]

III.3.Q.10 The Permittees will comply with the requirements of Addendum C, Section C.5.10 with respect to management of ignitable or reactive wastes in the LERF basins. [WAC 173-303-650(7)]

III.3.Q.11 The Permittees can place incompatible wastes and materials in the same LERF basin only if in compliance with the requirements of WAC 173-303-395(1)(b), (c). [WAC 173-303-650(8)]

III.3.Q.12 The Permittees will use the action leakage rate in Addendum C, Section C.5.8, for operation of LERF basins, and comply with the requirements of WAC 173-303-650(10)(b). [WAC 173-303-650(10)]

III.3.Q.13 The Permittees will comply with the requirements of WAC 173-303-650(11), incorporated by reference.

III.3.Q.14 The Permittees will comply with the requirements of 40 CFR 264, Subpart CC, incorporated by reference by WAC 173-303-692.

III.3.R GROUNDWATER

III.3.R.1 The Permittees will comply with the requirements of Addendum D, Groundwater Monitoring Plan. [WAC 173-303-645]

III.3.R.2 All wells constructed pursuant to this Permit will be constructed in compliance with Chapter 173-160 WAC incorporated by reference through WAC 173-303-645 (8)(c).

III.3.R.3 Update the Groundwater Monitoring Network

III.3.R.3.a The Permittees will install an additional downgradient monitoring well E-26-15 as identified in Addendum D, Groundwater Monitoring Plan by December, 2016.

III.3.R.3.b Within 60-days of the well installation, the Permittees will submit a Class 2 Permit modification [WAC 173-303-830 Appendix I, C.1.a] to update Addendum D and include the additional monitoring well into the groundwater monitoring network.

III.3.R.3.c Concurrently with the permit modification request, the Permittees will submit a revised "Liquid Effluent Retention Facility Characterization Report" for the additional monitoring well that includes:

1) Well construction in accordance with WAC 173-303-645(8)(c)
2) Well screen placement in the upper aquifer in accordance with WAC 173-303-645(8)(a)
3) Hydrogeologic conditions, stratigraphy and hydraulic conductivity, derived from geologist observations of borehole archive samples, down hole gamma logging, and aquifer slug tests in accordance with WAC 173-303-645(8)(a)(i)(A)
4) Drilling and sampling details in accordance with WAC 173-303-645(8)(d)
5) Borehole corrections (e.g., precision surveys, gyroscopic corrections, and barometric response corrections) to ensure adequate hydraulic understanding considering the very small gradient in accordance with WAC 173-303-645(8)(f)
6) Geochemical comparison of the water quality with other existing wells to ensure anticipated representative conditions in accordance with WAC 173-303-645(8)(a)(ii)
7) Document surface location as required by WAC 173-303-645(6)

III.3.R.3.c.1 Groundwater sample results from the new well (E-26-15) and the existing wells for all constituents in the Addendum D, Groundwater Monitoring Plan for the Liquid Effluent Retention Facility,

III.3.R.3.c.2 Results of evaluating final well development data and drilling logs,

III.3.R.3.c.2.a A well use designation (e.g., upgradient or downgradient).

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Hanford Facility RCRA Permit Modification Notification Forms

Part III, Operating Unit 4

242-A Evaporator

Index

Submitted by Co-Operator:

MARTIN ELLIS for D.K.S 9/24/14

Date

Reviewed by ORP Program Office:

9/24/14

Date

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
Hanford Facility RCRA Permit III.4:

PART III, OPERATING UNIT 4 UNIT-SPECIFIC CONDITIONS
242-A Evaporator

UNIT DESCRIPTION

The 242-A Evaporator is a mixed……

III.4.A COMPLIANCE WITH UNIT SPECIFIC PERMIT CONDITIONS

The Permittees shall comply with…….

CHAPTERS SPECIFIC TO OPERATING UNIT GROUP 4:

Chapter 1.0	Part A Form, dated March 31, 2014
Chapter 3.0	Waste Analysis Plan, dated March 31, 2014
Chapter 4.0	Process Information, dated September 30, 2013
Appendix 4B	Tank Integrity Assessment, dated December 31, 2002
Chapter 5.0	Groundwater Monitoring, dated (not applicable)
Chapter 6.0	Procedure to Prevent Hazards, dated September 30, 2014 ~~January 10, 2014~~
Chapter 7.0	Contingency Plan, dated September 30, 2013
Chapter 8.0	Personnel Training, dated September 30, 2013
Chapter 11.0	Closure, dated September 30, 2013

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 is needed to update chapter revision date.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14
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 downgraded to a Class [1], if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.0 PROCEDURES TO PREVENT HAZARDS

6.0 PROCEDURES TO PREVENT HAZARDS

This chapter discusses security, inspection schedules, preparedness and prevention requirements, preventive procedures, structures, and equipment, and prevention of reaction of ignitable, reactive, and incompatible waste for the 242-A Evaporator.

~~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~~

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 change to remove the disclaimer. The language is in the introduction to the permit and does not need to be repeated in unit documentation.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.1 SECURITY

6.1 SECURITY

~~Refer to Permit Attachment 33, §6.1 Security.~~Refer to Permit Attachment 3, Security for compliance with WAC 173-303-310(2)(b) and (c). The 242-A Evaporator is located within the 200 Area of the Hanford Facility and access is controlled by physical barriers, which complies with WAC 173-303-310(2)(c). To meet the requirements of WAC 173-303-310(2)(a), ~~S~~signs stating *Danger-Unauthorized Personnel Keep Out*, or equivalent language, legible at 25 feet or more, are posted at each entrance to the active portion or each entrance that will lead to the active portion. The Permittees will post signs on or near the outside doors to the 242-A Evaporator.

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
Update of entire section to provide more information on the security of the site.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14
S. L. Dahl-Crumpler 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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.2.1 General Inspection Requirements

6.2.1 General Inspection Requirements

This section provides an overview of inspections performed at the 242-A Evaporator. A copy of the inspection plan is kept in the Hanford Facility Operating Record, 242-A Evaporator unit-specific portion ~~control room~~. There are three general classes of inspections at the 242-A Evaporator:

- Monitoring of remote instrumentations and alarms are performed by operating personnel in the 242-A Evaporator control room using the MCS computer……

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 Changing text to identify copy of inspection plan to be maintained in the operating record.

Modification Approved: ☑ Yes ☐ No (state reason for denial)	Reviewed by Ecology:
Reason for denial:	S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.2.2 Tank System Inspections and Corrective Actions

6.2.2 Tank System Inspections and Corrective Actions

This section discusses the inspections performed on the two tank systems at the 242-A Evaporator: the vapor liquid separator (C-A-1), and the condensate collection tank (TK-C-100). Inspections include secondary containment and leak and overfill prevention equipment.

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 Technical edit on component names.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.2.2.1 Overfill Prevention

6.2.2.1 Overfill Prevention

The vapor liquid separator~~,~~ (C-A-1), is equipped with instrumentation that alarms before the tank reaches a level where the tank could overflow or entrain liquid waste into the vacuum condenser system. The alarm annunciates in the control room allowing operating personnel to take immediate action to stop the vapor liquid separator from overfilling.

The condensate collection tank~~,~~ (TK-C-100), was designed with an overflow line that routes waste to the feed tank, 241-AW-102. This design prevents tank overflow to the condenser room.

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 Technical edit on component names.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class [1], if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.2.2.2 Visual Inspections

6.2.2.2 Visual Inspections

Visual inspections of tanks and secondary containments are performed to check for leaks, signs of corrosion or damage, and malfunctioning equipment. The following rooms containing dangerous waste are inspected:

- Condenser room
- Pump room
- Loadout and h~~H~~ot equipment storage room

In addition, the AMU and ~~load out rooms~~Loading Room are inspected when dangerous waste is present in the room.

The vapor liquid separator (C-A-1) is located in the evaporator room, with a portion of the recirculation loop located in the pump room. Because of the high radiation dose in the evaporator room, visual inspections cannot be performed. Leaks in the evaporator room drain to the pump room sump; monitoring of the pump room sump instrumentation is performed to determine if leaks have occurred. Visual inspection of the pump room, and the loadout and hot equipment storage room~~, and load out room~~ is performed through the shielding windows ~~on~~ in the AMU ~~mezzanine~~ to constrain personnel radiological exposure to levels that are as low as reasonably achievable (ALARA).

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 Technical edits on room names and component names.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class [1], if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.2.2.3 Leak Detectors

6.2.2.3 Leak Detectors

The sample enclosures in the load out and hot equipment storage room have leak detectors for both the feed and slurry samplers. For information on these systems and their secondary containment, refer to Chapter 4.0~~, §4.1.4~~.

During sampling or maintenance activities associated with the evaporator room, pump room, or loadout and hot equipment storage room~~, or load-out room~~, a radiological contamination control curtain may be extended over the load out room to reduce the likelihood of contaminants reaching the environment through the load out door. When extended, the contamination control curtain will limit visibility to the load-out and hot equipment storage room from the shielding window on the AMU mezzanine while completing inspections. When this is the case, inspection forms will denote that the containment curtain was extended. Leaks in the evaporator room, pump room, and the loadout and hot equipment storage room~~, and load-out room~~ drain to the pump room sump. The sump high-level alarm serves as a leak detector for these rooms. For information on the rooms and their drain systems, refer to Chapter 4.0~~, §4.1.4~~.

~~There are conductivity probe leak detectors installed in the secondary containment of the feed transfer line, slurry line, and drain lines connecting the 242-A Evaporator to AW Tank Farm. However, these detectors are considered part of the DST System~~.

The PC-5000 transfer line may be continuously monitored during transfers by an electronic leak detection system (Chapter 4.0) or visually inspected at the encasement catch tank (TK-PC-101) in the LERF catch basin (242AL-43). The leak detection system alarms are monitored in the 242-A Evaporator Control Room on the Monitoring and Control System (Chapter 4.0~~§4.1.6.3.3~~). When necessary, visual inspections of the PC-5000 transfer line encasement are administratively controlled by the 242-A Evaporator Shift Manager and occur at a minimum once every 24 hours during waste water transfers through the PC-5000 transfer line to ensure compliance with WAC 173-303-640(4)(c)(iii). Visual inspection for leaks from the PC-5000 transfer line are performed by 242-A Evaporator Operations, by looking for signs of any liquid not attributed to rain/precipitation at the encasement catch tank (TK-PC-101). If any liquid is observed the 242-A Evaporator Shift Manager is notified to take corrective actions.

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 Deleted incorrect reference. Reducing possibility of incorrect references. Technical edits on room names. Deleted text on DST system as it is not applicable to 242-A Evaporator. Clarification on title.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
242-A Evaporator	**Part III, Operating Unit 4**

Description of Modification:
6.2.2.4 Alternative Leak Detection during Electrical/Ventilation Outages

6.2.2.4 Alternative Leak Detection during Electrical/Ventilation Outages

.....

During times when access is limited as a result of electrical or ventilation outages, performance of daily inspections specified in Table 6.1 may be impacted. When impacted, an alternative method of leak detection is implemented for the condenser room, and the inspections are suspended in the pump room, loadout~~loudout~~ and hot equipment storage room, and the loading room.

.....

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.2

Enter wording of WAC 173-303-830, Appendix I Modification citation: Correction of typographical error.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class [1], if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.2.2.6 Tank Assessments

6.2.2.6 Tank Assessments

The IARs ~~was~~were issued in 1998 and 2008. The frequency and nature of these assessments are discussed in Chapter 4.0~~in the IAR~~.

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 Added current Integrity Assessment Reports and pointed to Chapter 4.0.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class [1], if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
242-A Evaporator	**Part III, Operating Unit 4**

Description of Modification:

6.2.4 Air Emissions Control and Detection Inspections

6.2.4 Air Emissions Control and Detection Inspections

The process vent at the 242-A Evaporator is subject to 40 CFR 264, Subpart AA, which requires organic emissions be limited to 1.4 kilograms per hour (3.1 pounds per hour), and 2.8 mega grams per year (6,173 pounds per year), or controls be installed to reduce organic emissions by 95 percent. Organic concentrations in the waste processed at the 242-A Evaporator are limited to ensure the values of 1.4 kilograms per hour (3.1 pounds per hour) and 2.8 mega grams per year (6,173 pounds per year) are not exceeded. Therefore, no emission control devices are installed on the 242-A Evaporator vessel ventilation system and no inspections are required (Chapter 4.0, ~~§4.2~~).

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 Avoid referencing specific sections. Consistency in adding English units.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/29/14
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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.2.6 Schedule for Remedial Action for Problems Revealed

6.2.6 Schedule for Remedial Action for Problems Revealed

If while performing a visual inspection (Table 6.1), a leak or spill is discovered, 242-A Evaporator ~~facility~~ management responds immediately per Chapter 7.0, Contingency Plan. Action is taken to stop the leak and determine the cause. The waste is removed from the secondary containment within 24 hours or in a timely manner that prevents harm to human health and the environment. The specific actions for the pump room sump are described in Chapter 4.0 ~~For spills that drain to the pump room sump, the sump must be jetted. The sump will be triple rinsed in accordance with WAC 173-303-160(2)(b) if the contents include acutely hazardous waste (WAC 173-303-040) or toxic extremely hazardous waste (WAC 173-303-100). Pesticides are not expected to enter this system (Chapter 4.0, §4.1.5).~~

If an alarm activates during inspections, an operator responds immediately and implements appropriate actions.

If an inspection identifies equipment that is missing, damaged, or not operating properly, the operator records the problem on a deficiency log in the 242-A Evaporator control room. Repair work is prioritized by 242-A Evaporator ~~facility~~ management to mitigate health and environmental risks.

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 Improper use of the word "facility". Does not match definition in Hanford Facility RCRA Permit. The pump room sump is already described in Chapter 4.0.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.3.1 Equipment Requirements

6.3.1 Equipment Requirements

The following sections describe the internal and external communications and emergency equipment located at the 242-A Evaporator that can be activated by the 242-A Evaporator Building Emergency Director (BED). Hanford Facility-wide equipment is identified in Permit Attachment 4, *Hanford Emergency Management Plan* (DOE/RL-94-02).

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 Acronym spelled out.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14
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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.3.2 Internal Communications

6.3.2 Internal Communications

The 242-A Evaporator is equipped with internal communication systems to provide immediate emergency instruction to ~~facility~~ personnel. The onsite communication systems at the 242-A Evaporator include telephones, hand-held two-way radios, a public address system, and alarm systems. The telephone and radio systems provide for internal and external communication. Alarm systems allow ~~facility~~ personnel to appropriately respond to various emergencies, including building evacuations, take cover events, fires and/or explosions. The locations of telephones, public address systems, and alarms are given in the Chapter 7.0, Contingency Plan.

Immediate emergency instruction to personnel is provided by a public address system using speaker horns and speakers located throughout the 242-A and 242-AB Buildings and outside.

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 Although "personnel" and "Facility personnel" are synonymous based on definition of "personnel" in WAC 173-303-040, the term is easier to find.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14
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 downgraded to a Class [1], if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.3.2.2 Emergency Equipment

6.3.2.2 Emergency Equipment

Emergency equipment is available throughout the 242-A Building. The locations of emergency equipment ~~telephones, public address systems, and alarms~~ are provided ~~given~~ in Chapter 7.0, Contingency Plan.

Major fire damage is unlikely at the 242-A Evaporator because of the concrete construction and because the amount of combustible material is minimized. Temperature activated water sprinkler systems, emergency lights, fire alarms pull boxes, and fire extinguishers are located throughout the 242-A Evaporator~~facility~~. The 242-A Evaporator relies primarily on the Hanford Fire Department to respond to fires and other emergencies as described in Permit Attachment 4, *Hanford Emergency Management Plan*, (DOE/RL-94-02). The Hanford Fire Department is capable of providing rapid response to fires within the 200 East Area.

Safety showers are used to decontaminate personnel.~~located in the areas where personnel are most likely to have direct exposure of hazardous materials: in the AMU room and on the first and fourth floors of the condenser room.~~ Water for these devices is supplied from the sanitary water system.

Respirators are located in the PPE storage room near the entryway to the condenser room. Other PPE, such as hazardous material protective gear and special work procedure clothing, are located in cabinets in the survey area. If required, PPE is donned before entry into the rooms containing mixed waste. The level of personal protective equipment required depends on the level of contamination in the area being entered and the activity being performed.

~~A s~~Spill ~~control~~ kits are used to provide spill control measures ~~is located in a cabinet near the door to the PPE storage room~~. An inventory of the equipment in the spill kit is included inside the cabinet. The spill kit ~~cabinet door~~ seal is checked monthly to ensure the spill kit has not been used. If used, the spill kit will be replenished by the next monthly inspection and a new seal applied. If items are unavailable, then this will be noted on the inspection sheet and the kit will be left unsealed until inventory items are replenished.~~The kit inventory is inspected annually.~~

The 242 A Evaporator operating personnel are trained in the use of emergency equipment (Chapter 8.0).

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 Reference to chapter 7.0 revised to be generic on equipment. The word "facility" did not match the definition in the Hanford Facility RCRA Permit. Modified fifth paragraph to clarify how spill kits are inspected.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/25/14
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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
242-A Evaporator	**Part III, Operating Unit 4**

Description of Modification:
6.3.2.3 Water for Fire Control

6.3.2.3 Water for Fire Control

Water for fire protection is supplied from the 200 East Area raw water system. ~~Columbia River water is supplied to the fire control system from the 282-E Water Supply Reservoir.~~ The water distribution system is sized to provide adequate volume and pressure to supply fire fighting needs under normal and emergency conditions. A fire hydrant is located in the immediate proximity of the 242-A Building.

In the event that the sprinkler system at the 242-A Evaporator does not put out a fire, or the sprinkler system is damaged during an accident, the Hanford Fire Department fire station will provide equipment as described in Permit Attachment 4, *Hanford Emergency Management Plan (DOE/RL-94-02)*.

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 source of water can change.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/29/14 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 downgraded to a Class [1], if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.3.3 Spacing Requirement

6.3.3 Spacing Requirement

Sufficient space is maintained on the exterior of the 242-A Evaporator to allow access of personnel and equipment responding to fires, spills, or other emergencies. Unobstructed fire lanes run from Fourth Street and Canton Avenue to the 242-A Building main entrance to allow emergency vehicle access to the main entrance and the nearby fire hydrant.

The 242-A Evaporator ~~Building~~ interior space is designed to allow access by emergency response personnel while maintaining barriers to contain releases of gaseous or liquid waste and hazardous substances as defined in WAC 173-303-040, ~~and hazardous material~~. Exit (egress) paths in the rooms containing dangerous waste are checked daily to ensure the walkways have not been obstructed.

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 Technical edit on facility name and addition of WAC citation.

Modification Approved: ☑ Yes ☐ No (state reason for denial) Reason for denial:	Reviewed by Ecology: S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.4.1 Loading and Unloading Operations

6.4.1 Loading and Unloading Operations

Loading and unloading operations, as described in WAC 173-303-395(4), do not take place at the 242-A Evaporator. Liquid mixed waste is transferred only by pipeline ~~The feed transfer and slurry lines between the 242-A Evaporator and AW Tank Farm are constructed of carbon steel piping with secondary containment and leak detection in a pipe-within-a-pipe arrangement. Although the regulations exempt systems that serve as secondary containment from requiring secondary containment, two of the drain lines from the 242-A Evaporator to AW Tank Farm also have outer encasement piping and leak detection (refer to Chapter 4.0, §4.1.4, for information on these lines).~~

~~Waste transfers within the 242-A Building are contained by the secondary containment walls, floors and drains (refer to Chapter 4.0, §4.1.4, for information on secondary containment at the 242-A Evaporator).~~

~~Mixed waste storage containers are not loaded or unloaded at the 242-A Evaporator. Unloading operations occur when equipment contaminated with mixed waste exits the facility. Such materials are fully sealed in plastic with absorbent material to absorb any free liquid present. Because of these requirements, the likelihood of a spill outside the 242-A Building during this operation is extremely low.~~

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: 4.d.

Enter wording of WAC 173-303-830, Appendix I Modification citation: Administrative and informational changes for replacing section with the appropriate sentence to tie the requirement into WAC 173-303-395(4).

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14
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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.4.2 Runoff

6.4.2 Runoff

Liquid waste handling at the 242-A Evaporator occurs within tank systems with secondary containment. Rooms containing mixed waste have drains that route to either the pump room sump or the feed tank, 241-AW-102. The pump room sump overflows to the feed tank as well. Therefore, run-off from a major leak, such as a break in a large water line within the 242-A Building, would be contained within the 242-A Evaporator ~~facility~~ or drained to the feed tank (refer to Chapter 4.0~~, §4.1.4~~ for information on secondary containment and drain systems).

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 word "facility" did not match the definition in the Hanford Facility RCRA Permit. Avoid referencing specific sections.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class [1], if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.4.3 Water Supplies

6.4.3 Water Supplies

Raw and sanitary ~~Columbia River~~ water are supplied to the 242-A Evaporator via separate underground lines ~~from the 282-E Water Supply Reservoir~~. Raw water is filtered to prevent organisms and other debris from clogging valves, fire hydrants, and other equipment. Sanitary water is filtered and treated before distribution through a piping system separate from the raw water system.

The raw water supply to the 242-A Evaporator enters the 242-A-81 Water Service Building, passing through a strainer and backflow preventer before entering the facility. The backflow preventer ensures contaminated water cannot flow back into the raw water system. A second backflow preventer is installed in the 242-A ~~Building~~ Evaporator on the raw water supply line connecting with the condensate recycle line. This system allows either raw water or process condensate to be used for the pump seal water and deentrainment pad spray water without risk of contamination of the raw water system.

The sanitary water system provides water to the lunchroom, drinking fountains, men's and women's change rooms, safety showers, and supply ventilation system air washers. There are no connections between sanitary water and any system or piping containing mixed waste.

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 source of water can change. The word "facility" did not match the definition in the Hanford Facility RCRA Permit.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class [1], if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.4.4 Equipment and Power Failures

6.4.4 Equipment and Power Failures

.....

The 242-A Evaporator is designed to mitigate the effects of failure of a major piece of equipment. In general, the evaporator process can be shut down and the vapor liquid separator gravity drained to the feed tank, 241-AW-102, in the event of equipment failure. The process condensate collection tank (TK-C-100), is designed to overflow to feed tank 241-AW-102. This mitigates failure of the process condensate pump used to transfer the process condensate to LERF.

Response to loss of utilities is ~~equipment and power failures are~~ discussed in more detail in Chapter 7.0, Contingency Plan.

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 Technical editing on equipment name and section title.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler Date 9/24/14

[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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
242-A Evaporator	**Part III, Operating Unit 4**

Description of Modification:
6.4.5 Personnel Exposure

6.4.5 Personnel Exposure

~~Facility d~~Design, administrative controls, and personal protective equipment are used at the 242-A Evaporator to prevent undue exposure of personnel to mixed waste ~~and other hazardous materials~~.

The following features were incorporated into the 242-A Evaporator design to minimize personnel exposure.

- The 242-A Evaporator ~~facility~~ is designed for remote operation of equipment containing highly radioactive solutions such as waste feed and slurry. These solutions usually are present only in the pump room and evaporator room, which are heavily shielded and routinely are not entered by operating personnel.
- The 242-A Building ventilation system is designed to provide air flow from uncontaminated zones to progressively more contaminated zones.
- Emergency lighting devices are located strategically throughout the 242-A ~~Building~~Evaporator.
- Eyewash stations and safety showers are located as identified in ~~rooms containing mixed waste or other hazardous materials that personnel routinely enter. For location of these, refer to~~ Chapter 7.0, Contingency Plan.
- ~~Continuous air monitors with audio and/or visual alarms to notify personnel of airborne radioactive contamination are provided in rooms that contain mixed waste and that routinely are entered.~~
- Methods for decontaminating vessels and equipment are available to reduce personnel exposure if entry for maintenance activity is required.
- Offices, control room, change rooms, and lunchroom are situated to minimize casual exposure of personnel.

All operations are conducted so employee exposure to mixed waste ~~and other hazardous materials~~ are maintained as low as reasonably achievable (ALARA). Exposures are minimized by engineering or administrative controls with protective gear used where such controls are not practical. Before the start of any operation that might expose personnel to the risk of injury or contamination, a review of the operation is performed to ensure the nature of hazards that might be encountered are considered and that appropriate protective gear is selected. Administrative procedures dictate the level of protective clothing worn and depend on the location within the 242-A ~~Building~~ Evaporator and the nature of the activity being performed. ~~Personnel are trained to wear personal protective equipment in accordance with approved work procedures.~~

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 Technical edits on facility names and acronyms; including deletion of the word "facility" to better align with the definition in the Hanford Facility RCRA Permit. The fifth bullet was removed because releases when detected would follow the SWIM process in Section Update section to be consistent with Chapter 7.0. "Other hazardous materials" is being removed as it is a Department of Transportation term. The last sentence was removed because the work procedures address selection of PPE, not how to don the PPE.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
6.5.1 Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste

6.5.1 Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste

Administrative processes ~~procedures~~ are designed to prevent the ignition or reaction of waste at the 242-A Evaporator. The precautions include the following.

- Analysis is performed on candidate waste in the DST System to check that there are no exothermic reactions when the waste is heated and that there will be no adverse ~~a~~effects due to mixing the contents of different waste tanks in the feed tank and evaporator vessel (refer to Chapter 3.0, for details on waste analysis).
- Sample analysis of the candidate waste in the DST System includes a surface sample to identify the presence of a separable organic phase that might be ignitable. If a separate organic phase is detected, the waste solution level in the feed tank is maintained above 2.54 meters (8.33 feet) to prevent transfer of the organic phase to the 242-A Evaporator.
- The condensate collection tank~~,~~ (TK-C-100), is equipped with instrumentation to detect the presence of a separable organic phase. If a separate organic phase is detected, the tank is allowed to overflow, transferring the organic phase to the feed tank, 241-AW-102.
- The condensate collection tank~~,~~ (TK-C-100) is overflowed to the DST System during each campaign to prevent the possibility of accumulating immiscible organics in the condensate waste tank.
- The vapor liquid separator and the condensate tank are drained and flushed before any welding is performed.
- ~~Administrative safety controls have been established to control the use and quantities of combustibles materials, fuels, and gases. Hot work activities such as cutting, welding, and brazing are administratively controlled as part of the industrial safety program.~~

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 Technical edits including correct naming of tank components. Industrial safety program is implemented outside of this Permit. Consistency in adding English units.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
242-A Evaporator	**Part III, Operating Unit 4**

Description of Modification:

Table 6-1. Visual Inspection Schedule for Tanks, Piping, and Rooms

Table 6.1. Visual Inspection Schedule for Tanks, Piping, and Rooms

Item	Inspection	Frequency[1]
	Tank and Piping Inspection	
Condensate tank and piping	• Inspect piping for leaks or corrosion	Daily
	Room Inspections	
AMU ~~room~~Mezzanine	• Inspect piping for leaks or corrosion • Inspect floor for spills or damage • Inspect for equipment malfunctions • Inspect for housekeeping	Daily[2]
Pump room	• Inspect piping for leaks or corrosion • Inspect floor for spills or damage • Inspect for equipment malfunctions • Inspect for housekeeping • Monitor pump room sump for overflow	Daily[3]
Loadout and ~~H~~hot equipment storage room	• Inspect piping for leaks or corrosion • Monitor pump room sump and inspect floor for spills or damage • Inspect for housekeeping	Daily[3]
~~Load-out /~~ Loading room	• Inspect for housekeeping • Monitor drains	Daily[2,3,4]
Condenser room	• Inspect tanks and piping for leaks or corrosion • Inspect floors for spills or damage • Inspect for equipment malfunctions • Inspect for housekeeping	Daily
IX column [5] room	• Inspect piping for leaks or corrosion • Inspect floor for spills or damage	Daily[6]

[1] Continuously: an operator must be present in the control room to respond to alarms when processing waste
Daily: at least every 24 hours
[2] When dangerous waste is present
[3] Use viewing window in AMU room to perform inspection
[4] Denote use of contamination control curtain when extended
[5] IX column was removed in 2003. The remaining piping has been drained and isolated.
[6] Surveillance is only required if the piping is returned to service and dangerous waste is reintroduced to the piping

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 Technical edit on room name.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class '1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
242-A Evaporator	**Part III, Operating Unit 4**

Description of Modification:
Table 6.2. Inspection Schedule of Safety, Security, and Emergency Equipment

Table 6.2. Inspection Schedule of Safety, Security, and Emergency Equipment

Item	Inspection	Frequency[1]
Security		
Building external doors	Verify external doors are closed and locked[2]	Daily
Posted warning signs	Verify signs are present, legible, and visible at 25 feet (7.6 meters)	Weekly
Communications		
Radios	Verify radios are operable and batteries are charged	Monthly
Telephones	Verify telephones are operable	Quarterly
Intercom/public address system	Verify systems are working properly	Quarterly
Emergency Equipment		
Safety showers/ eyewash station	Verify operability	Monthly
Emergency lighting	Verify operability	Monthly
Fire extinguishers	Verify fire extinguishers are in their proper location	Monthly
Spill ~~response~~ kit	~~Verify spill kit is present~~Verify the spill kit is present and that the seal is intact.	Monthly
Personal protective clothing	Verify availability	Weekly
Respirators	Verify availability and shelf life	Monthly

[1] Continuously: an operator must be present in the control room to respond to alarms
Daily: at least every 24 hours
Weekly: at least every 7 days
Monthly: at least every 31 days
Quarterly: at least every 124 days
Annually: at least every 365 days

[2] Entrances to office areas are allowed to be unlocked

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 Consistency in adding English units. Consistency with term used in the contingency plan table 7.4.5. Consistent with text in Section 6.3.2.2.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Forms

Part III, Operating Unit 4

242-A Evaporator

Index

Submitted by Co-Operator:

MARTIN ELLIS for DKS 9/24/14

Date

Reviewed by ORP Program Office:

9/24/14

Date

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
Hanford Facility RCRA Permit III.4:

PART III, OPERATING UNIT 4 UNIT-SPECIFIC CONDITIONS
242-A Evaporator

UNIT DESCRIPTION

The 242-A Evaporator is a mixed.....

III.4.A COMPLIANCE WITH UNIT SPECIFIC PERMIT CONDITIONS

The Permittees shall comply with.....

CHAPTERS SPECIFIC TO OPERATING UNIT GROUP 4:

Chapter 1.0	Part A Form, dated March 31, 2014
Chapter 3.0	Waste Analysis Plan, dated March 31, 2014
Chapter 4.0	Process Information, dated September 30, 2013
Appendix 4B	Tank Integrity Assessment, dated December 31, 2002
Chapter 5.0	Groundwater Monitoring, dated (not applicable)
Chapter 6.0	Procedure to Prevent Hazards, dated January 10, 2014
Chapter 7.0	Contingency Plan, dated September 30, 2014~~September 30, 2013~~
Chapter 8.0	Personnel Training, dated September 30, 2013
Chapter 11.0	Closure, dated September 30, 2013

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 is needed to update chapter revision date.

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

Reviewed by Ecology:
S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class '1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
7.3 IMPLEMENTATION OF THE CONTINGENCY PLAN

7.3 IMPLEMENTATION OF THE CONTINGENCY PLAN

The BED ensures that trained personnel identify the character, source, amount, and areal extent of the release, fire, or explosion to the extent possible. ….

As soon as possible, after stabilizing event conditions, the BED shall determine, in consultation with the site contractor ~~Permittee~~ environmental single point-of-contact, if notification to Ecology is needed to meet WAC 173 303-360(2)(d) reporting requirements.….

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 Terminology update to reflect consistency with other operating units (e.g., LERF/ETF).

This is not a change in process, but is only a change in reference for consistency with other operating units. Text updated in second paragraph.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:

7.3.1 Protective Actions Responses

7.3.1 Protective Actions Responses

Protective action responses are discussed in the following sections 7.3.1.1 and 7.3.1.2. The steps identified in the following description of actions do not have to be performed in sequence because of the unanticipated sequence of incident events.

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 Specified applicable subsections.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14

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 downgraded to a Class [1], if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
7.3.2.5 Hazardous Material, Dangerous and/or Mixed Waste Spill

7.3.2.5 Hazardous Material, Dangerous and/or Mixed Waste Spill

Spills of hazardous materials, dangerous or mixed waste can result from many sources including process leaks, container spills or leaks, damaged packages or shipments, or personnel error. Spills of mixed waste are complicated by the need to deal with the extra hazards posed by the presence of radioactive materials. Abnormal radiation actions also may be implemented if conditions are warranted. Timeframes for specific responses may be affected by radiological conditions. .....

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 Added clarifying text to simplify description of a spill. Added the last two sentences to replace text in Section 7.3.2.6 and to note that radiological conditions may affect mitigation efforts.

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

Reviewed by Ecology:
S. L. Dahl-Crumpler 9/23/14
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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
7.3.2.6 Radiological Material Release

~~**7.3.2.6 Radiological Material Release**~~

~~At a minimum, actions described in Section 7.3.2.5 are taken. Abnormal radiation actions also may be implemented if conditions are warranted.~~

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 Section deleted. The text from Section 7.3.2.6 was moved to the end of Section 7.3.2.5.

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

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class [1], if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
242-A Evaporator	**Part III, Operating Unit 4**

Description of Modification:
7.3.2.7 Criticality

~~**7.3.2.7 Criticality**~~

~~A criticality is not a credible accident at the 242-A Evaporator.~~

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
Section 7.3.2.7 is not applicable to the 242-A Evaporator RCRA Permit.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler — Date 9/23/14

[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 downgraded to a Class [1], if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
7.4.2 Portable Emergency Equipment

7.4.2 Portable Emergency Equipment

Type	Location	Capabilities
General purpose fire extinguishers	Throughout the 242-A Evaporator facility	Fire suppression for class A, B, C, fires
~~Halon~~ Halotron fire extinguishers	Two in control room	Suppress electrical fires

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.b.
Enter wording of WAC 173-303-830, Appendix I Modification citation: Replacement with functionally equivalent equipment, upgrade, or relocate emergency equipment listed.
Update of fire extinguisher type. Executive Order 13423 precludes purchase of ozone depleting substances, including Halon fire extinguishers. EPA guidance (http://www.epa.gov/ozone/snap/fire/halonreps.html) lists the Halotron fire extinguisher as an acceptable substitute for the Halon fire extinguisher.

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

Reviewed by Ecology:
S. L. Dahl-Crumpler 9/23/14
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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
242-A Evaporator	**Part III, Operating Unit 4**

Description of Modification:
7.4.3 Communications Equipment/Warning Systems

7.4.3 Communications Equipment/Warning Systems

Type	Location	Capability
Fire alarms	Located throughout the facility in halls, corridors, and locker rooms	Audible throughout the 242-A Evaporator Building
Hanford Site Area ~~s~~Siren ~~(Permit Attachment 4, DOE/RL-94-02, §11.3)~~	200 East Aarea utility poles the nearest one is located along 4th street where it bends at 275EA to the southwest of 242-A Evaporator	Provides warning to personnel to take cover or evacuate. This siren is identified in DOE/RL-94-02, Section 5.2.5.
Operations process alarms from MCS or hard wired alarm panels	242-A Evaporator control room	Audible in the 242-A Evaporator control room
Public address system (PAX)	Located throughout the 242-A Evaporator Building (except in pump and evaporator rooms)	Provides communications and public address capabilities
Portable Radios	242-A control room	Communication to the 242-A control room
Telephone	242-A control room, office areas, AMU room, and condenser room.	Internal and external communications. Allows notification of outside resources (HFD, Hanford Patrol, etc.)

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: 4.d.
Enter wording of WAC 173-303-830, Appendix I Modification citation: Administrative and informational changes for correction of where the Hanford Site Area Siren is described in DOE/RL-94-02.

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

Reviewed by Ecology:
S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
7.4.5 Spill Control and Containment Supplies

7.4.5 Spill Control and Containment Supplies

Type	Location	Capability
Spill kit	Survey area next to personnel protective equipment storage room (exterior wall to Aqueous Make-up ~~AMU~~ room), wall mounted	Provides spill control materials

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
Spell out acronym.

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

Reviewed by Ecology:
S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
7.4.6 Incident Command Post

7.4.6 Incident Command Post

If the ICP is activated, the BED will notify appropriate personnel of its location by either the public address system, radios, or telephones. ~~The ICPs for 242-A Evaporator emergencies are the 242-A Evaporator or the Base Operations Shift Office.~~ Emergency resource materials are stored at each location. The IC could activate the Hanford Fire Department Mobile Command Unit if necessary.

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

Enter relevant WAC 173-303-830, Appendix I Modification citation number: 4.d.

Enter wording of WAC 173-303-830, Appendix I Modification citation: Administrative and informational changes for the update of information allows operations to have flexibility in ICP locations to minimize the hazard to personnel. The location will depend upon the location and hazard of the event.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class 1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **242-A Evaporator**	Permit Part **Part III, Operating Unit 4**

Description of Modification:
7.6 PLAN LOCATION AND AMENDMENTS

7.6 PLAN LOCATION AND AMENDMENTS

Copies of this plan are maintained at the following locations:

- 242-A Evaporator Control Room
- ~~Base Operations~~ Central Shift Office (274-AW~~M0-268~~)

This plan will be reviewed and immediately amended as necessary, in accordance with Permit Attachment 4, *Hanford Emergency Management Plan* (DOE/RL-94-02, Section 14.3.1.1).

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 Updated work location. Updated name of Central Shift Office.

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

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/23/14 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 downgraded to a Class [1], if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
242-A Evaporator	**Part III, Operating Unit 4**

Description of Modification:
7.7 FACILITY/BUILDING EMERGENCY RESPONSE ORGANIZATION

7.7 FACILITY/BUILDING EMERGENCY RESPONSE ORGANIZATION

242-A Evaporator Building Emergency Directors			
Title		**Work Location**	**Work Phone**
Primary	Central Shift Manager	200 Areas. Primary location is the ~~Base Operations~~Central Shift Office	373-2689
Alternate	Alternate BED	200 Areas	373-2689

Names and home telephone numbers of the BEDs are available from the POC (373-3800) in accordance with Permit Condition II.A.4.

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 Updated work location. Updated name of Central Shift Office.

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

Reviewed by Ecology:
S. L. Dahl-Crumpler 9/23/14
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 downgraded to a Class 1, if appropriate.

Remove and Replace the Following Sections:

Remove Unit-Specific Conditions, dated March 31, 2014, and replace with Unit-Specific Conditions, dated September 30, 2014.

Remove Chapter 6.0, dated January 10, 2014, and replace with Chapter 6.0, dated September 30, 2014.

Remove Chapter 7.0, dated September 30, 2013, and replace with Chapter 7.0, dated September 30, 2014.

PART III, OPERATING UNIT 4 UNIT-SPECIFIC CONDITIONS

242-A Evaporator

UNIT DESCRIPTION

The 242-A Evaporator is a mixed waste treatment and storage unit consisting of a conventional forced-circulation, vacuum evaporation system to concentrate mixed-waste solutions located in the 200 East Area.

This document sets forth the operating conditions for the 242-A Evaporator.

III.4.A COMPLIANCE WITH UNIT SPECIFIC PERMIT CONDITIONS

The Permittees shall comply with all requirements set forth in the Hanford Facility RCRA Permit (Permit) as specified in Permit Attachment 9, Permit Applicability Matrix, including all approved modifications. All chapters, subsections, figures, tables, and appendices included in the following unit-specific Permit Conditions are enforceable in their entirety.

In the event that the Part III-Unit-Specific Conditions for Operating Unit 4, 242-A Evaporator conflict with the Part I-Standard Conditions and/or Part II-General Facility Conditions of the Permit, the unit-specific conditions for Operating Unit 4, 242-A Evaporator prevail.

CHAPTERS SPECIFIC TO OPERATING UNIT GROUP 4:

Chapter 1.0	Part A Form, dated March 31, 2014
Chapter 3.0	Waste Analysis Plan, dated March 31, 2014
Chapter 4.0	Process Information, dated September 30, 2013
Appendix 4B	Tank Integrity Assessment, dated December 31, 2002
Chapter 5.0	Groundwater Monitoring, dated (not applicable)
Chapter 6.0	Procedures to Prevent Hazards, dated September 30, 2014
Chapter 7.0	Contingency Plan, dated September 30, 2014
Chapter 8.0	Personnel Training, dated September 30, 2013
Chapter 11.0	Closure, dated September 30, 2013

III.4.B COMPLIANCE WITH UNIT-SPECIFIC PERMIT CONDITIONS

III.4.B.1 Portions of Permit Attachment 4 (DOE/RL-94-02) that are not made enforceable by inclusion in the applicability matrix for that document are not made enforceable by reference in this document.

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Chapter 6.0 Procedures to Prevent Hazards

Tables

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6.0 PROCEDURES TO PREVENT HAZARDS

This chapter discusses security, inspection schedules, preparedness and prevention requirements, preventive procedures, structures, and equipment, and prevention of reaction of ignitable, reactive, and incompatible waste for the 242-A Evaporator.

6.1 SECURITY

Refer to Permit Attachment 3, Security for compliance with WAC 173-303-310(2)(b) and (c). The 242-A Evaporator is located within the 200 Area of the Hanford Facility and access is controlled by physical barriers, which complies with WAC 173-303-310(2)(c). To meet the requirements of WAC 173-303-310(2)(a), signs stating *Danger-Unauthorized Personnel Keep Out*, or equivalent language, legible at 25 feet or more, are posted at each entrance to the active portion or each entrance that will lead to the active portion. The Permittees will post signs on or near the outside doors to the 242-A Evaporator.

6.1.1 Waiver

A waiver of security procedures and equipment requirements is not requested for the 242-A Evaporator. Therefore, the waiver requirements outlined in 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 242-A Evaporator. The purpose of inspections is to identify situations that might cause or lead to a release of mixed waste that could pose a threat to human health and the environment. Abnormal conditions identified by an inspection must be corrected on a schedule that prevents hazards to the public and environment.

6.2.1 General Inspection Requirements

This section provides an overview of inspections performed at the 242-A Evaporator. A copy of the inspection plan is kept in the Hanford Facility Operating Record, 242-A Evaporator unit-specific portion. There are three general classes of inspections at the 242-A Evaporator:

- Monitoring of remote instrumentations and alarms are performed by operating personnel in the 242-A Evaporator control room using the MCS computer.
- Visual inspections of tanks and equipment are performed by operating personnel. Other inspections of 242-A Evaporator equipment are performed as noted in Table 6.1 through Table 6.4.
- Preventive maintenance of equipment and calibration of instruments are performed by maintenance personnel. A computerized tracking system is used to identify and schedule preventive maintenance and calibration activities.

Preventive maintenance and instrument calibrations on certain equipment might not be possible when the 242-A Evaporator is operating. Because of the limited duration of 242-A Evaporator campaigns, these activities are scheduled during outages between campaigns to avoid interference with operating activities. Per Condition II.O.3 inspection of high radiation areas will be addressed on a case-by-case basis.

6.2.1.1 Types of Problems

The 242-A Evaporator inspections include, but are not limited to, the following:

- Condition of tanks and ancillary equipment
- Condition of secondary containment
- Evidence of leaks or overflows from tanks, piping, or transfer lines
- Condition of security equipment

- Condition of safety, communications, and emergency equipment.

A schedule of inspections, including items to be inspected, problems to look for, frequency of inspections and responsible organization are provided in Tables 6.1 through 6.4.

6.2.1.2 Frequency of Inspections

The frequency of inspections is based on the significance of a failure of the equipment and on regulatory requirements, Hanford Site and industry standards, and experience of the nature and frequency of equipment failures.

- The frequency of inspections for the 242-A Evaporator is given in Tables 6.1 through 6.4. Examples of frequencies include:
- Daily (at least every 24 hours) - visual inspections of tanks, piping and secondary containment.
- Weekly (at least every 7 days) - visual inspections of personal protective equipment, exterior lighting, and posted warning signs.
- Monthly (at least every 31 days) - inspections of emergency sirens, fire extinguishers, safety showers, emergency lighting and the spill control kit.
- Annually (at least every 365 days) - instrumentation calibrations, cathodic protection system testing, fire inspections.

Leak detectors are functionally checked within 92 days of the start of a campaign and every 92 days thereafter until the campaign is over. The frequency of some alarm monitoring is continuous. This means an operator must be present in the control room to monitor alarm instruments that continuously check for conditions such as leaks and high sump levels. Continuous monitoring is only required when the 242-A Evaporator is processing waste

6.2.2 Tank System Inspections and Corrective Actions

This section discusses the inspections performed on the two tank systems at the 242-A Evaporator: the vapor liquid separator (C-A-1), and the condensate collection tank (TK-C-100). Inspections include secondary containment and leak and overfill prevention equipment.

6.2.2.1 Overfill Prevention

The vapor liquid separator (C-A-1), is equipped with instrumentation that alarms before the tank reaches a level where the tank could overflow or entrain liquid waste into the vacuum condenser system. The alarm annunciates in the control room allowing operating personnel to take immediate action to stop the vapor liquid separator from overfilling.

The condensate collection tank (TK-C-100), was designed with an overflow line that routes waste to the feed tank, 241-AW-102. This design prevents tank overflow to the condenser room.

6.2.2.2 Visual Inspections

Visual inspections of tanks and secondary containments are performed to check for leaks, signs of corrosion or damage, and malfunctioning equipment. The following rooms containing dangerous waste are inspected:

- Condenser room
- Pump room
- Loadout and hot equipment storage room

In addition, the AMU and Loading Room are inspected when dangerous waste is present in the room.

The vapor liquid separator (C-A-1) is located in the evaporator room, with a portion of the recirculation loop located in the pump room. Because of the high radiation dose in the evaporator room, visual

inspections cannot be performed. Leaks in the evaporator room drain to the pump room sump; monitoring of the pump room sump instrumentation is performed to determine if leaks have occurred. Visual inspection of the pump room and the loadout and hot equipment storage room is performed through the shielding windows in the AMU to constrain personnel radiological exposure to levels that are as low as reasonably achievable (ALARA).

6.2.2.3 Leak Detectors

The sample enclosures in the load out and hot equipment storage room have leak detectors for both the feed and slurry samplers. For information on these systems and their secondary containment, refer to Chapter 4.0.

During sampling or maintenance activities associated with the evaporator room, or loadout and pump room, hot equipment storage room, a radiological contamination control curtain may be extended over the load out room to reduce the likelihood of contaminants reaching the environment through the load out door. When extended, the contamination control curtain will limit visibility to the load-out and hot equipment storage room from the shielding window on the AMU mezzanine while completing inspections. When this is the case, inspection forms will denote that the containment curtain was extended. Leaks in the evaporator room, pump room, and the loadout and hot equipment storage room drain to the pump room sump. The sump high-level alarm serves as a leak detector for these rooms. For information on the rooms and their drain systems, refer to Chapter 4.0.

The PC-5000 transfer line may be continuously monitored during transfers by an electronic leak detection system (Chapter 4.0) or visually inspected at the encasement catch tank (TK-PC-101) in the LERF catch basin (242AL-43). The leak detection system alarms are monitored in the 242-A Evaporator Control Room on the Monitoring and Control System (Chapter 4.0). When necessary, visual inspections of the PC-5000 transfer line encasement are administratively controlled by the 242-A Evaporator Shift Manager and occur at a minimum once every 24 hours during waste water transfers through the PC-5000 transfer line to ensure compliance with WAC 173-303-640(4)(c)(iii). Visual inspection for leaks from the PC-5000 transfer line are performed by 242-A Evaporator Operations, by looking for signs of any liquid not attributed to rain/precipitation at the encasement catch tank (TK-PC-101). If any liquid is observed the 242-A Evaporator Shift Manager is notified to take corrective actions.

6.2.2.4 Alternative Leak Detection during Electrical/Ventilation Outages

As part of maintenance or system upgrades, the need to secure electrical power or ventilation to the 242-A Evaporator sometimes becomes necessary. This includes activities such as, but not limited to: cleaning and inspection of the motor control centers (MCCs) for distributing electrical power to the systems at the 242-A Evaporator, ventilation system maintenance and upgrades. Planned electrical or ventilation outages are performed during periods when Double Shell Tank System waste is not being processed.

During times when access is limited as a result of electrical or ventilation outages, performance of daily inspections specified in Table 6.1 may be impacted. When impacted, an alternative method of leak detection is implemented for the condenser room, and the inspections are suspended in the pump room, loadout and hot equipment storage room, and the loading room.

When impacted in the condenser room, a camera will be placed above the floor drain to detect the presence of leaks or spills. The process condensate collection tank (TK-C-100), located in the condenser room, is the only tank storing dangerous waste on a routine basis. It is not normal to allow personnel access into the condenser room during extended electrical or ventilation outages unless maintenance activities or upgrades require entry. If required, the camera and subsequent television monitor will be provided electrical power via an alternative source. Operators will complete their daily observations for leaks or spills using this method for the condenser room. Facility personnel will document the use of this alternative method in the Hanford Facility Operating Record, 242-A Evaporator unit specific portion.

For the pump room, loadout and hot equipment storage room, and the loading room, these rooms do not have the capability for a camera so that inspections are suspended during maintenance activities affecting

the electrical power supply to the overhead lighting. Performance of Table 6.1 daily inspections is not possible. Storage of mixed waste does not occur in these rooms because systems which manage mixed waste within the pump room and the loadout and hot equipment storage room are flushed and gravity drained to the extent possible after each campaign. Should any remaining liquid leak from primary containment; it is captured by the secondary containment system and routed to the pump room sump and ultimately to the 241-AW-102 DST System tank. Quantities of liquid sufficient to reach 241-AW-102 would cause a change in tank level. Facility personnel will document when inspections cannot be performed due to electrical outages in the Hanford Facility Operating Record, 242-A Evaporator unit specific portion.

The process described in the preceding paragraphs of this section may also be implemented when external events cause electrical or ventilation outages.

6.2.2.5 Cathodic Protection

Cathodic protection is not required for the equipment within the 242-A facility boundaries. The only portion of the system, which is underground, is the PC-5000 transfer line. The PC-5000 line is constructed of fiberglass.

6.2.2.6 Tank Assessments

The IARs were issued in 1998 and 2008. The frequency and nature of these assessments are discussed in Chapter 4.0.

6.2.3 Storage of Reactive and Ignitable Wastes

A Fire Protection Engineer performs annual fire inspections of the 242-A Evaporator. The assessment includes the date and time of the inspection, the name of the professional inspector, a notation of the observations made, and any remedial actions which were taken as a result of the inspection. The completed fire protection facility assessment is included in the operating record.

6.2.4 Air Emissions Control and Detection Inspections

The process vent at the 242-A Evaporator is subject to 40 CFR 264, Subpart AA, which requires organic emissions be limited to 1.4 kilograms per hour (3.1 pounds per hour), and 2.8 mega grams per year (6,173 pounds per year), or controls be installed to reduce organic emissions by 95 percent. Organic concentrations in the waste processed at the 242-A Evaporator are limited to ensure the values of 1.4 kilograms per hour (3.1 pounds per hour) and 2.8 mega grams per year (6,173 pounds per year) are not exceeded. Therefore, no emission control devices are installed on the 242-A Evaporator vessel ventilation system and no inspections are required (Chapter 4.0).

6.2.5 Inspection Logs

Visual inspections (refer to Tables 6.1-6.4) are performed using inspection log sheets (also called round sheets) that outline frequency, the components to inspect, operating conditions and ranges, and types of problems. Log sheets are kept in the 242-A Evaporator control room. Inspectors record the following information:

- Date and time of the visual inspection
- Printed name and signature of the person performing the inspection
- Notations of the observations made, including space for writing comments
- An account of spills or discharges in accordance with WAC 173-303-145.

Completed log sheets are reviewed and approved by the shift supervisor, collected, and stored for at least 5 years.

Maintenance inspections are performed as part of the maintenance job control system. After completion, the maintenance documentation is reviewed and signed.

6.2.6 Schedule for Remedial Action for Problems Revealed

If while performing a visual inspection (Table 6.1), a leak or spill is discovered, 242-A Evaporator management responds immediately per Chapter 7.0, Contingency Plan. Action is taken to stop the leak and determine the cause. The waste is removed from the secondary containment within 24 hours or in a timely manner that prevents harm to human health and the environment. The specific actions for the pump room sump are described in Chapter 4.0.

If an alarm activates during inspections, an operator responds immediately and implements appropriate actions.

If an inspection identifies equipment that is missing, damaged, or not operating properly, the operator records the problem on a deficiency log in the 242-A Evaporator control room. Repair work is prioritized by 242-A Evaporator management to mitigate health and environmental risks.

6.3 PREPAREDNESS AND PREVENTION REQUIREMENTS

The following sections document the preparedness and prevention measures taken at the 242-A Evaporator.

6.3.1 Equipment Requirements

The following sections describe the internal and external communications and emergency equipment located at the 242-A Evaporator that can be activated by the 242-A Evaporator Building Emergency Director (BED). Hanford Facility-wide equipment is identified in Permit Attachment 4, *Hanford Emergency Management Plan* (DOE/RL-94-02).

6.3.2 Internal Communications

The 242-A Evaporator is equipped with internal communication systems to provide immediate emergency instruction to personnel. The onsite communication systems at the 242-A Evaporator include telephones, hand-held two-way radios, a public address system, and alarm systems. The telephone and radio systems provide for internal and external communication. Alarm systems allow personnel to appropriately respond to various emergencies, including building evacuations, take cover events, fires and/or explosions. The locations of telephones, public address systems, and alarms are given in the Chapter 7.0, Contingency Plan.

Immediate emergency instruction to personnel is provided by a public address system using speaker horns and speakers located throughout the 242-A and 242-AB Buildings and outside.

6.3.2.1 External Communications

The 242-A Evaporator is equipped with devices for summoning emergency assistance from the Hanford Fire Department, the Hazardous Materials Response Team, and/or Hanford Patrol, as necessary. External communication to summon emergency assistance is made by using a telephone communication system, fire alarm pull boxes, or hand-held radio as described in Permit Attachment 4, *Hanford Emergency Management Plan*, (DOE/RL-94-02). These devices are provided throughout the 242-A Evaporator.

During certain periods, only one operator may be available within the 200 East plateau. This operator has access to external communication using telephones located throughout the building.

6.3.2.2 Emergency Equipment

Emergency equipment is available throughout the 242-A Building. The locations of emergency equipment are provided in Chapter 7.0, Contingency Plan.

Major fire damage is unlikely at the 242-A Evaporator because of the concrete construction and because the amount of combustible material is minimized. Temperature activated water sprinkler systems, emergency lights, fire alarms pull boxes, and fire extinguishers are located throughout the 242-A Evaporator. The 242-A Evaporator relies primarily on the Hanford Fire Department to respond to fires and other emergencies as described in Permit Attachment 4, *Hanford Emergency Management Plan*, (DOE/RL-94-02). The Hanford Fire Department is capable of providing rapid response to fires within the 200 East Area.

Safety showers are used to decontaminate personnel. Water for these devices is supplied from the sanitary water system.

Respirators are located in the PPE storage room near the entryway to the condenser room. Other PPE, such as hazardous material protective gear and special work procedure clothing, are located in cabinets in the survey area. If required, PPE is donned before entry into the rooms containing mixed waste. The level of personal protective equipment required depends on the level of contamination in the area being entered and the activity being performed.

Spill kit are used to provide spill control measures. An inventory of the equipment in the spill kit is included inside the cabinet. The spill kit seal is checked monthly to ensure the spill kit has not been used. If used, the spill kit will be replenished by the next monthly inspection and a new seal applied. If items are unavailable, then this will be noted on the inspection sheet and the kit will be left unsealed until inventory items are replenished.

The 242-A Evaporator operating personnel are trained in the use of emergency equipment (Chapter 8.0).

6.3.2.3 Water for Fire Control

Water for fire protection is supplied from the 200 East Area raw water system. The water distribution system is sized to provide adequate volume and pressure to supply fire fighting needs under normal and emergency conditions. A fire hydrant is located in the immediate proximity of the 242-A Building.

In the event that the sprinkler system at the 242-A Evaporator does not put out a fire, or the sprinkler system is damaged during an accident, the Hanford Fire Department fire station will provide equipment as described in Permit Attachment 4, *Hanford Emergency Management Plan (DOE/RL-94-02)*.

6.3.3 Spacing Requirement

Sufficient space is maintained on the exterior of the 242-A Evaporator to allow access of personnel and equipment responding to fires, spills, or other emergencies. Unobstructed fire lanes run from Fourth Street and Canton Avenue to the 242-A Building main entrance to allow emergency vehicle access to the main entrance and the nearby fire hydrant.

The 242-A Evaporator interior space is designed to allow access by emergency response personnel while maintaining barriers to contain releases of gaseous or liquid waste and hazardous substances as defined in WAC 173-303-040. Exit (egress) paths in the rooms containing dangerous waste are checked daily to ensure the walkways have not been obstructed.

6.4 PREVENTIVE PROCEDURES, STRUCTURES, AND EQUIPMENT

The following sections describe preventive procedures, structures, and equipment.

6.4.1 Loading and Unloading Operations

Loading and unloading operations, as described in WAC 173-303-395(4), do not take place at the 242-A Evaporator. Liquid mixed waste is transferred only by pipeline.

6.4.2 Runoff

Liquid waste handling at the 242-A Evaporator occurs within tank systems with secondary containment. Rooms containing mixed waste have drains that route to either the pump room sump or the feed tank, 241-AW-102. The pump room sump overflows to the feed tank as well. Therefore, run-off from a major leak, such as a break in a large water line within the 242-A Building, would be contained within the 242-A Evaporator or drained to the feed tank (refer to Chapter 4.0 for information on secondary containment and drain systems).

6.4.3 Water Supplies

Raw and sanitary water are supplied to the 242-A Evaporator via separate underground lines. Raw water is filtered to prevent organisms and other debris from clogging valves, fire hydrants, and other equipment. Sanitary water is filtered and treated before distribution through a piping system separate from the raw water system.

The raw water supply to the 242-A Evaporator enters the 242-A-81 Water Service Building, passing through a strainer and backflow preventer before entering the facility. The backflow preventer ensures contaminated water cannot flow back into the raw water system. A second backflow preventer is installed in the 242-A Evaporator on the raw water supply line connecting with the condensate recycle line. This system allows either raw water or process condensate to be used for the pump seal water and deentrainment pad spray water without risk of contamination of the raw water system.

The sanitary water system provides water to the lunchroom, drinking fountains, men's and women's change rooms, safety showers, and supply ventilation system air washers. There are no connections between sanitary water and any system or piping containing mixed waste.

6.4.4 Equipment and Power Failures

Backup power is provided by a diesel generator. The diesel motor starts automatically on loss of electrical power and has sufficient fuel to operate the generator, if needed, to safely shut down the evaporator process. An uninterruptible power supply system also is provided to allow continued operation of the MCS computer to ensure uninterrupted monitoring until the backup generator is fully on line.

The 242-A Evaporator is designed to mitigate the effects of failure of a major piece of equipment. In general, the evaporator process can be shut down and the vapor liquid separator gravity drained to the feed tank, 241-AW-102, in the event of equipment failure. The process condensate collection tank (TK-C-100), is designed to overflow to feed tank 241-AW-102. This mitigates failure of the process condensate pump used to transfer the process condensate to LERF.

Response to loss of utilities is discussed in more detail in Chapter 7.0, Contingency Plan.

6.4.5 Personnel Exposure

Design, administrative controls, and personal protective equipment are used at the 242-A Evaporator to prevent undue exposure of personnel to mixed waste.

The following features were incorporated into the 242-A Evaporator design to minimize personnel exposure.

- The 242-A Evaporator is designed for remote operation of equipment containing highly radioactive solutions such as waste feed and slurry. These solutions usually are present only in the pump room and evaporator room, which are heavily shielded and routinely are not entered by operating personnel.
- The 242-A Building ventilation system is designed to provide air flow from uncontaminated zones to progressively more contaminated zones.
- Emergency lighting devices are located strategically throughout the 242-A Evaporator.
- Eyewash stations and safety showers are located as identified in Chapter 7.0, Contingency Plan.
- Methods for decontaminating vessels and equipment are available to reduce personnel exposure if entry for maintenance activity is required.
- Offices, control room, change rooms, and lunchroom are situated to minimize casual exposure of personnel.

All operations are conducted so employee exposure to mixed waste are maintained as low as reasonably achievable (ALARA). Exposures are minimized by engineering or administrative controls with protective gear used where such controls are not practical. Before the start of any operation that might expose personnel to the risk of injury or contamination, a review of the operation is performed to ensure the nature of hazards that might be encountered are considered and that appropriate protective gear is selected. Administrative procedures dictate the level of protective clothing worn and depend on the location within the 242-A Evaporator and the nature of the activity being performed.

6.5 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, AND INCOMPATIBLE WASTE

The following sections describe prevention of reaction of ignitable, reactive, and incompatible waste.

6.5.1 Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste

Administrative processes are designed to prevent the ignition or reaction of waste at the 242-A Evaporator. The precautions include the following.

- Analysis is performed on candidate waste in the DST System to check that there are no exothermic reactions when the waste is heated and that there will be no adverse effects due to mixing the contents of different waste tanks in the feed tank and evaporator vessel (refer to Chapter 3.0, for details on waste analysis).
- Sample analysis of the candidate waste in the DST System includes a surface sample to identify the presence of a separable organic phase that might be ignitable. If a separate organic phase is detected, the waste solution level in the feed tank is maintained above 2.54 meters (8.33 feet) to prevent transfer of the organic phase to the 242-A Evaporator.
- The condensate collection tank (TK-C-100), is equipped with instrumentation to detect the presence of a separable organic phase. If a separate organic phase is detected, the tank is allowed to overflow, transferring the organic phase to the feed tank, 241-AW-102.
- The condensate collection tank (TK-C-100) is overflowed to the DST System during each campaign to prevent the possibility of accumulating immiscible organics in the condensate waste tank.
- The vapor liquid separator and the condensate tank are drained and flushed before any welding is performed.

6.5.2 Precautions for Handling Ignitable or Reactive Waste and Mixing of Incompatible Waste

Waste received at the 242-A Evaporator is protected from materials or conditions that might cause the waste to ignite or react. Much of the waste handling is done remotely to reduce the risk to operating personnel. For precautions taken to prevent the ignition or reaction of waste, refer to Section 6.5.1.

The constituents in the waste received at the 242-A Evaporator that are ignitable or reactive are not very volatile. Therefore, the evaporation process renders the waste that is evaporated (i.e., the process condensate) neither ignitable nor reactive.

Table 6.1. Visual Inspection Schedule for Tanks, Piping, and Rooms

Item	Inspection	Frequency[1]
Tank and Piping Inspection		
Condensate tank and piping	• Inspect piping for leaks or corrosion	Daily
Room Inspections		
AMU Mezzanine	• Inspect piping for leaks or corrosion • Inspect floor for spills or damage • Inspect for equipment malfunctions • Inspect for housekeeping	Daily[2]
Pump room	• Inspect piping for leaks or corrosion • Inspect floor for spills or damage • Inspect for equipment malfunctions • Inspect for housekeeping • Monitor pump room sump for overflow	Daily[3]
Loadout and hot equipment storage room	• Inspect piping for leaks or corrosion • Monitor pump room sump and inspect floor for spills or damage • Inspect for housekeeping	Daily[3]
Loading room	• Inspect for housekeeping • Monitor drains	Daily[2,3,4]
Condenser room	• Inspect tanks and piping for leaks or corrosion • Inspect floors for spills or damage • Inspect for equipment malfunctions • Inspect for housekeeping	Daily
IX column [5] room	• Inspect piping for leaks or corrosion • Inspect floor for spills or damage	Daily[6]

[1] Continuously: an operator must be present in the control room to respond to alarms when processing waste
Daily: at least every 24 hours
2 When dangerous waste is present
3 Use viewing window in AMU room to perform inspection
[4] Denote use of contamination control curtain when extended
[5] IX column was removed in 2003. The remaining piping has been drained and isolated.
[6] Surveillance is only required if the piping is returned to service and dangerous waste is reintroduced to the piping

Table 6.2. Inspection Schedule of Safety, Security, and Emergency Equipment

Item	Inspection	Frequency[1]
Security		
Building external doors	Verify external doors are closed and locked[2]	Daily
Posted warning signs	Verify signs are present, legible, and visible at 25 feet (7.6 meters)	Weekly
Communications		
Radios	Verify radios are operable and batteries are charged	Monthly
Telephones	Verify telephones are operable	Quarterly
Intercom/public address system	Verify systems are working properly	Quarterly
Emergency Equipment		
Safety showers/ eyewash station	Verify operability	Monthly
Emergency lighting	Verify operability	Monthly
Fire extinguishers	Verify fire extinguishers are in their proper location	Monthly
Spill kit	Verify the spill kit is present and that the seal is intact.	Monthly
Personal protective clothing	Verify availability	Weekly
Respirators	Verify availability and shelf life	Monthly

[1] Continuously: an operator must be present in the control room to respond to alarms
Daily: at least every 24 hours
Weekly: at least every 7 days
Monthly: at least every 31 days
Quarterly: at least every 124 days
Annually: at least every 365 days

[2] Entrances to office areas are allowed to be unlocked

Table 6.3. Inspection Schedule for Alarm Monitoring

Item	Inspection	Frequency[1]
Overfill Protection		
Vapor liquid separator: WFSH-CA11 WFSH-CA12	Monitor for vapor liquid separator high level. Surveillance required only when solution is in the vapor liquid separator.	Continuously
Leak Detection		
Sampler lines: LDS-SMPL1 LDS-SMPL2	Monitor feed and slurry sampler lines for leaks. Surveillance required only during feed or slurry sampling.	Continuously
Pump room sump: WFI-SUMP1	Monitor for leaks in the evaporator room, pump room, load out and hot equipment storage room and loading room. These rooms drain to the pump room sump. Surveillance required only when waste solution is present in the rooms listed.	Continuously

[1] Continuously: an operator must be present in the control room to respond to alarms.

Table 6.4. Inspection Schedule for Maintenance and Other Inspections

Item	Inspection	Frequency[1]
Instrumentation Functional Checks and Calibrations		
Leak detectors	Perform leak detector functional checks.	Within 92 days of campaign startup and every 92 days thereafter until the campaign is over
Vapor liquid separator high level alarms: WFSH-CA11 WFSH-CA12	Perform calibrations of loop instruments.	Annually
Pump room sump level: WFI-SUMP1	Perform calibrations of loop instruments.	Annually
Backup Electrical Equipment		
Diesel generator	Verify operability.	Monthly
Uninterruptible power supply	Verify output voltage and inspect battery for signs of damage or tampering.	Annually
Fire Systems		
Fire suppressant and notification systems (i.e., sprinkler system and fire alarm pull boxes)	Water flow alarm tests of the sprinkler system to ensure the operation of a single sprinkler head will transmit an alarm, and that any of the manual fire alarm boxes will properly transmit an alarm signal.	Annually
Visual inspection of the physical condition of the sprinkler system, testing, and calibration of smoke detectors, and testing of heat detectors	A visual inspection of the sprinkler system to ensure system integrity as well as the required testing and calibration of detectors to ensure functionality. A flow test at the sprinkler system is performed to ensure proper flow to the system riser.	Biennial
Fire inspection	Inspect areas where ignitable or reactive wastes are stored per WAC 173-303-395(d).	Annually

[1] Continuously: an operator must be present in the control room to respond to alarms.
Monthly: at least every 31 days
Annually: at least every 365 days
Biennial every 730 days

Chapter 7.0 Contingency Plan

Figure

Table

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7.0 CONTINGENCY PLAN

The applicable WAC 173-303 requirements for a contingency plan at 242-A Evaporator are satisfied in the following documents: portions of the Hanford Facility RCRA Permit (Permit) Attachment 4 *Hanford Emergency Management Plan* (DOE/RL-94-02) and this Chapter.

The unit-specific building emergency plan also serves to satisfy a broad range of other requirements [e.g., Occupational Safety and Health Administration standards (29 CFR 1910), *Toxic Substances Control Act of 1976* (40 CFR 761), and U.S. Department of Energy Orders]. Therefore, revisions made to portions of this unit-specific building emergency plan that are not governed by the requirements of WAC 173-303 will not be considered as a modification subject to WAC 173-303-830 or Permit Condition I.C.3.

Table 7.1 identifies the sections of the unit-specific building emergency plan written to meet WAC 173-303-350(3) contingency plan requirements identified in this Chapter. In addition, Section 12.0 of the unit-specific 242-A Evaporator building emergency plan is written to meet WAC173-303 requirements identifying where copies of the *Hanford Emergency Management Plan* (DOE/RL-94-02) and the building emergency plan are located and maintained on the Hanford Facility. Therefore, revisions to Section 12.0 of the building emergency plan and the portions identified in Table 7.1 are considered a modification subject to WAC 173-303-830 or Permit Condition I.C.3.

Table 7.1 Hanford Facility Documents Containing Contingency Plan Requirements of WAC 173-303-350(3)

Requirement	Permit Attachment 4 Hanford Emergency Management Plan (DOE/RL-94-02)	Building Emergency Plan[1] (HNF-IP-0263-242A)	Chapter 7.0
-350(3)(a) - A description of the actions which facility personnel must take to comply with this section and WAC 173-303-360	X[2] Section 1.3.4	X[2] Sections 7.1, 7.2 through 7.2.5, and 7.3[1] Sections 4.0, 8.2, 8.3, 8.4, and 11.0	X[2] Sections 7.3.1, 7.3.2, through 7.3.2.5, and 7.3.3[3] Sections 7.3, 7.3.4, 7.3.5, 7.3.6, and 7.5
-350(3)(b) - A description of the actions which shall 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(6), Manifest system, reasons for not accepting dangerous waste shipments	X[2] Section 1.3.4	X[2,4] Section 7.2.5.1	X[2,4] Section 7.3.2.5.1
-350(3)(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).	X 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		

Requirement	Permit Attachment 4 Hanford Emergency Management Plan (DOE/RL-94-02)	Building Emergency Plan[1] (HNF-IP-0263-242A)	Chapter 7.0
-350(3)(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.		X[1] Sections 3.1 and 13.0	X[5] Sections 7.2 and 7.7
-350(3)(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.		X Section 9.0	X Section 7.4
-350(3)(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.	X[6] Figure 7.3 and Table 5.1	X[7] Section 1.5	X[7] Section 7.1

An 'X' indicates requirement applies.

[1] Portions of Permit Attachment 4, *Hanford Emergency Management Plan* (DOE/RL-94-02) not enforceable through Appendix A of that document are not made enforceable by reference in the building emergency plan.

[2] Permit Attachment 4, *Hanford Emergency Management Plan* (DOE/RL-94-02) contains descriptions of actions relating to the Hanford Site Emergency Preparedness System. No additional descriptions of actions are required at the site level. If other credible scenarios exist or if emergency procedures at the unit are different, the description of actions contained in the building emergency plan will be used during an event by a building emergency director.

[3] Sections 7.1, 7.2 through 7.2.5, and 7.3 of the building emergency plan are those sections subject to the Class 2 "Changes in emergency procedures (i.e., spill or release response procedures)" described in WAC 173-303-830, Appendix I, Section B.6.a.

[4] This requirement only applies to TSD units that receive shipment of dangerous or mixed waste defined as offsite shipments in accordance with WAC 173-303.

[5] Emergency Coordinator names and home telephone numbers are maintained separate from any contingency plan document on file in accordance with Permit Condition II.A.4 and are updated, at a minimum, monthly.

6 The Hanford Facility (site wide) signals are provided in this document. No unit/building signal information is required unless unique devices are used at the unit/building.

7 An evacuation route for the TSD unit must be provided. Evacuation routes for occupied buildings surrounding the TSD unit are provided through information boards posted within buildings.

7.1 BUILDING EVACUATION ROUTING (BUILDING LAYOUT)

Figures 7.1 and 7.2 provide identification of the primary and secondary staging areas and a general layout of the 242-A Evaporator. Alternate evacuation routes will be used on a case-by-case basis, based on meteorological conditions at the time of the event.

7.2 BUILDING EMERGENCY DIRECTOR

Emergency response will be directed by the BED until the Incident Commander (IC) arrives. The IC and staff with supporting on call personnel fulfill the responsibilities of the Emergency Coordinator as discussed in WAC 173-303-360.

During events, facility personnel perform response duties under the direction of the BED. The Incident Command Post (ICP) is managed by either the senior Hanford Fire Department member present on the scene or senior Hanford Patrol member present on the scene (security events only). These individuals are designated as the IC and as such, have the authority to request and obtain any resources necessary for protecting people and the environment. The BED becomes a member of the ICP and functions under the direction of the IC. In this role, the BED continues to manage and direct facility operations.

A listing of BEDs by title, work location, and work telephone numbers is contained in Section 7.7. The BED is on the premises or is available through an "on call" list 24 hours a day. Names and home telephone numbers of the BEDs are available from the Patrol Operations Center (POC) in accordance with Permit Condition II.A.4.

7.3 IMPLEMENTATION OF THE CONTINGENCY PLAN

The BED 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 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

2.a 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

2.b The unplanned fire or explosion occurred at the 242-A Evaporator or transportation activity subject to RCRA contingency planning requirements,

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 shall determine, in consultation with the 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. Additional information is found in Permit Attachment 4, *Hanford Emergency Management Plan* (DOE/RL-94-02, Section 4.2).

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 is responsible for initiating any protective actions based on their best judgment of the incident.

The BED must assess each incident to determine the response necessary to protect the personnel, facility, and the environment. If assistance from Hanford Patrol, Hanford Fire Department, or ambulance units is required, the Hanford Emergency Response Number (911 from site office phones/373-0911 from cellular phones) must be used to contact the POC and request the desired assistance.

7.3.1 Protective Actions Responses

Protective action responses are discussed in the following sections 7.3.1.1 and 7.3.1.2. The steps identified in the following description of actions do not have to be performed in sequence because of the unanticipated sequence of incident events.

7.3.1.1 Evacuation

The objective of a facility evacuation order is to limit personnel exposure to hazardous materials or dangerous/mixed waste by increasing the distance between personnel and the hazard. The scope of the evacuation includes evacuation of the facility due to an event at the facility as well as evacuation of the facility in response to a site evacuation order. Evacuation is directed by the BED when conditions warrant and applies to all personnel not actively involved in the event response or in emergency plan related activities.

The BED initiates the evacuation by directing an announcement be made to evacuate along with the evacuation location over the public address system and facility radios. Personnel proceed to a predetermined staging area (shown in Figure 7.2), or other safe upwind location, as determined by the BED. The BED determines the operating configuration of the facility and identifies any additional protective actions to limit personnel exposure to the hazard.

Emergency organization personnel or assigned operations personnel conduct a sweep of occupied buildings to ensure that all personnel and visitors have evacuated. For an immediate evacuation, accountability is performed at the staging area. The BED assigns personnel as accountability aides and staging area managers with the responsibility to ensure that evacuation actions are taken at the 242-A Evaporator. All implementing actions executed by the aides/managers are directed by the emergency response procedures. When evacuation actions are complete, the aides/managers provide a status report to the BED. The BED provides status to the IC.

7.3.1.2 Take Cover

The objective of the take cover order is to limit personnel exposure to hazardous or dangerous/mixed waste when evacuation is inappropriate or not practical. Evacuation might not be practical or appropriate because of extreme weather conditions or the material release might limit the ability to evacuate safely personnel.

The BED initiates the take cover by directing an announcement be made over the public address system and facility radios, and, as conditions warrant, by activating the 200 Area take cover alarms by calling the POC using 911 from site office phones/373-0911 from cellular phones. Actions to complete a facility take cover order are directed by the emergency response procedure. Protective actions associated with operations include configuring, or shutting down, the ventilation systems. Determination of additional take cover actions is based on operating configuration, weather conditions, amount and duration of release, and other conditions, as applicable to the event and associated hazard. As a minimum, personnel exposure to the hazard is minimized. The BED assigns personnel as accountability aides with responsibility to ensure that take cover actions are taken at all occupied buildings at the 242-A Evaporator. When take cover actions are complete, the aides/managers provide the BED with a status report.

7.3.2 Response to Facility Operations Emergencies

Depending on the severity of the event, the BED reviews the site wide procedures and 242-A Evaporator emergency response procedure(s) and, as required, categorizes and/or classifies the event. If necessary, the BED initiates area protective actions and Hanford Site Emergency Response Organization activation. The steps identified in the following description of actions do not have to be performed in sequence because of the unanticipated sequence of incident events.

7.3.2.1 Loss of Utilities

A case-by-case evaluation is required for each event to determine loss of utility impacts. When a BED determines a loss of utility impact, actions are taken to ensure dangerous and/or mixed waste is being properly managed, to the extent possible given event circumstances. As necessary, the BED will stop operations and take appropriate actions until the utility is restored. If loss of utilities at the 242-A Evaporator results in a major process disruption/loss of plant control, notifications in Section 7.3.2.2 are performed.

7.3.2.2 Major Process Disruption/Loss of Plant Control

Upon loss of the MCS, the Shift Manager is notified while an attempt is made to return the MCS to service. If a dump of the vapor-liquid separator (C-A-1) vessel does occur, AW Tank Farm personnel are notified of impending over pressurization of DST system tank 241-AW-102, and all personnel in the AW Tank Farm evacuate to the change trailer. Non-essential personnel exit the 242-A Evaporator facility.

The system condition is assessed, and corrective actions are implemented. Operations are placed on recirculation by securing the slurry pump and waste feed to the plant. Facility shutdown is accomplished by performing manual, localized actions such as system isolation, equipment shutdown, etc.

7.3.2.3 Pressure Release

If mixed waste release occurs, perform actions identified in Section 7.3.2.5.

7.3.2.4 Fire and/or Explosion

In the event of a fire, the discoverer activates a fire alarm; calls 911 from site office phones/373-0911 from cellular phones or verifies that 911 has been called. Automatic initiation of a fire alarm (by the smoke detectors, sprinkler systems, and pull boxes) is also possible.

- Unless otherwise instructed, personnel shall evacuate the area/building by the nearest safe exit and proceed to the designated staging area for accountability.
- On actuation of the fire alarm, ONLY if time permits, personnel should shut down equipment, secure waste, and lock up classified materials (or hand carry them out). The alarm automatically signals the Hanford Fire Department.
- The BED proceeds directly to the ICP, obtains all necessary information pertaining to the incident, and sends a representative to meet Hanford Fire Department.
- The BED provides a formal turnover to the IC when the IC arrives at the ICP.
- The BED informs the Hanford Site Emergency Response Organization as to the extent of the emergency (including estimates of dangerous waste, mixed waste, or radioactive material quantities released to the environment).
- If operations are stopped in response to the fire, the BED ensures that systems are monitored for leaks, pressure buildup, gas generation, and ruptures.
- Hanford Fire Department firefighters extinguish the fire as necessary.

NOTE: Following a fire and/or explosion, WAC 173-303-640(7) will be addressed for the 242-A Evaporator regarding fitness for use.

7.3.2.5 Hazardous Material, Dangerous and/or Mixed Waste Spill

Spills of hazardous materials, dangerous or mixed waste can result from many sources including process leaks, container spills or leaks, damaged packages or shipments, or personnel error. Spills of mixed waste are complicated by the need to deal with the extra hazards posed by the presence of radioactive materials. Abnormal radiation actions also may be implemented if conditions are warranted. Timeframes for specific responses may be affected by radiological conditions.

- The discoverer notifies BED and initiates SWIMS response:
  - **S**tops work
  - **W**arns others in the vicinity
  - **I**solates the area
  - **M**inimizes the spill if possible
  - Requests the BED **S**ecure ventilation
- The BED determines if emergency conditions exist requiring response from the Hanford Fire Department based on classification of the spill and injured personnel, and evaluates need to perform additional protective actions.
- If the Hanford Fire Department resources are not needed, the spill is mitigated with resources identified in Section 7.4 and proper notifications are made.
- If the Hanford Fire Department resources are needed, the BED calls 911 from site office phones/373-0911 from cellular phones.
- The BED sends a representative to meet the Hanford Fire Department.
- The BED provides a formal turnover to the IC when the IC arrives at the ICP.
- The BED informs the Hanford Site Emergency Response Organization as to the extent of the emergency (including estimates of dangerous waste, mixed waste, or radioactive material quantities released to the environment).
- If operations are stopped in response to the spill, the BED ensures that systems are monitored for leaks, pressure buildup, gas generation, and ruptures.
- Hanford Fire Department stabilizes the spill.

NOTE: For response to leaks or spills and disposition of leaking or unfit-for-use tank systems, refer to WAC 173-303-640(7).

7.3.2.5.1 Damaged or Unacceptable Shipments

The 242-A Evaporator is designed to receive waste from the double-shell tank (DST) system through existing underground piping. The notifications required by WAC 173-303-360(2)(j) and the reporting requirements of WAC 173-303-640(7)(d)(i) may be made via telephone conference.

7.3.3 Prevention of Recurrence or Spread of Fires, Explosions, or Releases

The BED, as part of the incident command system, takes the steps necessary to ensure that a secondary release, fire, or explosion does not occur. The BED will take measures, where applicable, to stop processes and operations, collect and contain released wastes and remove or isolate containers. The BED shall also monitor for leaks, pressure buildups, gas generation, or ruptures in valves, pipes or other equipment, whenever this is appropriate.

7.3.4 Incident Recovery and Restart of Operations

A recovery plan is developed when necessary in accordance with Permit Attachment 4, *Hanford Emergency Management Plan* (DOE/RL-94-02, Section 9.2). A recovery plan is needed following an

event where further risk could be introduced to personnel, the 242-A Evaporator, or the environment through recovery action and/or to maximize the preservation of evidence.

If this plan was implemented according to Section 7.3, the Washington State Department of Ecology is notified before operations can resume. The Permit Attachment 4, *Hanford Emergency Management Plan* (DOE/RL-94-02, Section 5.1) discusses different reports to outside agencies. This notification is in addition to those required reports and includes the following statements:

- There are no incompatibility issues with the waste and released materials from the incident.
- All the equipment has been cleaned, fit for its intended use, and placed back into service.

The notification required by WAC 173-303-360(2)(j) and WAC 173-303-640(7)(d)(i) may be made via telephone conference. Additional information that Ecology requests regarding these restart conditions will be included in the required 15-day report identified in Section 7.5.

For emergencies not involving activation of the Hanford EOC, the BED ensures that conditions are restored to normal before operations are resumed. If the Hanford Site Emergency Response Organization was activated and the emergency phase is complete, a special recovery organization could be appointed at the discretion of RL to restore conditions to normal. This process is detailed in RL and contractor emergency procedures. The makeup of this organization depends on the extent of the damage and the effects. The onsite recovery organization will be appointed by the appropriate contractor's management.

7.3.5 Incompatible Waste

After an event, the BED or the onsite recovery organization ensures that no waste that might be incompatible with the released material is treated, stored, and/or disposed of until cleanup is completed. Cleanup actions are taken by 242-A Evaporator personnel or other assigned personnel. Permit Attachment 4, *Hanford Emergency Management Plan* (DOE/RL-94-02, Section 9.2.3), describes actions to be taken.

Waste from cleanup activities is designated and managed as newly generated waste. Perform as necessary, field checks for waste compatibility before storage. Incompatible wastes are not placed in the same container. Containers of waste are placed in storage areas appropriate for their compatibility class.

If incompatibility of waste was a factor in the incident, the BED or the onsite recovery organization ensures that the cause is corrected.

7.3.6 Post Emergency Equipment Maintenance and Decontamination

All equipment used during an incident is decontaminated (if practicable) or disposed of as spill debris. Decontaminated equipment is checked for proper operation before storage for subsequent use. Consumable and disposed materials are restocked. Fire extinguishers are recharged.

The BED ensures that all equipment is cleaned and fit for its intended use before operations are resumed. Depleted stocks of neutralizing and absorbing materials are replenished, self-contained breathing apparatus are cleaned, and refilled, protective clothing is cleaned or disposed of and restocked, etc.

7.4 EMERGENCY EQUIPMENT

Emergency resources and equipment for the 242-A Evaporator are presented in this section.

7.4.1 Fixed Emergency Equipment

Type	Location	Capability
Safety shower/eye wash station	1 - Aqueous makeup room -south side. Next to truck load in airlock and chemical storage tank 1 - Condenser room basement, SE corner 1 - Condenser room 4th floor	Assist in flushing chemicals/materials from body and/or eyes and face
Wet pipe sprinkler system	Located throughout the facility	Assist in the control of fire
Fire alarm pull boxes	Located throughout the facility	Activates the building fire alarm and notifies the HFD
Emergency lighting (lanterns)	Located throughout the facility	Provide 1 hour of temporary lighting
Back-up diesel generator	50 ft SE of the 242-A main entrance	Provide back-up power

7.4.2 Portable Emergency Equipment

Type	Location	Capabilities
General purpose fire extinguishers	Throughout the 242-A Evaporator facility	Fire suppression for class A, B, C, fires
Halotron fire extinguishers	Two in control room	Suppress electrical fires

7.4.3 Communications Equipment/Warning Systems

Type	Location	Capability
Fire alarms	Located throughout the facility in halls, corridors, and locker rooms	Audible throughout the 242-A Evaporator Building
Hanford Site Area Siren	200 East Area utility poles the nearest one is located along 4th street where it bends at 275EA to the southwest of 242-A Evaporator	Provides warning to personnel to take cover or evacuate. This siren is identified in DOE/RL-94-02, Section 5.2.5.
Operations process alarms from MCS or hard wired alarm panels	242-A Evaporator control room	Audible in the 242-A Evaporator control room
Public address system (PAX)	Located throughout the 242-A Evaporator Building (except in pump and evaporator rooms)	Provides communications and public address capabilities
Portable Radios	242-A control room	Communication to the 242-A control room
Telephone	242-A control room, office areas, AMU room, and condenser room.	Internal and external communications. Allows notification of outside resources (HFD, Hanford Patrol, etc.)

7.4.4 Personal Protective Equipment

Type	Location	Capability
Respirators	242-A respirator storage room	Filtered air for recovery of known hazards

7.4.5 Spill Control and Containment Supplies

Type	Location	Capability
Spill kit	Survey area next to personnel protective equipment storage room (exterior wall to Aqueous Make-up room), wall mounted	Provides spill control materials

7.4.6 Incident Command Post

If the ICP is activated, the BED will notify appropriate personnel of its location by either the public address system, radios, or telephones. Emergency resource materials are stored at each location. The IC could activate the Hanford Fire Department Mobile Command Unit if necessary.

7.5 REQUIRED REPORTS

Post incident written reports are required for certain incidents on the Hanford Site. The reports are described in Permit Attachment 4, *Hanford Emergency Management Plan* (DOE/RL-94-02, Section 5.1).

Facility management must note in the TSD unit-specific operating record, the time, date, and details of any incident that requires implementation of the contingency plan (refer to Section 7.3). Within fifteen (15) days after the incident, a written report must be submitted to Ecology. The report must include the elements specified in WAC 173-303-360(2)(k) and WAC 173-303-640(7)(d)(ii).

7.6 PLAN LOCATION AND AMENDMENTS

Copies of this plan are maintained at the following locations:

- 242-A Evaporator Control Room
- Central Shift Office (274-AW)

This plan will be reviewed and immediately amended as necessary, in accordance with Permit Attachment 4, *Hanford Emergency Management Plan* (DOE/RL-94-02, Section 14.3.1.1).

7.7 FACILITY/BUILDING EMERGENCY RESPONSE ORGANIZATION

242-A Evaporator Building Emergency Directors			
Title		**Work Location**	**Work Phone**
Primary	Central Shift Manager	200 Areas. Primary location is the Central Shift Office	373-2689
Alternate	Alternate BED	200 Areas	373-2689

Names and home telephone numbers of the BEDs are available from the POC (373-3800) in accordance with Permit Condition II.A.4.

Figure 7.1. 242 A Evaporator Evacuation Routes

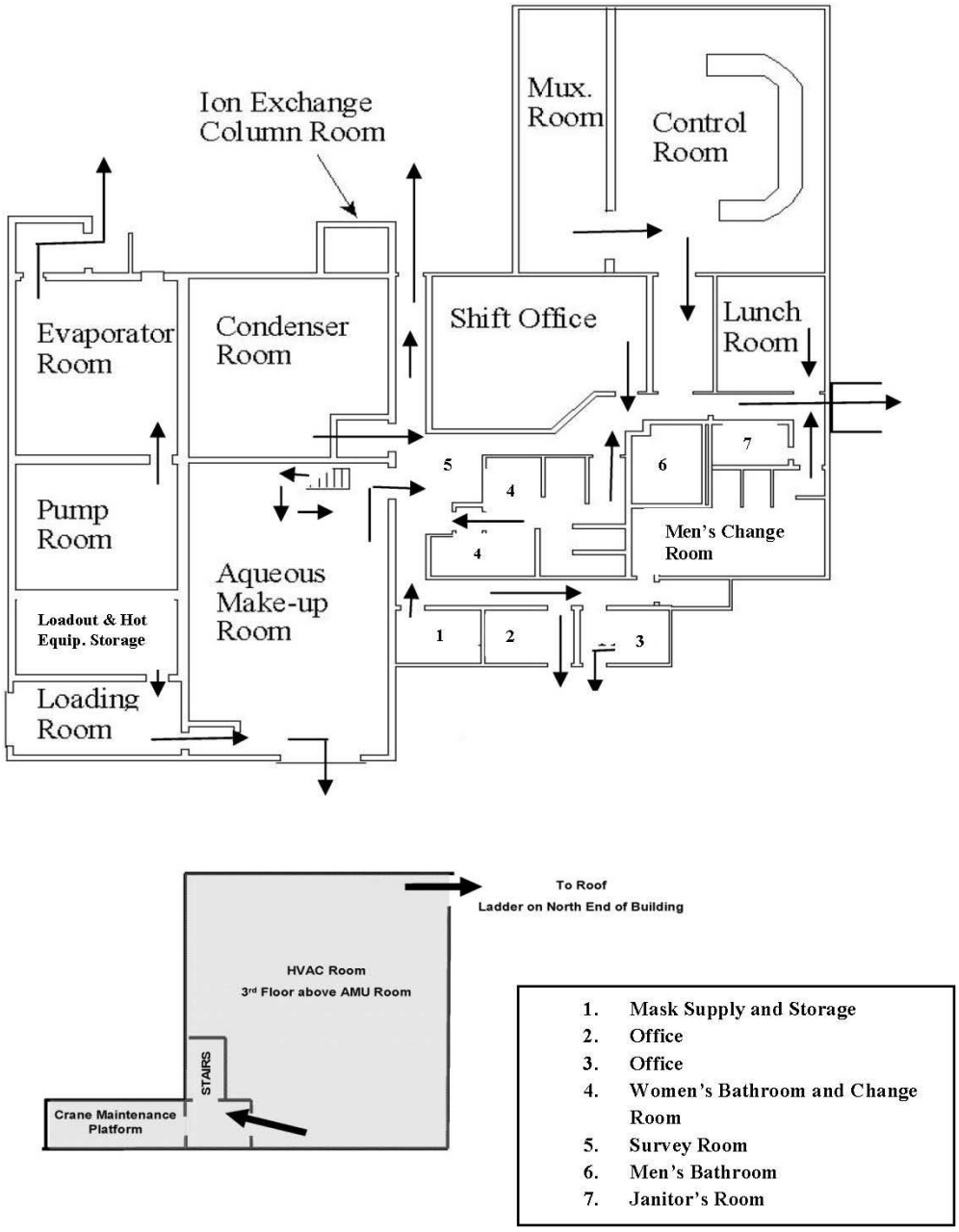
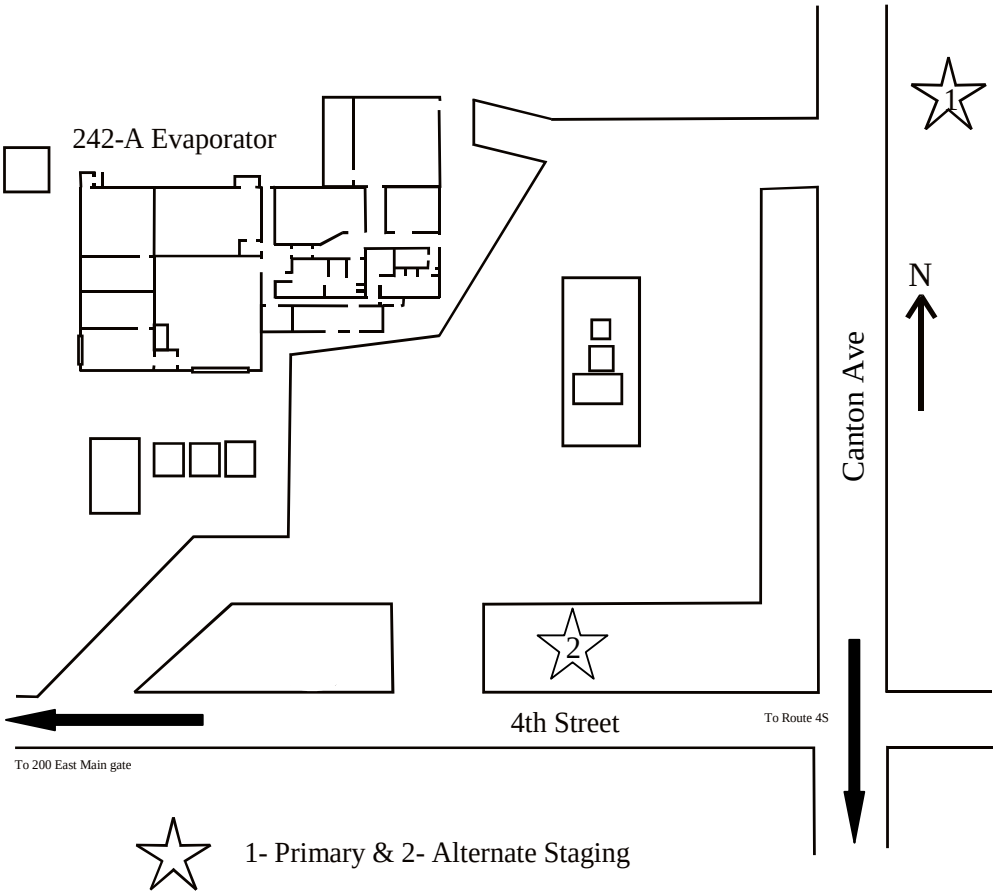


Figure 7.2. 242-A Evaporator Staging Areas



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Hanford Facility RCRA Permit Modification Notification Forms

Part III, Operating Unit Group 5

325 Hazardous Waste Treatment Units

Index

Submitted by Co-Operator: Cameron M Andrew 9-19-14
Date

Reviewed by RL Program Office: 9/29/14
Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
325 Hazardous Waste Treatment Units	**Part III, Operating Unit Group 5**

Description of Modification:
Hanford Facility RCRA Permit III.5 Permit Conditions:

III.5.E SECURITY

III.5.E.1 The Permittees will maintain security at the 325 HWTUs according to the requirements in Addendum E, and in accordance with Permit Attachment 33 and required by Permit Condition ~~II.L~~II.M. [WAC 173-303-310(2)(b)]

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. Editorial correction.

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

Reason for denial:

Reviewed by Ecology:

S.L. Dahl-Crumpler 9/8/14 Date

Remove and Replace the Following Sections:

Remove Part III Permit Conditions, dated September 30, 2011, and replace with Permit Conditions dated September 30, 2014.

PART III, OPERATING UNIT GROUP 5 PERMIT CONDITIONS

325 Hazardous Waste Treatment Units

Unit Description:

The 325 Hazardous Waste Treatment Units (325 HWTUs) store and treat dangerous and/or mixed waste in containers and in a 1,218-liter tank. The 325 HWTUs consist of the Shielded Analytical Laboratory (SAL) that includes Rooms 32, 200, 201, 202, and 203; and the Hazardous Waste Treatment Unit (HWTU) that includes Rooms 520, 524, and 528 of the 325 Building located in the south portion of the 300 Area.

List of Addenda Specific to Operating Unit Group 5

Addendum A	Part A Form, dated September 30, 2008
Addendum B	Waste Analysis Plan, dated September 30, 2009
Addendum C	Process Information, dated June 30, 2009
Addendum D	Groundwater Monitoring (Reserved)
Addendum E	Procedures to Prevent Hazards, dated June 30, 2009
Addendum F	Preparedness and Prevention, dated June 30, 2009
Addendum G	Personnel Training, dated March 31, 2009
Addendum H	Closure Plan, dated June 30, 2009
Addendum I	Inspection Requirements, dated June 30, 2009
Addendum J	Contingency Plan, dated June 17, 2011

Definitions

Reserved

Acronyms

Reserved

III.5.A COMPLIANCE WITH UNIT-SPECIFIC PERMIT CONDITIONS

III.5.A.1 The Permittees will comply with all conditions in this Chapter and its addenda with respect to dangerous and/or mixed waste management and dangerous waste management units in 325 Hazardous Waste Treatment Units (HWTUs), in addition to requirements in Permit Parts I and II.

III.5.B GENERAL WASTE MANAGEMENT

III.5.B.1 The Permittees are authorized to accept dangerous and/or mixed waste that satisfies the waste acceptance criteria in Addendum B according to the waste acceptance procedures in Addendum B for storage in the 325 HWTUs.

III.5.B.2 The Permittees are authorized to store and/or treat dangerous and/or mixed waste physically located in the 325 HWTUs as of the effective date of this Permit, and wastes accepted for storage or treatment pursuant to Permit Condition III.5.B.1.

III.5.B.3 The Permittees will maintain the physical structure of the 325 HWTUs as documented in Addendum C, Section C.1.4.1. [WAC 173-303-630(7)]

III.5.B.4 The Permittees will conduct waste loading and unloading operations consistent with and no less stringent than those practices described in Addendum F, Section F.2.1. [WAC 173-303-395]

III.5.C WASTE ANALYSIS

III.5.C.1 The Permittees will comply with requirements in Addendum B for waste analysis for all dangerous and/or mixed waste managed at this unit. [WAC 173-303-300(5)]

III.5.C.2 The Permittees will have an accurate and complete waste profile as described in Addendum B, Section B.1.1.1.2.1 for every waste stream accepted by the 325 HWTUs. [WAC 173-303-380(1)(a)(b)]

III.5.C.3 The Permittees will place a copy of each waste profile required by Permit Condition II.5.C.2 in the Hanford Facility Operating Record, 325 HWTUs File required by Permit Condition II.I.2. [WAC 173-303-380(1)(a)(b)]

III.5.C.4 The Permittees will comply with the requirements in Addendum C, Sections C.1.11, and C.2.1.5, to prevent hazards from ignitable, reactive, or incompatible wastes. [WAC 173-303-395(1)]

III.5.C.5 The Permittees will make a copy of the waste profile required by Permit Condition III.5.C.2 available upon request. [WAC 173-303-380(1)(a) and (b)]

III.5.D RECORDKEEPING AND REPORTING

III.5.D.1 The Permittees will place the following into the Hanford Facility Operating Record, 325 HWTUs File required by Permit Condition II.I.2: [WAC 173-303-380]

III.5.D.1.a A description of and quantity of each dangerous and/or mixed waste accepted for storage in the 325 HWTUs; [WAC 173-303-380(1)(a)]

III.5.D.1.b Records and results of any sampling or analysis of wastes accepted for storage at the 325 HWTUs, and from any other sampling and analysis required by Addendum B; [WAC 173-303-380(1)(c)]

III.5.D.1.c Summary reports and details of all incidents that require implementation of Addendum J, Contingency Plan according to the requirements of Permit Condition III.5.G.1; [WAC 173-303-380(1)(d)]

III.5.D.1.d An inspection log, or a summary of such log, of inspections conducted pursuant to Permit Condition III.5.H.1; [WAC 173-303-380(1)(e)]

III.5.D.1.e Records required by WAC 173-303-380(1)(k) and (o), incorporated by reference.

III.5.E SECURITY

III.5.E.1 The Permittees will maintain security at the 325 HWTUs according to the requirements in Addendum E, and in accordance with Permit Attachment 33 and required by Permit Condition II.M. [WAC 173-303-310(2)(b)]

III.5.E.2 The Permittees will post warning signs at all entrances to the 325 HWTUs. [WAC 173-303-310(2)(a)]

III.5.F PREPAREDNESS AND PREVENTION

III.5.F.1 The Permittees will comply with the Preparedness and Prevention requirements in Addendum F. [WAC 173-303-340]

III.5.G CONTINGENCY PLAN

III.5.G.1 The Permittee will comply with Addendum J, in addition to the requirements of Permit Condition II.A when applicable. Enforceable portions of Addendum J are identified in Permit Addendum J, Page J-i. [WAC 173-303-350]

III.5.H INSPECTIONS

III.5.H.1 The Permittee will perform inspections of the 325 HWTUs according to Addendum I, Inspection Plan. The inspection shall include:

III.5.H.1.a 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. [WAC 173-303-320(2)]

III.5.H.2 The inspection schedule required by Permit Condition III.5.H.1 will provide the frequency of inspection for specific items. The frequency should be based on the rate of possible deterioration of equipment and the probability of an environmental or human health incident. Areas subject to spills must be inspected daily when in use. [WAC 173-303-320(2)(c)

III.5.H.3 The Permittee must remedy any problems revealed by inspections conducted pursuant to Permit Condition III.5.H.1, on a schedule that prevents hazards to the public health and the environment. Where a hazard is imminent or has already occurred, remedial action must be taken immediately. [WAC 173-303-320(3)]

III.5.H.4 The Permittees will place a copy of the inspection requirements and schedule prepared according to Permit Condition III.5.H.1 in the Hanford Facility Operating Record, 325 HWTUs File required by Permit Condition II.I.2. [WAC 173-303-320(2)(a)]

III.5.H.5 The Permittee will keep an inspection log or summary of inspections conducted pursuant to Permit Condition III.5.H.1, including at a minimum the following:

III.5.H.5.a Date and time of the inspection;

III.5.H.5.b Printed name and the handwritten signature of the inspector;

III.5.H.5.c Notation of the observations made;

III.5.H.5.d An account of spills or discharges in accordance with Permit Condition II.E, and the date and description of any repairs or remedial actions taken.

III.5.I TRAINING PLAN

III.5.I.1 The Permittee will include Addendum G training requirements in the written training plan required by Permit Condition II.C. [WAC 173-303-330]

III.5.J OTHER GENERAL REQUIREMENTS

III.5.J.1 The Permittees will conduct waste management activities within 325 HWTUs authorized by this Permit according to the requirements in Addendum F, Sections F.3.1, and F.3.2. The Permittees will document compliance with these provisions in the Hanford Facility Operating Record, 325 HWTUs File. [WAC 173-303-395(1)(a)-(c)]

III.5.J.2 The Permittees will comply with the requirements of WAC 173-303-395(2), incorporated by reference.

III.5.K CLOSURE

III.5.K.1 The Permittees will close the 325 HWTUs in accordance with Addendum H, Closure Plan. [WAC 173-303-610(4)]

III.5.K.2 The Permittees will amend the Closure Plan in accordance with Permit Condition II.J.2 and Addendum H. [WAC 173-303-610(3)(b)]

III.5.K.3 The Permittees will provide Ecology with a Notice of Closure according to Permit Condition II.J.1. [WAC 173-303-610(3)(c)]

III.5.L POST CLOSURE

Reserved

III.5.M CRITICAL SYSTEMS

Reserved

III.5.N RESERVED

III.5.O CONTAINERS

III.5.O.1 Container Storage Unit Standards

III.5.O.1.a The Permittees will maintain the integrity of container storage secondary containment as documented in Addendum C, Sections C.1.4, and C.1.5, including all chemically resistant coatings and sealants described in Addendum C, Section C.1.4.1.1, as necessary to ensure any spills or releases do not migrate to the underlying concrete or soils.

III.5.O.1.b The Permittees will place documentation of any damage to and subsequent repairs of chemically resistant coatings in the Hanford Facility Operating Record, 325 HWTUs File required by Permit Condition II.I.2. [WAC 173-303-630(7)]

III.5.O.1.c Within thirty (30) days of the effective date of this Permit, the Permittee will place documentation in the Hanford Facility Operating Record, 325 HWTUs File identifying the specific chemical resistant floor and wall coatings used for secondary containment in the 325 HWTUs. This documentation will demonstrate that these materials are impervious to the wastes managed in each of the 325 HWTUs cells to contain spills until the collected material is detected and removed.. [WAC 173-303-630(7)(a)(i)]

III.5.O.2 Container Management Standards

III.5.O.2.a The Permittees are authorized to manage containerized wastes at the 325 HWTUs according to the requirements of Addendum C, Section C.1.2. [WAC 173-303-630(2)]

III.5.O.2.b The Permittees will store containers according to the waste segregation and storage arrangements specified in Addendum C, and the hazard class assigned as part of the waste acceptance process required by Addendum B. [WAC 173-303-630(7), WAC 173-303-395(2)]

III.5.O.2.c In addition to storage capacity limitations specified elsewhere in this Chapter, the Permittees will ensure that the storage limits for flammable liquids, combustible liquids, combustible fibers, flammable gasses and liquefied flammable gasses identified in WAC 173-303-630(8)(b) are not exceeded at any time. In addition, the Permittees will ensure the capacity limitation for explosive waste in WAC 173-303-630(8)(a) is not exceeded at any time. [WAC 173-303-630(8)]

III.5.O.2.d The Permittees will label containers according to the requirements of Addendum C, Section C.1.3. The Permittees will also ensure that:

III.5.O.2.d.i Container labels are not obscured or are otherwise unreadable;

III.5.O.2.d.ii Containers are oriented so that labels are readily visible;

III.5.O.2.d.iii Container labels are removed or completely obscured when the container to which they are attached is rendered empty. [WAC 173-303-630(3)]

III.5.O.2.e	The Permittees will ensure wastes are compatible with containers in which they are managed and with other wastes stored at the 325 HWTUs according to the requirements Addendum C, Sections C.1.10 and C.1.11, and Addendum F, Section F.2.2. [WAC 173-303-630(4), WAC 173-303-630(9)]
III.5.O.2.f	The Permittees will comply with the requirements for managing wastes in containers in WAC 173-303-630(5)(a) and (b), incorporated by reference.
III.5.O.2.g	The Permittees will ensure the physical arrangement and spacing of containers within the 325 HWTUs satisfies the following requirements. [WAC 173-303-630(5)(c)]
III.5.O.2.g.i	The Permittees will comply with the requirements for waste stored in cells, storage cabinets and shelves, as documented in Addendum C, Section C.1.2;
III.5.O.2.g.ii	The Permittees will ensure the physical arrangement and spacing of drums that are stored in the 325 HWTUs are stored in rows no more than two drums wide and with a separation of at least thirty (30) inches between rows of drums to ensure that all drums are readily accessible for movement and inspection. [WAC 173-303-630(5)(c), WAC 173-303-340(3)]
III.5.O.2.h	The Permittees will remove any accumulated liquids from container storage areas in the 325 HWTUs, including individual secondary containment systems (spill pallets, portable booms, or other commercially available drum containment systems) that may be used to ensure containers are not in contact with free liquids and to prevent overflow of the container storage area secondary containment. [WAC 173-303-630(7)]
III.5.O.2.i	The Permittees may treat wastes in containers via consolidation of wastes, decanting of free liquids and addition of absorbents. Absorbents must satisfy the requirements of WAC 173-303-140(4)(b)(iv), incorporated by reference, for wastes to be land disposed in Washington. The Permittees may not use addition of absorbents for purposes of changing the treatability group of a waste with respect to the land disposal restriction standards of 40 CFR 268, incorporated by reference by WAC 173-303-140.
III.5.O.2.j	Waste stored in the SAL is exempt from WAC 173-303-692, as the SAL is used exclusively to manage mixed waste. The Permittees will comply with the requirements for air emissions from containers in Addendum C, Section C.3 for waste stored in the 325 HWTUs. [WAC 173-303-692]
III.5.O.3	Container Storage Inspection Requirements
III.5.O.3.a	The Permittee will inspect the 325 HWTUs according to Addendum I, Inspection Requirements. [WAC 173-303-630(6)]
III.5.O.3.b	The Permittees will comply with the requirements of WAC 173-303-395(1)(d), incorporated by reference. [WAC 173-303-395(1)(d)]

III.5.P TANK SYSTEMS

III.5.P.1	The Permittees will develop, maintain, and follow a written schedule and requirements for conducting integrity assessments. The schedule will meet the requirements of Addendum C, Section C.2.1.1.2 and consideration of the following factors:
III.5.P.1.a	Results of past integrity assessments;
III.5.P.1.b	Age of the tank system(s);
III.5.P.1.c	Materials of construction of each tank system, including any liners;
III.5.P.1.d	Characteristics of the wastes managed by each tank system;
III.5.P.1.e	Any other relevant factors. [WAC 173-303-640(2)(e)]

III.5.P.2	The Permittees will maintain a copy of the schedule required by Permit Condition III.5.P.1 in the Hanford Facility Operating Record, 325 HWTUs File, and conduct periodic integrity assessments according to the schedules and requirements of the schedule. If results of these assessments indicate a tank has structural deficiencies or lacks integrity such that it may collapse, rupture or fail, the Permittees must follow the requirements of WAC 173-303-640(7), incorporated by reference. [WAC 173-303-640(2)(e)]
III.5.P.3	If the findings of an integrity assessment conducted pursuant to Permit Condition III.5.P.1 indicate a tank has structural deficiencies or lacks integrity such that it may collapse, rupture or fail, the Permittees will evaluate the waste acceptance criteria in Addendum B, the applicable tank design and/or operating requirements in Addendum C, and any other Permit requirements which may reasonably influence the integrity of the tank in question. Based on this review, the Permittees will request the required Permit modifications in accordance with Permit Condition I.C.3 to minimize any adverse effects of future waste management activities on the integrity of the tank. [WAC 173-303-640(2)(d), WAC 173-303-815(2)(b)]
III.5.P.4	Tank System Operating Requirements
III.5.P.4.a	The Permittees will comply with the requirements of WAC 173-303-640(5)(a), incorporated by reference.
III.5.P.4.b	The Permittees will comply with the requirements of Addendum C, Section C.2.1.2.4. [WAC 173-303-640(5)(b)]
III.5.P.4.c	The Permittees will comply with the requirements of Addendum C, Section C.2.1.4. [WAC 173-303-640(5)(d)]
III.5.P.4.d	The Permittees will comply with the requirements of WAC 173-303-640(7), incorporated by reference, in response to spills or leaks from tank systems at Operating Unit Group 5. [WAC 173-303-640(5)(c)]
III.5.P.4.e	The Permittees will comply with the requirements of WAC 173-303-640(10), incorporated by reference.
III.5.P.5	Tank System Inspection Requirement
III.5.P.5.a	The Permittees will inspect the Operating Unit Group 5 tank systems authorized by Permit Condition III.5.B.2 according to Addendum I, Inspection Requirements. [WAC 173-303-640(6)(a)-(c)]
III.5.P.5.b	The Permittees will place documentation of inspections conducted pursuant to Permit Condition III.3.P.5.a in the Hanford Facility Operating Record, 325 HWTUs File required by Permit Condition II.I.2. These records will contain the following information: [WAC 173-303-640(6)(d)]
III.5.P.5.b.i	Date and time of the inspection
III.5.P.5.b.ii	Printed name and the handwritten signature of the inspector
III.5.P.5.b.iii	Notation of the observations made
III.5.P.5.b.iv	Date and description of any repairs or remedial actions taken, and/or the scheduled date for the repairs or remedial actions.
III.5.P.5.c	The Permittees will remedy any problems revealed by the inspections required by Permit Condition III.3.P.9, on a schedule that prevents hazards to the public health and environment. Where a hazard is imminent or has already occurred, remedial action must be taken immediately. [WAC 173-303-640(6)(d)]

III.5.P.6	Approved Waste and Storage Limits
III.5.P.6.a	Subject to conditions in Addendum C, the Permittees may store a maximum of 1,218 liters of dangerous and/or mixed waste in the tank system in the 325 HWTUs (S02). A maximum of 1,218 liters per day of dangerous and/or mixed waste may be treated in tanks in the 325 HWTUs (T01).
III.5.P.6.b	The Permittees shall only store or treat in the SAL tank the following mixed waste listed in the Dangerous and Mixed Waste Tank System:
III.5.P.6.b.i	Dangerous and/or mixed waste generated by Pacific Northwest National Laboratory; or
III.5.P.6.b.ii	Mixed waste generated at other Hanford Facility locations and mixed waste generated from offsite facilities, which have been transferred and accepted by the 325 HWTUs pursuant to the provisions in Addendum B, Waste Analysis Plan, and this Permit.
III.5.P.6.b.iii	The Permittee shall not place or store containerized dangerous and/or mixed waste, accepted by the 325 HWTUs pursuant to incoming wastes procedures in Addendum B, Waste Analysis Plan, in any area other than container storage areas as identified in Addendum C, Section C.1.2.
III.5.P.7	Tank System Design and Construction
III.5.P.7.a	Tank System Installation and Certification will be retained by the Permittees and made available upon request.
III.5.P.8	Integrity Assessments
III.5.P.8.a	Results of the integrity assessments shall be included in the Hanford Facility Operating Record, 325 HWTUs File until final closure and corrective action are complete and certified.
III.5.P.8.b	Any tank system, including its secondary containment system, found to be leaking, or otherwise unfit for service, immediately shall be removed from service and the Permittees shall comply with the requirements of WAC 173-303-640(7). Such a tank system, including its secondary containment system, shall not be returned to service until the Permittees have obtained the required certification.
III.5.P.8.c	The Permittees shall maintain the integrity of all containment systems for tank systems.
III.5.P.9	Tank Management Practices
III.5.P.9.a	The Permittees shall not place mixed wastes or treatment reagents in the tank system if these could cause the tank, its ancillary equipment, or a containment system to rupture, leak, corrode, or otherwise fail.

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Quarter Ending September 30, 2014

24590-HLW-PCN-ENV-13-001

Hanford Facility RCRA Permit Modification Notification Form
Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

Index

Submitted by Co-Operator:

Roger J. Landon — 6/30/14

Roger J. Landon — Date

Reviewed by ORP Program Office:

D. L. Noyes — 8/13/14

D. L. Noyes — Date

Quarter Ending September 30, 2014

24590-HLW-PCN-ENV-13-001

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 and replace the following Piping and Instrumentation Diagrams (P&IDs) for the High-Level Waste (HLW) Melter Process System (HMP) in Appendix 10.2 of the Dangerous Waste Permit (DWP). The thirteen (13) P&IDs incorporated into the DWP are being replaced with sixteen (16) revised P&IDs as indicated in the table below. In some cases, the additional drawings are the result of converting source drawings into multiple sheets in an effort to provide clearer representation of the HMP system, including additional details for instrumentation and logic controls.

Appendix 10.2			
Replace:	24590-HLW-M6-HMP-00002, Rev 5	With:	24590-HLW-M6-HMP-00002001, Rev 0
			24590-HLW-M6-HMP-00002002, Rev 0
	24590-HLW-M6-HMP-00003, Rev 5		24590-HLW-M6-HMP-00003001, Rev 0
	24590-HLW-M6-HMP-00004001, Rev 0		24590-HLW-M6-HMP-00004001, Rev 1
	24590-HLW-M6-HMP-00006001, Rev 0		24590-HLW-M6-HMP-00006001, Rev 1
			24590-HLW-M6-HMP-00006002, Rev 0
	24590-HLW-M6-HMP-00012001, Rev 0		24590-HLW-M6-HMP-00012001, Rev 1
	24590-HLW-M6-HMP-00012002, Rev 0		24590-HLW-M6-HMP-00012002, Rev 1
	24590-HLW-M6-HMP-00013002, Rev 0		24590-HLW-M6-HMP-00013002, Rev 1
	24590-HLW-M6-HMP-00014, Rev 4		24590-HLW-M6-HMP-00014001, Rev 0
	24590-HLW-M6-HMP-20002, Rev 6		24590-HLW-M6-HMP-20002001, Rev 0
			24590-HLW-M6-HMP-20002002, Rev 0
	24590-HLW-M6-HMP-20003, Rev 6		24590-HLW-M6-HMP-20003001, Rev 0
	24590-HLW-M6-HMP-20012001, Rev 0		24590-HLW-M6-HMP-20012001, Rev 1
	24590-HLW-M6-HMP-20012002, Rev 0		24590-HLW-M6-HMP-20012002, Rev 1
	24590-HLW-M6-HMP-20014, Rev 5		24590-HLW-M6-HMP-20014001, Rev 0

This modification requests Ecology approval and incorporation into the permit, the changes provided in applicable document change forms (e.g., DCNs) and changes associated with the resolution to comments on change documents since the issuance of the last revision of the permitted drawing. Revisions are the result of ongoing design changes.

The following are general changes made on drawings listed in the table above:

- Modified, deleted, and added notes, holds, and references
- Expanded instruments and logic controls information
- Added and updated off-sheet connectors
- Incorporated changes from change documentation identified in the Notes section on each drawing

The following identifies the significant changes to the individual drawings:

24590-HLW-M6-HMP-00002001 (Rev 0) and 24590-HLW-M6-HMP-20002001 (Rev 0)

- Removed hold and redesigned film cooler cleaner air supply (Grid E4/F4/G4 through F7/G7) per DCN 24590-HLW-M6N-HMP-00088 provided previously in CCN 220109
- Removed and added valves (Grid A4 and B7), added restriction orifices (Grid A4 and B4), relocated flow transmitter upstream of flow valve (Grid B7), and added temperature indicator on demin water and instrument air supply lines (unclouded change in Grid C7) per DCN 24590-HLW-M6N-HMP-00087 provided previously in CCN 203897
- Changed rigid jumpers to flexible jumpers on instrument air supply lines (Grid C5 and D5) per DCN 24590-HLW-M6N-HMP-00084 provided previously in CCN 196291
- Added high point vent on instrument air supply line (Grid B3) per DCN 24590-HLW-M6N-HMP-20023 provided previously in CCN 203911
- Removed penetration data (unclouded change in Grid G8) per DCN 24590-HLW-M6N-HMP-00082 provided previously in CCN 196261
- Enhanced instrumentation and control presentation to define and clarify the functional requirements of the system controls (multiple unclouded changes) per DCN 24590-HLW-M6N-HMP-20026 provided previously in CCN 220128

24590-HLW-M6-HMP-00002002 (Rev 0) and 24590-HLW-M6-HMP-20002002 (Rev 0)

- Changed rigid jumper to flexible jumper on instrument air supply line (Grid D6), added HOP offgas in-line mister tag (Grid C5), and connected jumper to film cooler (Grid B6) per DCN 24590-HLW-M6N-HMP-00084 provided previously in CCN 196291
- Added high point vent to demin water supply line (Grid G5) and deleted demin water and instrument air supply tubing size designators (Grid F6/7 and G6/7) per DCN 24590-HLW-M6N-HMP-20023 provided previously in CCN 203911
- Added HOP process pipeline and jumper to connect to temperature element (Grid C3 through C4) per DCN 24590-HLW-M6N-HMP-00092 provided previously in CCN 203918
- Enhanced instrumentation and control presentation to define and clarify the functional requirements of the system controls (Grid D3 and F3; unclouded change in Grid F5 and G5) per DCN 24590-HLW-M6N-HMP-20026 provided previously in CCN 220128

24590-HLW-M6-HMP-00003001 (Rev 0) and 24590-HLW-M6-HMP-20003001 (Rev 0)

- Added TX tag to temperature element bundles in melter (Grid C3) per DCN 24590-HLW-M6N-HMP-00058 provided previously in CCN 183313
- Changed cooling water return lines/jumpers and sizes to fixed piping/tubing (Grid B2 through E4), added pipe section to cooling water return line and reducer (Grid D8), and added drain lines to PSV tree on cooling water return line (Grid D7) per DCN 24590-HLW-M6N-HMP-20023 provided previously in CCN 203911
- Reduced cooling water supply line size (Grid A6, C6, and F6) for increased instrument performance per DCN 24590-HLW-M6PR-HMP-00001 provided previously in CCN 183316
- Clarified pressure relief valve sizing on cooling water return line (Grid E7) per DCN 24590-HLW-M6N-HMP-00079 provided previously in CCN 170763
- Added block valves on cooling water return line to separate C5 from C2 areas during maintenance operations (Grid E6) per 24590-HLW-M6N-HMP-00081 provided previously in CCN 183328
- Corrected nozzle label on melter cooling water panel (Grid F4) per DCN 24590-HLW-M6N-HMP-00084 provided previously in CCN 196291
- Removed electrical jumpers (empty clouds in Grid G3) per DCN 24590-HLW-M6N-HMP-00082 in CCN 196261

24590-HLW-M6-HMP-00004001 (Rev 1)

- Changed gate valves to ball valves on instrument air supply lines (Grid B7 and D7)

- Added "spare" description to spare instrument air supply line HMP-GL-02005-S10A-001/2 (Grid C6)

24590-HLW-M6-HMP-00006001 (Rev 1)

- Rev 0 of this P&ID was split into two drawings for expanded details (-00006001 Rev 1 and -00006002 Rev 0)
- Removed hold and added PDSA requirement for Safety Significant interlock with pour tunnel bogie drive (Grid F4 and Note 9) per DCN 24590-HLW-M6N-HMP-00074 provided previously in CCN 233567
- Added, deleted, and revised instrument air supply line sizes and valve tags (Grid E3, D5 through F5)
- Changed gate valve to ball valve on instrument air supply lines (Grid F3)
- Added vendor details for argon gas supply system, including line and valve tags (Grid A5/B5/C5 through A8/B8/C8/D8)

24590-HLW-M6-HMP-00006002 (Rev 0)

- This P&ID is a new drawing split from -00006001 (Rev 0) for expanded details
- Re-aligned jumper and wallbox details on instrument air supply line (Grid B6) per 24590-HLW-M6N-HMP-00094 provided previously in CCN 246348
- Added new instrument air supply pipe sections (Grid D6) per DCN 24590-HLW-M6N-HMP-20047 provided previously in CCN 254071
- Changed gate valve to ball valve on instrument air vent line (Grid F6)

24590-HLW-M6-HMP-00012001 (Rev 1) and 24590-HLW-M6-HMP-20012001 (Rev 1)

- Changed gate valves to ball valves on demin water supply lines (Grid E6 and F6)

24590-HLW-M6-HMP-00012002 (Rev 1) and 24590-HLW-M6-HMP-20012002 (Rev 1)

- Changed gate valves to ball valves on demin water and instrument air supply lines (Grid C4, D4, F4, D6, and F6)

24590-HLW-M6-HMP-00013002 (Rev 1)

- Changed gate valves to ball valves on instrument air and argon gas supply lines (Grid A7 through E5)
- Added tubing sizes to instrument air and argon gas supply lines, including DWP instruments lines (Grid A3 through E3 and A8 through E8)
- Changed depiction of instrumentation for post-accident monitoring function of argon gas and instrument air lines (Grid F5 through F7)

24590-HLW-M6-HMP-00014001 (Rev 0) and 24590-HLW-M6-HMP-20014001 (Rev 0)

- Reduced size on cooling water supply lines for increased instrument performance (Grid C7 and E7) per DCN 24590-HLW-M6PR-HMP-00001 provided previously in CCN 183316

This PCN updates information in Appendix 10.2 to reflect current design. This DWP component may be re-evaluated to confirm design adequacy. If the re-evaluation results in future design changes, the changes will be reviewed by Ecology in subsequent permit modifications.

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.

DCN 24590-HLW-M6N-30-00039 (CCN 241663) applies to the following P&IDs:

- 24590-HLW-M6-HMP-00002001, Rev 0
- 24590-HLW-M6-HMP-00002002, Rev 0
- 24590-HLW-M6-HMP-20002001, Rev 0
- 24590-HLW-M6-HMP-20002002, Rev 0

Quarter Ending September 30, 2014

24590-HLW-PCN-ENV-13-001

DCN 24590-HLW-M6N-HMP-00094 (CCN 246348) applies to the following P&IDs:

- 24590-HLW-M6-HMP-00002001, Rev 0
- 24590-HLW-M6-HMP-20002001, Rev 0

DCN 24590-HLW-M6N-HMP-20047 (CCN 254071) applies to the following P&IDs:

- 24590-HLW-M6-HMP-00002001, Rev 0

DCN 24590-HLW-M6N-HMP-20012 (CCN 233564) applies to the following P&IDs:

- 24590-HLW-M6-HMP-00002002, Rev 0
- 24590-HLW-M6-HMP-20002002, Rev 0

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: N/A

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:

S. Dahl — Date: 9/10/14

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. ALTHOUGH THE PIPE SPEC BREAK FROM S11B IS DEPICTED AT THE OUT CAVE WALL PENETRATION, IT MAY BE LOCATED ANYWHERE FROM EMBEDDED PORTION UP TO THE FIRST VALVE TO SUPPORT LAYOUT CONSTRAINTS. THE S11B PIPE SPECIFICATION SATISFIES THE REQUIREMENTS OF THE INTERFACING PIPE SPECIFICATION.
6. RESTRICTION ORIFICE SIZED TO LIMIT MAXIMUM FLOW TO PREVENT MELTER PRESSURIZATION.
7. FUNCTION PERFORMS DENSITY CORRECTION TO FLOW TRANSMITTER READING.
8. VALVE OPEN POSITION ALIGNS TO VENT CYLINDER TO CAVE LOWERING THE CLEANER PLUNGER. VALVE CLOSED POSITION ALIGNS FEED AIR TO THE CYLINDER RAISING THE CLEANER PLUNGER. VALVE TO FAIL WITH PLUNGER IN UP POSITION.
9. VALVE OPEN POSITION ALIGNS FEED AIR TO THE CYLINDER LOWERING THE CLEANER PLUNGER. VALVE CLOSED POSITION ALIGNS TO VENT CYLINDER TO CAVE RAISING THE CLEANER PLUNGER. VALVE TO FAIL WITH PLUNGER IN UP POSITION.
10. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-HLW-M6-HMP-00002 REV 6. THIS DRAWING INCLUDES INFORMATION FROM 24590-HLW-M6LN-HMP-00003, 24590-HLW-M6N-HMP-00082, -00084, -00087, -00088, -20020, -20023, -20026, 24590-HLW-M6PN-HMP-00004, AND 24590-HLW-M6PR-HMP-00001.

HOLD/OPEN ITEMS:

1. PENDING PPJ DESIGN.

REFERENCES:

1. 24590-HLW-3YD-HMP-00001, SYSTEM DESCRIPTION FOR THE HLW MELTER PROCESS SYSTEM (HMP).

DRAWING INDEX

DWG NO	TITLE
24590-HLW-M6-HMP-00002001	HMP SYS MELTER 1 FILM COOLER
24590-HLW-M6-HMP-00002002	HMP SYS MELTER 1 FILM COOLER

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 10	TA	MLO	RSP/RPK		8-13-11

REVISION HISTORY

Q QUALITY DESIGNATOR

ISSUED BY RPP-WTP PDC INIT DATE ISSUE STAMP

	PROJECT No.	24590
	SITE	HANFORD
	AREA	200E
	BUILDING No.	30

	BY	DATE
ORIGINATOR	Tom Ashley	7/29/11
CHECKER	Mike Lorenzo	8/2/11
APPROVER	Matt Gano	8/5/11
REVIEWER	Rob Parker	8-4-11 EHEIA

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-HLW-ADR-M-02-031 REV: 3
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 - HLW
HLW MELTER PROCESS SYSTEM
MELTER 1
FILM COOLER
AND OFFGAS CONNECTION

SCALE: NONE

24590-HLW-M6-HMP-00002001 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

HOP-SPOOL-00001 MELTER 1 STANDBY OFFGAS SPOOL

HOP-FCLR-00003 MELTER 1 STANDBY OFFGAS INSERT

FC-0232 HLW-M6-HMP-00002001 C6

PDSHH-0139 HLW-M6-HMP-00013002 H2

HOLD 1 POST-SEISMIC SAFE SHUTDOWN

HOP-RK-00027

BECHTEL VENDOR NOTE 11

DEMIN WATER HLW-M6-DIW-00001002 D2 DIW-WE-43582-S11C-001/2

INSTRUMENT AIR HLW-M6-ISA-00009001 A3 ISA-GL-50933-C12A-001/2

HMP-WE-01584-S11C-001/3

HMP-WE-01584-S11C-001/2

HMP-GQ-01548-S11C-001/2

HOP-V-11851 HOP-V-11915 HOP-V-11853 HOP-V-11852 ISA-V-36102

HOP-V-12888 HOP-V-12887 HOP-V-12886

SPARE

VENT TO MELTER CAVE/C5 AREA

HOP-JMPP-00140 HOP-JMPP-00141

HOP-JMPP-00087

STANDBY OFFGAS SCB-HOP-00001 HLW-M6-HOP-00001001 H8

HOP-WBOX-00074 (WALL MODULE)

HMP-JMPP-00091

HMP-WBOX-00056 (BULKHEAD)

HMP-JMPP-00013

INSTRUMENT AIR HLW-M6-HMP-00002001 B2 HMP-WE-01588-S11C-02 HMP-WE-01588-S11B-02 HMP-V-34282

HOP-SPOOL-00001

HOP-JMPP-00112 HOP-MISTR-00013 HOP-PW-20390-N11K-04 HOP-PW-20390-N11K-14 NOTE 7

HOP-PW-20390-N11K-02 HOP-JMPP-00144

SBS BYPASS HLW-M6-HOP-00002002 A8

LOW POINT DRAIN HLW-M6-HOP-00009002 D8

WEST DISCHARGE CHAMBER HLW-M6-HMP-00007001 B3 HMP-SPOOL-00002

EAST DISCHARGE CHAMBER HLW-M6-HMP-00006001 B3 HMP-SPOOL-00001

SPARE REFERENCE TAP HMP-JMPP-00156

MELTER PRESSURE REFERENCE TAP PDT-0139A/B HLW-M6-HMP-00001001 C7 HMP-JMPP-00001-B

HMP-JMPP-00157

HOP-FCLR-00003

HMP-MLTR-00001

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 FREE DRAINING, UNLESS OTHERWISE NOTED.
5. PIPE INSERT WITH NO ACTIVE AIR COOLING.
6. LOCATE TO ALLOW NUT RUNNER OPERATION VIA OVERHEAD CRANE. VALVE CANNOT CHANGE STATE DURING A DESIGN BASIS SEISMIC EVENT, (SC-1).
7. HOP-PW-20390-N11K-14 IS AN AIR COOLING CHAMBER AND REQUIRES A MINIMUM VOLUME OF 7 CUBIC FEET.
8. PNEUMATIC ACTUATOR IS IN CAVE. REFER TO DRAWING 24590-HLW-M6-ISA-00008 FOR PNEUMATIC LINE WALL PENETRATION DETAILS.
9. ALTHOUGH THE PIPE SPEC BREAK FROM S11B IS DEPICTED AT THE OUT CAVE WALL PENETRATION IT MAY BE LOCATED ANYWHERE FROM EMBEDDED PORTION UP TO THE FIRST VALVE TO SUPPORT LAYOUT CONSTRAINTS. THE S11B PIPE SPECIFICATION SATISFIES THE REQUIREMENTS OF THE INTERFACING PIPE SPECIFICATION.
10. PIPING WILL TERMINATE AT A MAXIMUM DISTANCE OF 5'-0" FROM THE END OF THE RACK WITH A FNPT CONNECTION.
11. TAGGING FOR VENDOR SUPPLIED COMPONENTS, INCLUDING PIPING, TO BE ADDED PENDING FINAL VENDOR DOCUMENTATION SUBMITTAL.
12. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-HLW-M6-HMP-00002 REV 6. THIS DRAWING INCLUDES INFORMATION FROM 24590-HLW-M6LN-HMP-00001, -00003, 24590-HLW-M6N-HMP-00075, -00078, -00080, -00082, -00084, -00092, -20020, -20023, AND -20026.

HOLD/OPEN ITEMS:

1. PENDING PPJ DESIGN.

REFERENCES:

1. 24590-HLW-3YD-HMP-00001, SYSTEM DESCRIPTION FOR THE HLW MELTER PROCESS SYSTEM (HMP).

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 12	TH	MD	BDP	MLP	8-13-11

REVISION HISTORY

QUALITY DESIGNATOR: Q

ISSUED BY: RPP-WTP PDC

INIT DATE ISSUE STAMP

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	30

	BY	DATE
ORIGINATOR		8/8/11
CHECKER		8/8/11
APPROVER		8/15/11
REVIEWER		8-8-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO

ADR NO. 24590-HLW-ADR-M-02-031 REV: 3

EM&S SCREENING REQUIRED? [X] YES [ ] NO EM&S INITIAL IF YES

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - HLW HLW MELTER PROCESS SYSTEM MELTER 1 FILM COOLER AND OFFGAS CONNECTION

SCALE: NONE

24590-HLW-M6-HMP-00002002 REV 0

"E" SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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PLOTTED BY: rvrivera

FORM E_SDN.DGN 02/2009

NOTES:

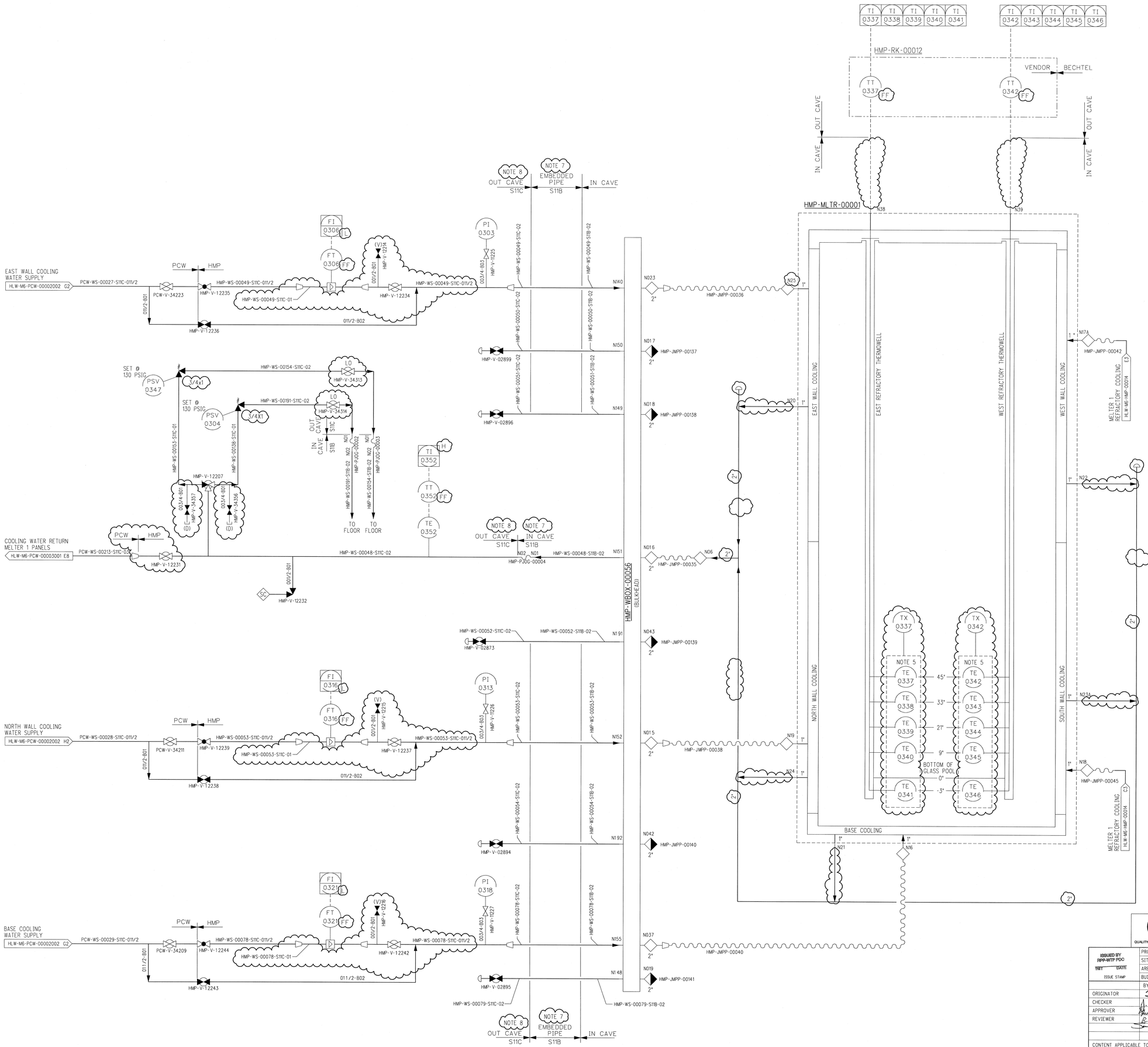
1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING ARE QUALITY LEVEL CM AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
5. REFRACTORY THERMOCOUPLE LOCATIONS RELATIVE TO BOTTOM OF GLASS POOL.
6. THE GEOMETRY OF JOGGLED (OFFSET) PENETRATIONS IS QUALITY LEVEL Q FOR RADIATION PROTECTION. THE QUALITY LEVEL AND SEISMIC CATEGORY DESIGNATIONS OF PIPING WITHIN JOGGLES ARE THE SAMES AS CONNECTING PIPE.
7. ALTHOUGH THE PIPE SPEC BREAK FROM S11B IS DEPICTED AT THE OUT CAVE WALL PENETRATION IT MAY BE LOCATED ANYWHERE FROM EMBED PORTION UP TO THE FIRST VALVE TO SUPPORT LAYOUT CONSTRAINTS. THE S11B PIPE SPECIFICATION SATISFIES THE REQUIREMENTS OF THE INTERFACING PIPE SPECIFICATION.
8. LOCATE OUT CAVE ISOLATION VALVES AS CLOSE AS POSSIBLE TO IN CAVE - OUT CAVE BOUNDARY.
9. THIS DRAWING SUPERSEDES 24590-HLW-M6-HMP-00003 REV 6. THIS DRAWING INCLUDES INFORMATION FROM 24590-HLW-M6N-HMP-00058, -00079, -00081, -00082, -00084, -20023, -20027, 24590-HLW-M6LN-00003, AND 24590-HLW-M6PR-HMP-00001.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-HLW-3YD-HMP-00001, SYSTEM DESCRIPTION FOR THE HLW MELTER PROCESS SYSTEM (HMP).



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-HLW-M6-HMP-00003001	MELTER PROC SYS MELTER 1 REFRACTORY COOLING

REVISION HISTORY

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 9	TW	JTS	GPP	RWM	8-15-11

Q QUALITY DESIGNATOR

ISSUED BY RPP-WTP PDC — ISSUE STAMP

	BY	DATE
ORIGINATOR		8/12/11
CHECKER		8/12/11
APPROVER		8/15/11
REVIEWER		8-15-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-HLW-ADR-M-02-031 REV: 3
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES

PROJECT No. 24590 | SITE HANFORD | AREA 200E | BUILDING No. 30

BECHTEL
RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - HLW MELTER 1 REFRACTORY COOLING

SCALE: NONE

24590-HLW-M6-HMP-00003001 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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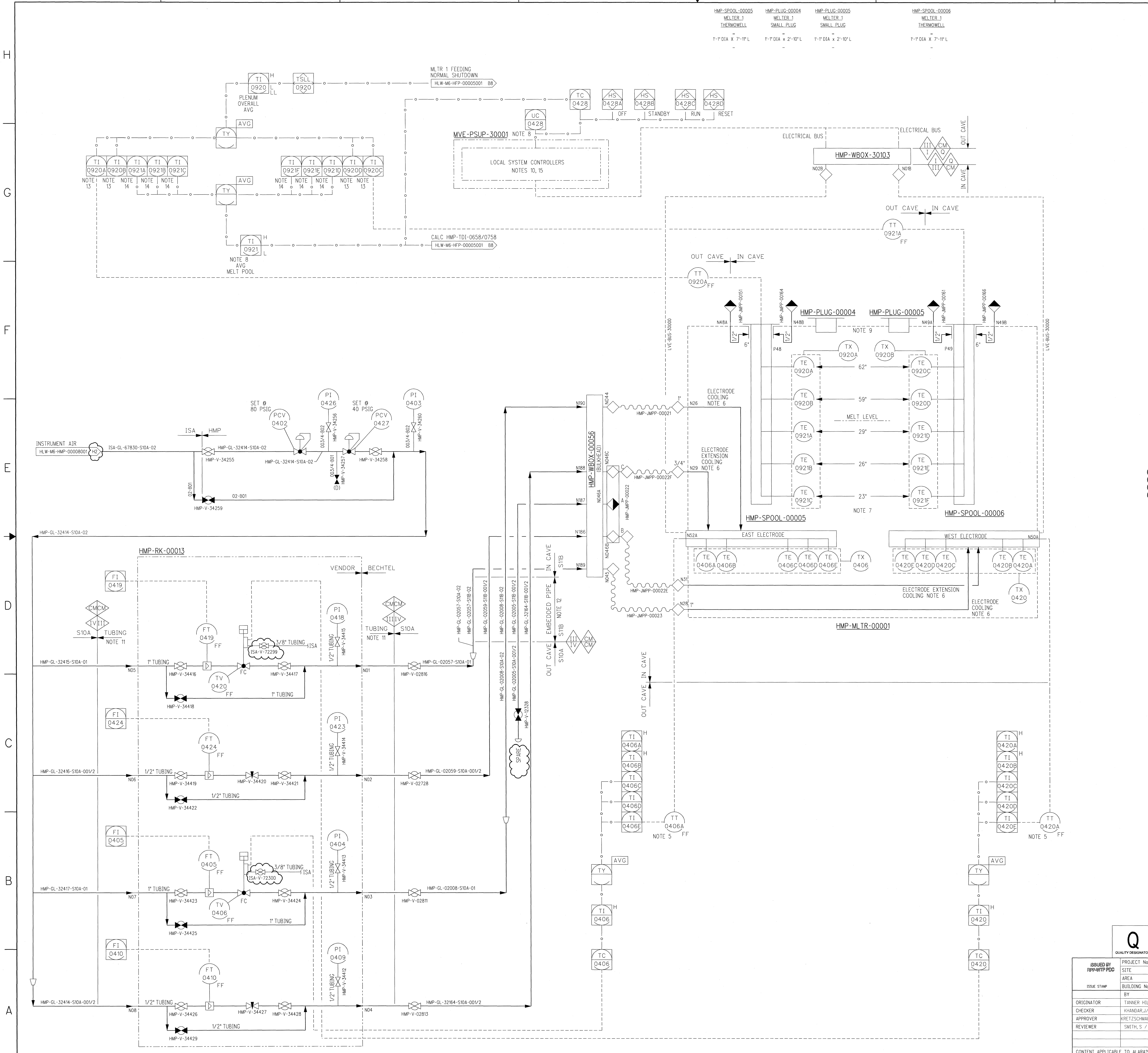
FORM E_SDN.DGN 02/2009



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, UNLESS OTHERWISE NOTED.
5. FIVE POINT THERMOCOUPLE ASSEMBLY. THREE POINTS ARE ELECTRODE TEMPERATURES; THESE ARE AVERAGED FOR USE IN ELECTRODE TEMPERATURE CONTROL. INDIVIDUAL ELECTRODE TEMPERATURE POINTS HAVE HIGH ALARMS ON RATE OF CHANGE AND ON DIFFERENTIAL FROM THE AVERAGE ELECTRODE TEMPERATURE. REMAINING TWO POINTS ARE ELECTRODE EXTENSION EXHAUST AND ELECTRODE EXHAUST TEMPERATURES.
6. COOLING AIR FOR ELECTRODE AND ELECTRODE EXTENSION EXHAUSTS TO CAVE.
7. DISTANCE OF TEMPERATURE ELEMENTS FROM BOTTOM OF MELT POOL.
8. POWER SUPPLY OPERATION IS INITIATED AND OPERATIONAL STATUS IS MONITORED FROM THE PCJ. JOULE HEATER POWER SUPPLY CONTROL SIGNAL ORIGINATES FROM MELTER AVERAGE GLASS POOL TEMPERATURE. JOULE HEATING POWER SUPPLY OUTPUT VOLTAGE, CURRENT, POWER AND FAULT DIAGNOSTICS ARE MONITORED BY THE PCJ.
9. PLUGS ARE ALTERNATE INSERTS FOR MELTER PORTS.
10. POWER SUPPLY UNIT CONTROLS INCLUDED IN CONTROL DESCRIPTION 24590-CM-HC4-POA-EBBO-00004-03-00003. POWER SUPPLY MAY BE OPERATED IN "LOCAL" OR "REMOTE" MODE. WHEN IN "LOCAL" MODE, LOSS OF SIGNAL TO POWER SUPPLY FROM PCJ RESULTS IN DEFAULT TO LOCAL SET POINT. WHEN IN "REMOTE" MODE, LOSS OF SIGNAL TO POWER SUPPLY FROM PCJ RESULTS IN DEFAULT TO LAST OUTPUT.
11. PIPING WILL TERMINATE AT A MAXIMUM DISTANCE OF 5'-0" FROM THE END OF THE RACK WITH A FNPT CONNECTION. TUBING TO BE PROCURED BY C&I AND FIELD ROUTED BY CONSTRUCTION.
12. ALTHOUGH THE PIPE SPEC BREAK FROM S11B IS DEPICTED AT THE OUT CAVE WALL PENETRATION IT MAY BE LOCATED ANYWHERE FROM EMBED PORTION UP TO THE FIRST VALVE TO SUPPORT LAYOUT CONSTRAINTS. THE S11B PIPE SPECIFICATION SATISFIES THE REQUIREMENTS OF THE INTERFACING PIPE SPECIFICATION.
13. INDIVIDUAL PLENUM TEMPERATURE INDICATORS HAVE A HIGH ALARM ON DIFFERENTIAL FROM THE AVERAGE PLENUM TEMPERATURE.
14. INDIVIDUAL MELT POOL TEMPERATURE INDICATORS HAVE HIGH ALARMS ON RATE OF CHANGE AND ON DIFFERENTIAL FROM THE AVERAGE MELT POOL TEMERATURE.
15. FOR POWER SUPPLY SINGLE LINE DIAGRAM SEE DRAWING 24590-HLW-E1-LVE-10001. COOLING WATER FOR POWER SUPPLY IS SHOWN ON 24590-HLW-M6-PCW-00003003.
16. THIS DRAWING SUPERSEDES 24590-HLW-M6-HMP-00004 REV 5. THIS DRAWING INCLUDES INFORMATION FROM 24590-HLW-M6LN-HMP-00001, -00003, 24590-HLW-M6N-HMP-00058, -00082, -00084, -20023, AND -20028.
17. REVISION 1: REVISED DEPICTION OF C&I SUPPLIED VALVE FROM GATE TO BALL. REVISED OFF SHEET CONNECTOR. ADDED NOTE. THIS P&ID HAS BEEN REVIEWED BY E&NS FOR ALL LIMITED AND PHYSICALIZATION CHANGE DOCUMENTS THAT WERE PREVIOUSLY ISSUED (SEE CCN 255808).

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-HLW-3YD-HMP-00001, SYSTEM DESCRIPTION FOR THE HLW MELTER PROCESS SYSTEM (HMP).

DRAWING INDEX	
DWG NO	TITLE
24590-HLW-M6-HMP-00004001	HMP SYSTEM MELTER 1 ELECTRODES

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
1	REVISED PER NOTE 17	RM	TH	RS/RS	TH/[illegible]	11/13/13
0	ISSUED FOR CONSTRUCTION, SEE NOTE 16	TH	JK/GD	RP/SS	SK/CM	01/23/12

REVISION HISTORY

Q
QUALITY DESIGNATOR

ISSUED BY RPP-WTP PDC
ISSUE STAMP

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	30

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

	BY	DATE
ORIGINATOR	TANNER HILDERBRAND	01/10/12
CHECKER	KHANDAR,J/REINEMAN,D	01/10/12
APPROVER	KRETZSCHMAR,S/MUSICK,C	01/23/12
REVIEWER	SMITH, S / PETERS, R	01/12/12

P&ID - HLW
HLW MELTER PROCESS SYSTEM
MELTER 1
ELECTRODES

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-HLW-ADR-M-02-031 REV: 3
E&NS SCREENING REQUIRED? [X] YES [ ] NO E&NS INITIAL IF YES

SCALE: NONE

24590-HLW-M6-HMP-00004001 REV 1

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

'E' SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

R11625122

11/12/2013 8:55:20 AM

PLOTTED BY: gaoakes C:\Work\gaoakes\dms03839\HLWM6HMP00004001.dgn

HMP-SKID-00003
ARGON SUPPLY
11 FT L x 3 FT W x 8 FT H
330 CUBIC FT PER CYLINDER

TSLL-0658 — HLW-M6-HMP-00006002 H8
YC-0761 — HLW-M6-HMP-00007001 C8
PDSHH-0139H — HLW-M6-HMP-00013002 G2
YI-0819A/B — HLW-M6-HMP-00008001 G2
LSHH-0820B — HLW-M6-HMP-00008002 E2
LSLL-0131 — HLW-M6-HMP-00013002 F2
INSTRUMENT AIR — HLW-M6-ISA-00004001 B2 — ISA-GL-37909-S10A-001/2 — 1/2" SS

ISA S10A — HMP TUBING NOTE 11 — IV III — CMCM

HOLD 1 — POST-SEISMIC SAFE SHUT-DOWN

HMP-RK-00020 NOTE 20
N29

1/2" SS — INSTRUMENT AIR — HLW-M6-HMP-00007001 F8
HMP-V-71686
SET @ 80 PSIG — PCV 0641 — HMP-V-71682
NOTE 6
1/2" SS
HMP-V-71681
HMP-V-71679
HMP-V-71680
HMP-V-71678 — 1/2" SS — ARGON GAS — HLW-M6-HMP-00007001 E8
HMP-V-71677 — 1" SS — ARGON GAS — HLW-M6-HMP-00013001 D7
1" SS

NOTE 13
FV 0643 — FE 0643 — FT 0643 — FC 0643
FC — MINIMUM DISTANCE — FC
HMP-V-71684
FV 0648 — FE 0648 — FT 0648 — FC 0648
NOTE 13
FQ
1/2" SS — HMP-V-71685

NOTE 9
ZI — I — Z
FI 0643 L
FK 0643
TC 0664 — HS — O/C
NOTE 19
ZSL 0664 Z — ZSH 0664 Z
VENT
S — YY 0664 — 3/8" TUBING — ISA — ISA-V-71910
VENDOR — BECHTEL
CMCM IIIIV — TUBING — S10A
NOTE 11 — 1/2" SS — HMP-GL-32178-S10A-001/2 — HMP-RK-00021 — HLW-M6-HMP-00006002 E8
N34
FI 0648 L
FK 0648

SAFE LOCATION — HMP-GA-32346-S10A-01 — N03 — SET @ 150 PSIG — PSV 0678 — 1" SS
SAFE LOCATION — HMP-GA-32347-S10A-01 — N02 — SET @ 150 PSIG — PSV 0679 — 1" SS
1" SS — HMP-V-34382 — 1" SS
1/2" SS — HMP-V-34380 (D) — 1/2" SS — HMP-V-34381 (D)
1" SS

HMP-SKID-00003

CM CM — III IV — TUBING NOTE 11 — S10A — N30 — 1" SS
HMP-V-02919 — HMP-GA-02032-S10A-001/2 — HMP-RK-00022 — HLW-M6-HMP-00006001 C8
HMP-GA-02033-S10A-01
HMP-V-12154 NOTE 8
N01

TUBING — PIPING — 1" SS — VENDOR — BECHTEL
HMP-V-34374 — 5/8" SS — HMP-V-34375 — 5/8" SS

PT 0670 — 5/8" SS — HMP-V-71657 — HMP-V-71658
CHANGE OVER SYSTEM
PI 0677
SET @ 50 PSIG — PCV 0676
SET @ 150 PSIG — PCV 0671 — PI 0672
PI 0675 — SET @ 150 PSIG — PCV 0674
1/4" SS
PT 0673 — 5/8" SS — HMP-V-71659 — HMP-V-71660
5/8" SS — HMP-V-34372 — HMP-V-34373 — 5/8" SS — HMP-V-34376 — HMP-V-34378 — 5/8" SS
HMP-V-34370 — HMP-V-34371 — 5/8" SS — HMP-V-34377 — HMP-V-34379

HMP-PNL-00011
PAL 0670 — PAL 0673
PSL 0670 — PSL 0673
PY 0670 — PY 0673
PI 0670 L — PI 0673 L

5/8" SS — ARGON GAS — 1/4" SS (TYP) — BANK B
5/8" SS — ARGON GAS — 1/4" SS (TYP) — BANK A

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. DELETED
6. RACK MOUNTED PRESSURE REGULATORS (PCV) ARE PROVIDED WITH AN INTEGRAL PRESSURE INDICATOR.
7. DELETED
8. VALVE IS LOCATED OUTSIDE THE BUILDING ADJACENT TO HMP-SKID-00003.
9. REFER TO 24590-HLW-M1-HPH-00001 FOR SAFETY INTERLOCK TO MELTER 1 EAST POUR TUNNEL CANNISTER BOGIE.
10. DELETED
11. PIPING WILL TERMINATE AT A MAXIMUM DISTANCE OF 5'-0" FROM THE END OF THE RACK WITH A FNPT CONNECTION.
12. DELETED
13. FLOW CONTROL (FC) IS INTEGRAL TO THE VALVE. ACTUAL SET POINT PROVIDED FROM ICN.
14.-18. DELETED
19. AIRLIFT AIR ISOLATION SIGNAL IS USED IN HLW HPH: CANISTER POUR HANDLING SYSTEM FOR BOGIE/DRIVE SEQUENCES.
20. THIS DRAWING SUPERSEDES 24590-HLW-M6-HMP-00006 REV 5. THIS DRAWING INCLUDES INFORMATION FROM: 24590-HLW-M6LN-HMP-00001, -00003, 24590-HLW-M6N-HMP-00058, -00059, -00082, -00086, -20018, -20020, -20023, AND -20030.
21. INSTRUMENTATION INSIDE THE RACK TO BE PROCURED BY C&I AND INSTALLED BY VENDOR. VENDOR TO SUPPLY AND INSTALL TUBING, MANUAL VALVES, CHECK VALVES, AND REDUCER.
22. REVISION 1: INCORPORATED 24590-HLW-M6N-HMP-00074, -00094 -20047. ADDED/DELETED/REVISED VALVE TAGS, LINE SIZES, REFERENCES, INSTRUMENTATION, EQUIPMENT DESCRIPTION, HOLD, AND NOTES. REVISED DEPICTION OF C&I SUPPLIED VALVE FROM GATE TO BALL. PORTIONS OF THIS DRAWING WAS TRANSFERRED TO 24590-HLW-M6-HMP-00006002. THIS P&ID HAS BEEN REVIEWED BY E&NS FOR ALL LIMITED AND PHYSICALIZATION CHANGE DOCUMENTS THAT WERE PREVIOUSLY ISSUED (SEE CCN 255808).

HOLD/OPEN ITEMS:

1. PENDING PPJ DESIGN.
2. DELETED

REFERENCES:

1. 24590-HLW-3YD-HMP-00001, SYSTEM DESCRIPTION FOR THE HLW MELTER PROCESS SYSTEM (HMP).
2.-5. DELETED

DRAWING INDEX

DWG NO	TITLE
24590-HLW-M6-HMP-00006001	HMP SYS MLTR 1 EAST DISCHARGE HTRS & AIRLIFT
24590-HLW-M6-HMP-00006002	HMP SYS MLTR 1 EAST DISCHARGE HTRS & AIRLIFT

REVISION HISTORY

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
1	REVISED PER NOTE 22	RM	TH	RS/RS	TH/	12/10/13
0	ISSUED FOR CONSTRUCTION, SEE NOTE 20	TH	NJ	SS/RP	SK/CM	7-20-11

Q — QUALITY DESIGNATOR

ISSUED BY RPP-WTP PDC — ISSUE STAMP

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	30	

	BY	DATE
ORIGINATOR	HILDERBRAND, TANNER	7-20-11
CHECKER	JOHNSON, NGA T	7-20-11
APPROVER	KRETZSCHMAR/MUSICK,C	7-20-11
REVIEWER	SMITH, S/PETERS, R	7-20-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-HLW-ADR-M-02-031 REV: 3
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 - HLW HLW MELTER PROCESS SYSTEM MELTER 1 EAST DISCHARGE HEATERS AND AIRLIFT

SCALE: NONE
24590-HLW-M6-HMP-00006001
REV 1

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

D1 SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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12/5/2013 6:56:45 AM

PLOTTED BY: gpookes
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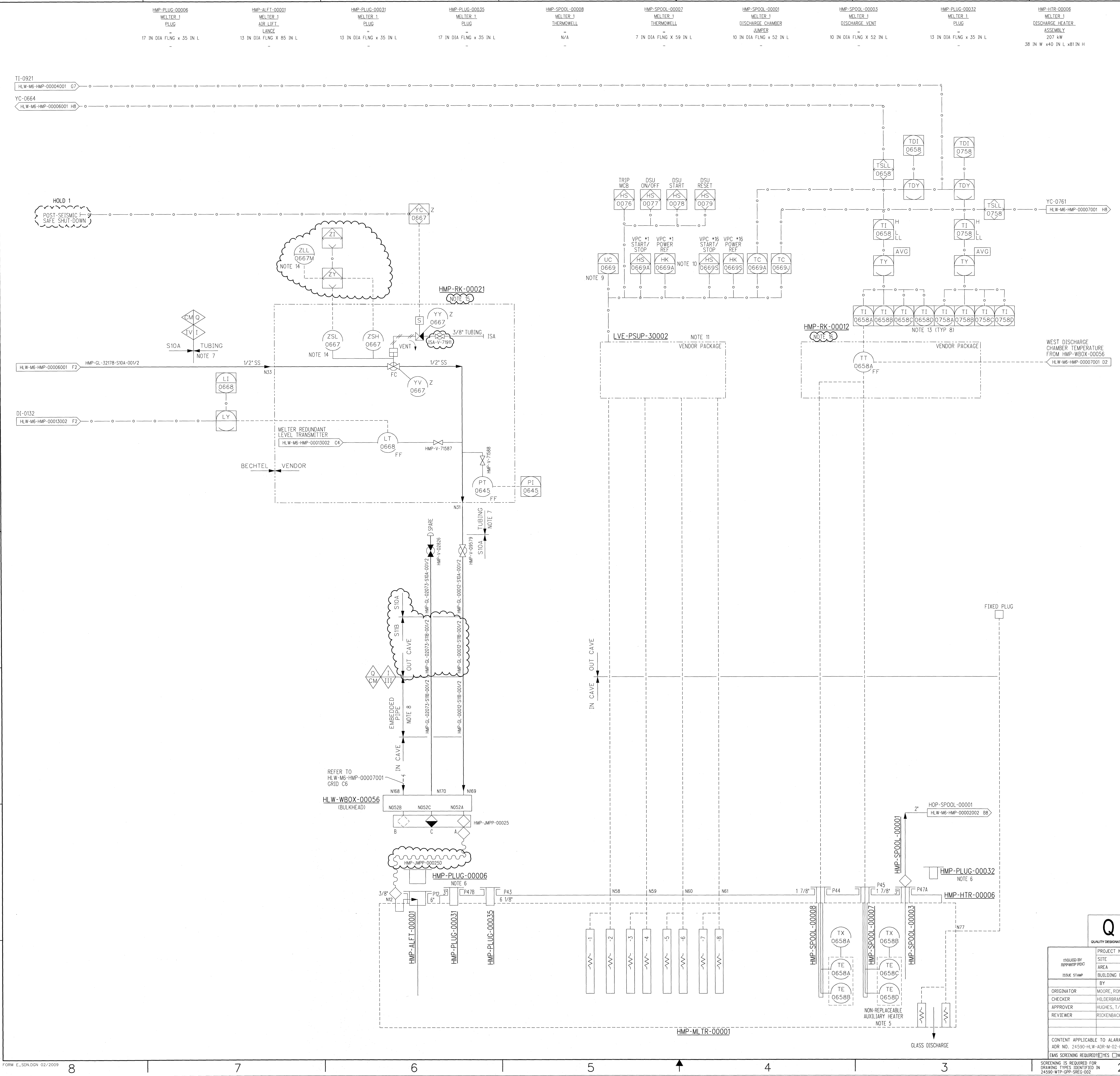
Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility 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.

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 PIPING SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
5. DISCHARGE AUXILIARY HEATER PRE-WIRED FOR FUTURE USE. HEATER RATED AT 4 KW, 208 VOLTS AND SINGLE PHASE.
6. PLUGS ARE ALTERNATE INSERTS FOR MELTER PORTS.
7. PIPING WILL TERMINATE AT A MAXIMUM DISTANCE OF 5'-0" FROM THE END OF THE RACK WITH A FNPT CONNECTION.
8. ALTHOUGH THE PIPE SPEC BREAK FROM S11B IS DEPICTED AT THE OUT CAVE WALL PENETRATION IT MAY BE LOCATED ANYWHERE FROM EMBED PORTION UP TO THE FIRST VALVE TO SUPPORT LAYOUT CONSTRAINTS. THE S11B PIPE SPECIFICATION SATISFIES THE REQUIREMENTS OF THE INTERFACING PIPE SPECIFICATION.
9. DISCHARGE HEATER POWER SUPPLY OPERATION IS INITIATED AND OPERATIONAL STATUS IS MONITORED FROM THE FACILITY CONTROL SYSTEM WHEN IN REMOTE MODE AND LOCAL PANELS WHEN IN LOCAL MODE. TAG REPRESENTS MULTIPLE CONTROL AND INDICATING PARAMETERS FOR ALL EAST AND WEST DISCHARGE CHAMBER HEATER POWER SUPPLY AVAILABLE TO FACILITY OPERATOR. CONTROL SIGNAL ORIGINATES FROM AVERAGE DISCHARGE CHAMBER TEMPERATURES.
10. EACH HEATER VPC HAS A START/STOP HAND SWITCH (HMP-HS-0669) AND A POWER REFERENCE AUTO/MANUAL STATION (HMP-HK-0669). TAG NUMBERS ARE LISTED IN TABLE 'A'.
11. POWER SUPPLY SEPARATELY CONTROLS BOTH THE EAST AND WEST DISCHARGE CHAMBERS,
12. SEE VENDOR DRAWING 24590-CM-POA-EY00-00002-03-00006 FOR POWER SUPPLY PACKAGE DETAILS.
13. INDIVIDUAL DISCHARGE CHAMBER TEMPERATURE INDICATORS HAVE HIGH ALARMS ON RATE OF CHANGE AND ON DIFFERENTIAL FROM AVERAGE DISCHARGE CHAMBER TEMPERATURE.
14. INSTRUMENT PROVIDES A POST ACCIDENT MONITORING FUNCTION.
15. INSTRUMENTATION INSIDE THE RACK TO BE PROCURED BY C&I AND INSTALLED BY VENDOR. VENDOR TO SUPPLY AND INSTALL TUBING AND MANUAL VALVES.
16. INSTRUMENTATION INSIDE THE RACK TO BE PROCURED BY C&I AND INSTALLED BY VENDOR.
17. THIS DRAWING DEPICTS PORTIONS OF THE SYSTEM THAT WERE TRANSFERRED FROM 24590-HLW-M6-HMP-00006001, REV 0. THIS DRAWING INCLUDES INFORMATION FROM 24590-HLW-M6N-HMP-00094 AND -20047. REVISED DEPICTION OF C&I SUPPLIED VALVE FROM GATE TO BALL. THIS P&ID HAS BEEN REVIEWED BY E&NS FOR ALL LIMITED AND PHYSICALIZATION CHANGE DOCUMENTS THAT WERE PREVIOUSLY ISSUED (SEE CCN 255808). REVISED NOTE.

HOLD/OPEN ITEMS:

1. PENDING PPJ DESIGN.

REFERENCES:

1. 24590-HLW-3YD-HMP-00001, SYSTEM DESCRIPTION FOR THE HLW MELTER PROCESS SYSTEM (HMP).

TABLE A

EAST CHAMBER HEATERS			WEST CHAMBER HEATERS		
VPC	HMP-HS	HMP-HK	VPC	HMP-HS	HMP-HK
1	0669A	0669A	9	0669J	0669J
2	0669B	0669B	10	0669K	0669K
3	0669C	0669C	11	0669L	0669L
4	0669D	0669D	12	0669M	0669M
5	0669E	0669E	13	0669N	0669N
6	0669F	0669F	14	0669P	0669P
7	0669G	0669G	15	0669R	0669R
8	0669H	0669H	16	0669S	0669S

Q
QUALITY DESIGNATOR

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 17	RM	TH	RR/RS	TH/SPK	12/10/13

REVISION HISTORY

ISSUED BY RPP-WTP PDC
ISSUE STAMP

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	30

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

	BY	DATE
ORIGINATOR	MOORE, RONNIE	11/04/13
CHECKER	HILDERBRAND, TANNER	11/05/13
APPROVER	HUGHES, T/	
REVIEWER	RICKENBACH,R/STEVENS,R	11/13/13

P&ID - HLW
HLW MELTER PROCESS SYSTEM
MELTER 1
EAST DISCHARGE
HEATERS AND AIRLIFT

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-HLW-ADR-M-02-031 REV: 3
E&NS SCREENING REQUIRED? [X] YES [ ] NO E&NS INITIAL IF YES

SCALE: NONE

24590-HLW-M6-HMP-00006002 REV 0

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

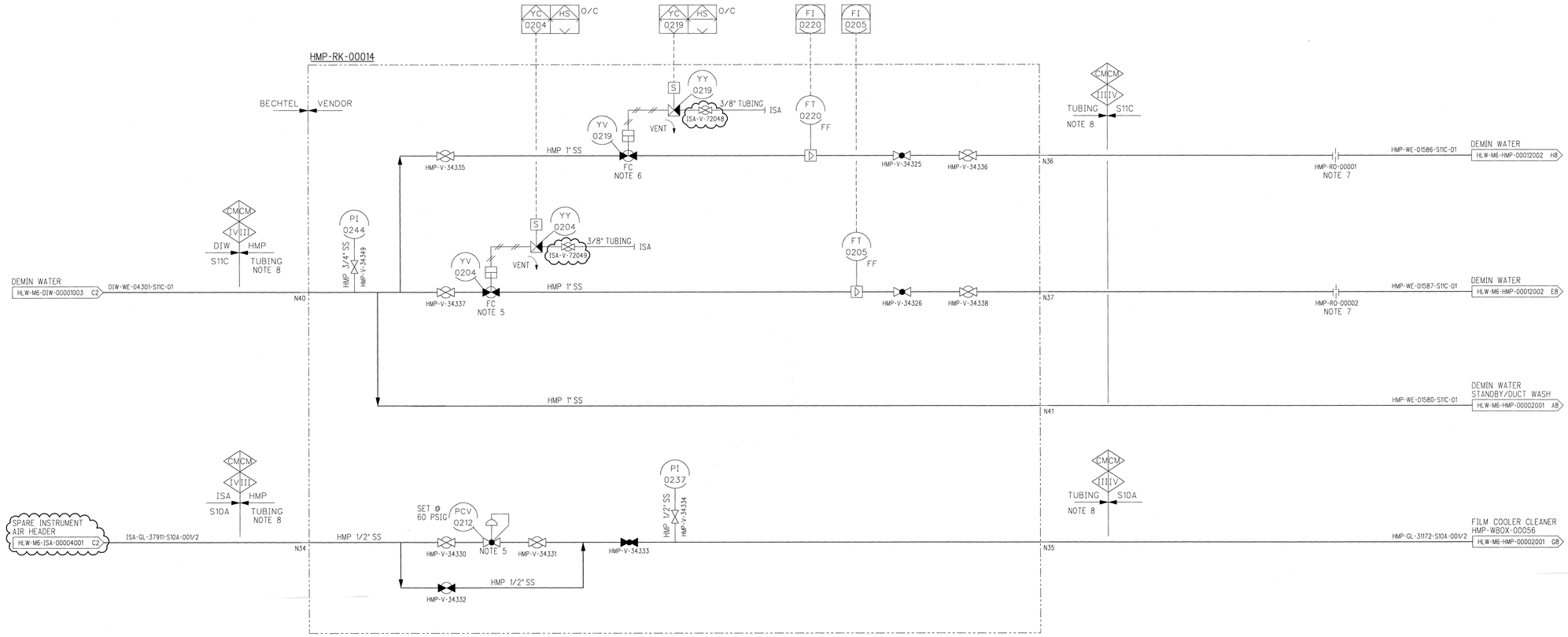
'E' SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

R11628436

12/5/2013 12:46:44 PM

PLOTTED BY: gaoakes C:\Work\gaoakes\dms03839\HLWM6HMP00006002.dgn

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, UNLESS OTHERWISE NOTED.
5. RACK MOUNTED PRESSURE REGULATORS (PCV) ARE PROVIDED WITH AN INTEGRAL PRESSURE INDICATOR.
6. ANGLE BODY PISTON VALVE CONSISTING OF A VALVE BODY, VALVE ACTUATOR AND PILOT SOLENOID.
7. RESTRICTION ORIFICE SIZED TO LIMIT MAXIMUM FLOW TO PREVENT MELTER PRESSURIZATION.
8. PIPING WILL TERMINATE AT A MAXIMUM DISTANCE OF 5 FEET FROM THE END OF THE RACK WITH A FNPT CONNECTION.
9. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-HLW-M6-HMP-00012 REV 5. THIS DRAWING INCLUDES INFORMATION FROM 24590-HLW-M6LN-HMP-00001, 24590-HLW-M6N-HMP-00083, -00087, -20023, AND -20033.
10. REVISION 1: REVISED DEPICTION OF C&I SUPPLIED VALVE FROM GATE TO BALL AND OFF SHEET CONNECTOR. THIS P&ID HAS BEEN REVIEWED BY E&NS FOR ALL LIMITED AND PHYSICALIZATION CHANGE DOCUMENTS THAT WERE PREVIOUSLY ISSUED (SEE CCN 255808).

HOLD/OPEM ITEMS:

NONE

REFERENCES:

1. 24590-HLW-3YD-HMP-00001, SYSTEM DESCRIPTION FOR THE HLW MELTER PROCESS SYSTEM (HMP).

DRAWING INDEX	
DWG NO	TITLE
24590-HLW-M6-HMP-00012001	HLW MELTER PROCESS SYSTEM MELTER 1 FILM COOLER
24590-HLW-M6-HMP-00012002	HLW MELTER PROCESS SYSTEM MELTER 1 FILM COOLER

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
1	REVISED PER NOTE 10	ML	TH	JL/RS	TH APK	10/2/13
0	ISSUED FOR CONSTRUCTION, SEE NOTE 9	TH	RS	RP/SS	SK/MB	08/13/11

REVISION HISTORY

CM
QUALITY DESIGNATOR

ISSUED BY RPP-WTP PDC
ISSUE STAMP

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	30

	BY	DATE
ORIGINATOR	HILDERBRAND, TANNER	08/09/11
CHECKER	SLOCUMB, RENEE	08/09/11
APPROVER	KRETZSCHMAR,S/BARCCIA	08/13/11
REVIEWER	SMITH, S/PETERS, R	08/10/11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-HLW-ADR-M-02-031 REV: 3
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

E SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

BECHTEL
RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - HLW
HLW MELTER PROCESS SYSTEM
MELTER 1
FILM COOLER
UTILITIES

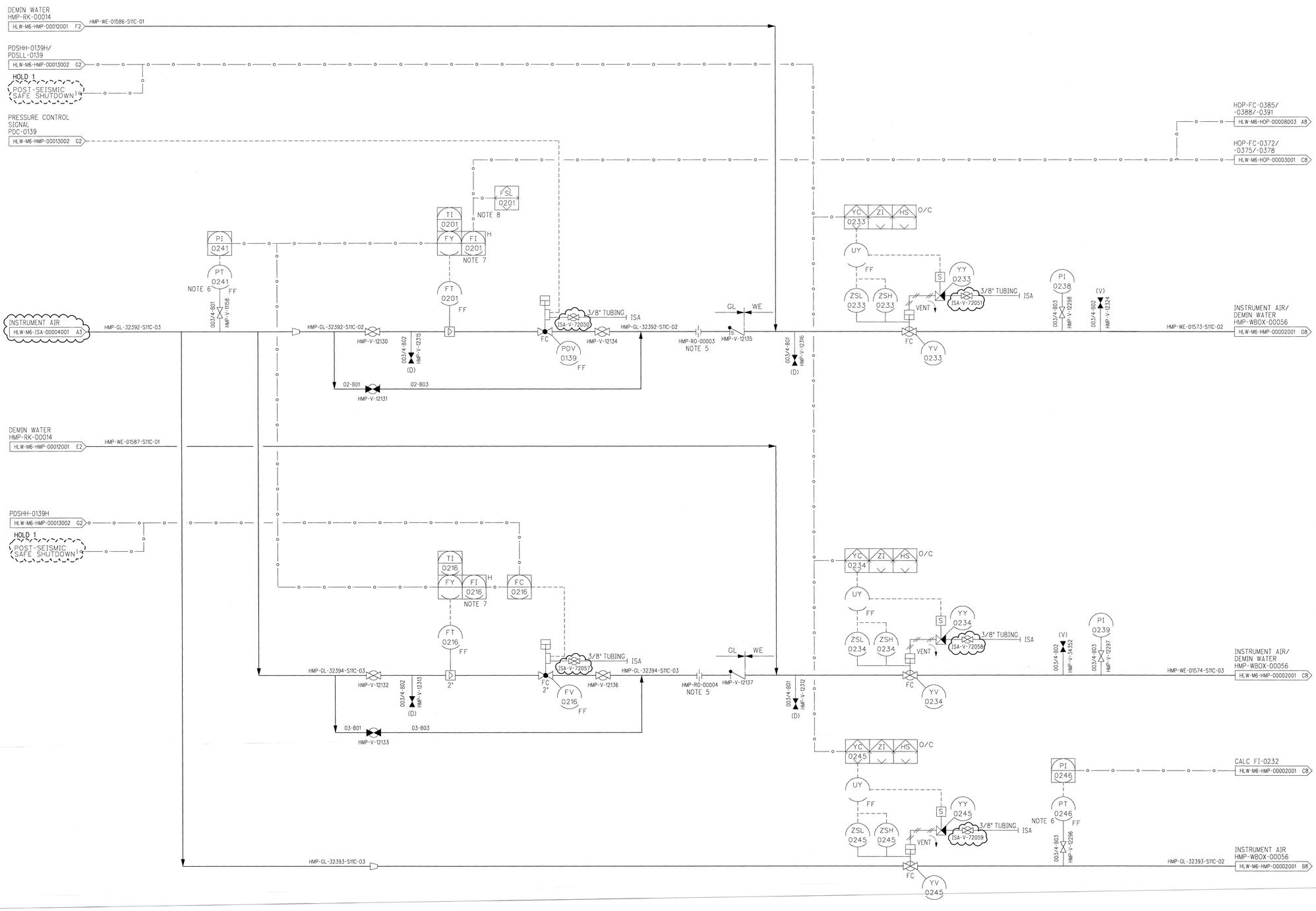
SCALE: NONE

24590-HLW-M6-HMP-00012001

REV 1

R11612383

9/26/2013 7:12:40 AM



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, UNLESS OTHERWISE NOTED.
5. RESTRICTION ORIFICE SIZED TO LIMIT MAXIMUM FLOW TO PREVENT MELTER PRESSURIZATION.
6. PT IS PROVIDED WITH INTEGRAL INDICATOR. PT'S ARE LINE MOUNTED AND ACCESSIBLE TO OPERATIONS.
7. FUNCTION PERFORMS DENSITY CORRECTION TO FLOW TRANSMITTER READING.
8. ON LOSS OF CONTROL/INJECTION AIR, HOP BOOSTER AND STACK FANS' CONTROL IS TRANSFERRED TO MELTER PLENUM PRESSURE.
9. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-HLW-M6-HMP-00012 REV 5. THIS DRAWING INCLUDES INFORMATION FROM 24590-HLW-M6N-HMP-00083, -00087, -20023, -20033, AND 24590-HLW-M6PN-HMP-00002.
10. REVISION 1: REVISED DEPICTION OF C&I SUPPLIED VALVE FROM GATE TO BALL AND OFF SHEET CONNECTOR. THIS P&ID HAS BEEN REVIEWED BY E&NS FOR ALL LIMITED AND PHYSICALIZATION CHANGE DOCUMENTS THAT WERE PREVIOUSLY ISSUED (SEE CCN 255808).

HOLD/OPEM ITEMS:

1. PENDING PPJ DESIGN.

REFERENCES:

1. 24590-HLW-3YD-HMP-00001, SYSTEM DESCRIPTION FOR THE HLW MELTER PROCESS SYSTEM (HMP).

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	ML	TH	JL/RS	TH	10/2/13
0	ISSUED FOR CONSTRUCTION, SEE NOTE 9	TH	RCS	RP/SS	SK/MB	08/13/11

CM — QUALITY DESIGNATOR

REVISION HISTORY

ISSUED BY RPP-WTP PDC

ISSUE STAMP

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	30

	BY	DATE
ORIGINATOR	HILDERBRAND, TANNER	08/09/11
CHECKER	SLOCUMB, RENEE	08/09/11
APPROVER	KRETZSCHMAR,S/BRACCIA	08/13/11
REVIEWER	SMITH, S/PETERS, R	08/10/11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO

ADR NO. 24590-HLW-ADR-M-02-031 REV: 3

E&NS SCREENING REQUIRED? [X] YES [ ] NO E&NS INITIAL IF YES 2/8

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREQ-002

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - HLW
HLW MELTER PROCESS SYSTEM
MELTER 1
FILM COOLER
UTILITIES

SCALE: NONE

24590-HLW-M6-HMP-00012002

REV 1

"E" SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

R11612384

9/26/2013 7:09:38 AM

PLOTTED BY: spookes C:\Work\spookes\dms03539\HLW\HMP\00012002.dgn

FORM E_SDN.DGN 02/2009

NOTES:

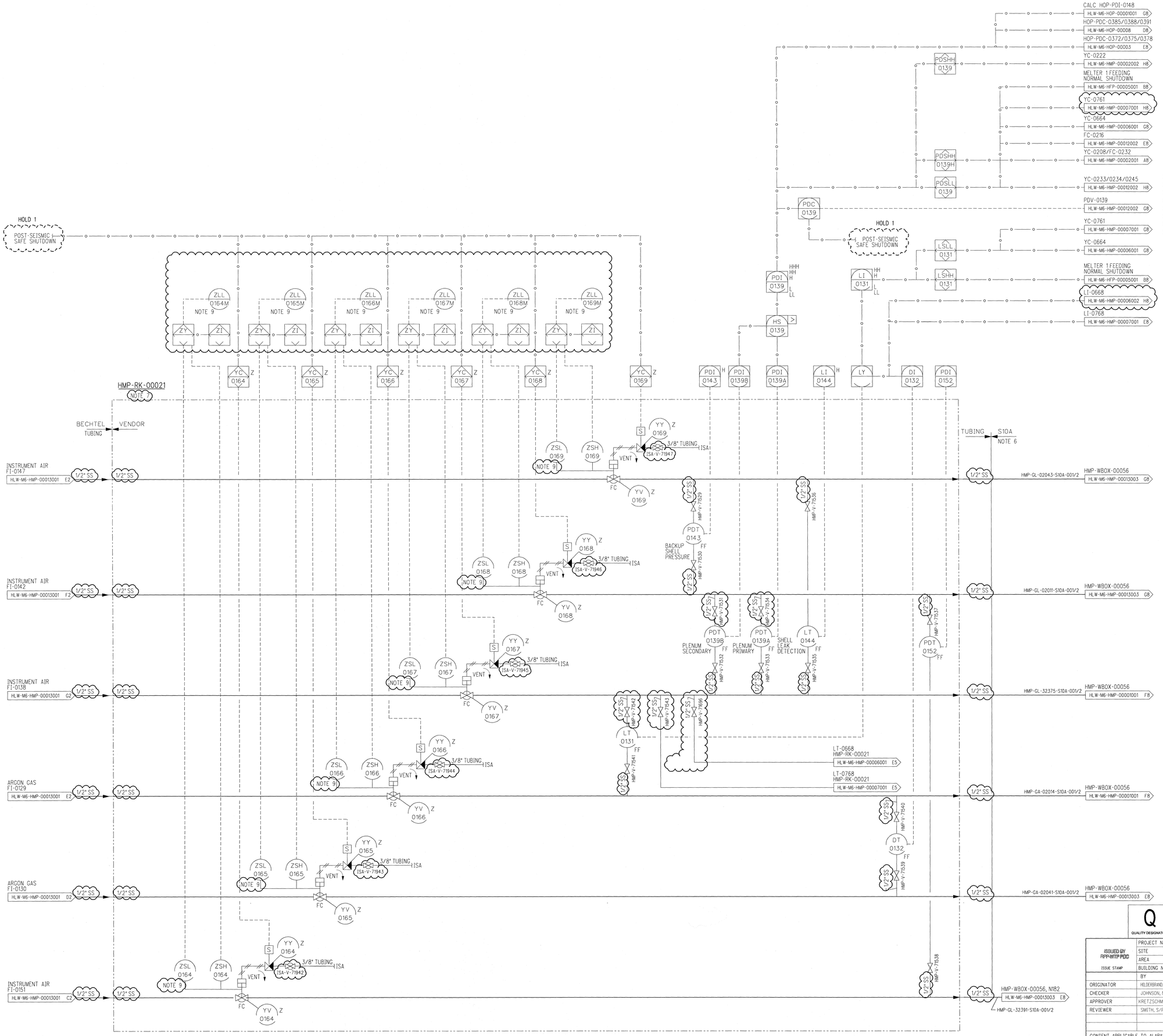
1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL Q AND SEISMIC CATEGORY SC-I, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
5. VARIABLE AREA FLOW METER WITH INTEGRAL FLOW CONTROL VALVE AND PRESSURE REGULATOR.
6. PIPING WILL TERMINATE AT A MAXIMUM DISTANCE OF 5'-0" FROM THE END OF THE RACK WITH A FNPT CONNECTION.
7. INSTRUMENTATION INSIDE THE RACK TO BE PROCURED BY C&I AND INSTALLED BY VENDOR. VENDOR TO SUPPLY AND INSTALL TUBING AND MANUAL VALVES.
8. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-HLW-M6-HMP-00013 REV 5. THIS DRAWING INCLUDES INFORMATION FROM 24590-HLW-M6N-HMP-00059, -00086, -20018, -20023, -20034, AND 24590-HLW-M6LN-HMP-00001.
9. INSTRUMENT PROVIDES A POST ACCIDENT MONITORING FUNCTION AND WILL BE WIRED TO THE PROGRAMMABLE PROTECTION SYSTEM (PPJ).
10. REVISION 1: REVISED DEPICTION OF C&I SUPPLIED VALVE FROM GATE TO BALL, AND INSTRUMENTATION FOR POST ACCIDENT MONITORING FUNCTION. REVISED/ADDED NOTES AND TUBING SIZES. THIS P&ID HAS BEEN REVIEWED BY E&NS FOR ALL LIMITED AND PHYSICALIZATION CHANGE DOCUMENTS THAT WERE PREVIOUSLY ISSUED (SEE CCN 255808).

HOLD/OPEN ITEMS:

1. PENDING PPJ DESIGN

REFERENCES:

1. 24590-HLW-3YD-HMP-00001, SYSTEM DESCRIPTION FOR THE HLW MELTER PROCESS SYSTEM (HMP).



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	RM	TH	RS/RS	TH/JK	12/10/13
0	ISSUED FOR CONSTRUCTION, SEE NOTE 8	TH	NJ	RP/SS	SK/MG	08/15/11

REVISION HISTORY

Q — QUALITY DESIGNATOR

ISSUED BY RPP-WTP PDC — ISSUE STAMP

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	30	
	BY	DATE
ORIGINATOR	HILDEBRAND, TANNER	08/08/11
CHECKER	JOHNSON, NGA T	08/08/11
APPROVER	KRETZSCHMAR,S/BRACCIA	08/13/11
REVIEWER	SMITH, S/PETERS, R	08/08/11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-HLW-ADR-M-02-031 REV: 3
E&NS SCREENING REQUIRED? [X] YES [ ] NO | E&NS INITIAL IF YES: JS

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - HLW
HLW MELTER PROCESS SYSTEM MELTER 1 PRESSURE, DENSITY AND LEVEL DETECTION HMP-RK-00021

SCALE: NONE
24590-HLW-M6-HMP-00013002
REV 1

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

E-SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

R11626609

12/5/2013 12:52:59 PM

PLOTTED BY: gpocakes C:\Work\gpocakes\cmd\383191\HLW\M6\HMP\00013002.dgn

FORM E_SDN.DGN 02/2009

NOTES:

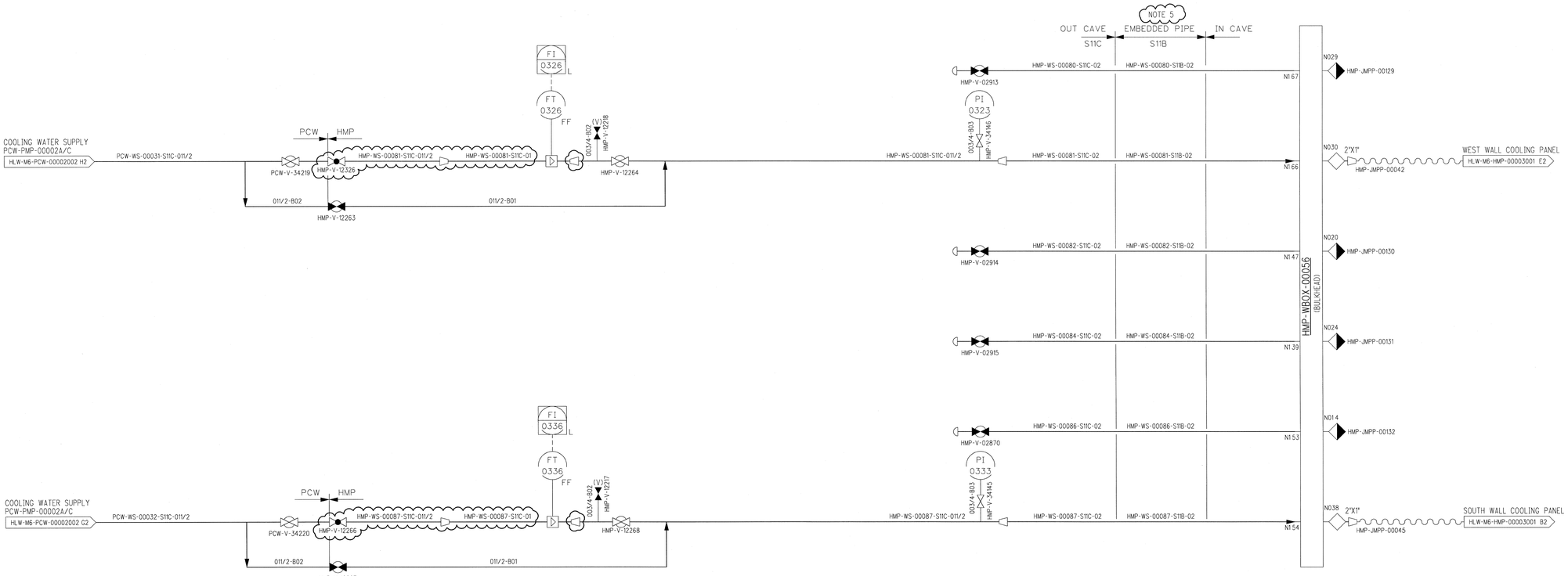
1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
5. ALTHOUGH THE PIPE SPECIFICATION BREAK FROM S11B IS DEPICTED AT THE OUT CAVE WALL PENETRATION, IT MAY BE LOCATED ANYWHERE FROM EMBEDDED PORTION UP TO THE FIRST VALVE TO SUPPORT LAYOUT CONSTRAINTS. THE S11B PIPE SPECIFICATION SATISFIES THE REQUIREMENTS OF THE INTERFACING PIPE SPECIFICATION.
6. THIS DRAWING SUPERSEDES 24590-HLW-M6-HMP-00014 REV 5. THIS DRAWING INCLUDES INFORMATION FROM 24590-HLW-M6N-HMP-20035, 24590-HLW-M6LN-HMP-00003, AND 24590-HLW-M6PR-HMP-00001.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-HLW-3YD-HMP-00001, SYSTEM DISCRIPTION FOR THE HLW MELTER PROCESS SYSTEM (HMP).



DRAWING INDEX	
DWG NO	TITLE
24590-HLW-M6-HMP-00014001	HMP SYS MELTER 1 REFRACTORY COOLING

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 6	TH	JKM	[illegible]	[illegible]	1-23-12

CM
QUALITY DESIGNATOR

REVISION HISTORY

ISSUED BY PIPE-WTP PDC
INIT. DATE
ISSUE STAMP

	BY	DATE
ORIGINATOR	[signature]	1-10-12
CHECKER	J Khosropour	1-10-12
APPROVER	[signature]	1-25-12
REVIEWER	[signature]	1-12-12
		1-12-12

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	30

BECHTEL
RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - HLW
HLW MELTER PROCESS SYSTEM
MELTER 1 REFRACTORY COOLING

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-HLW-ADR-M-02-031 REV: 3
E&NS SCREENING REQUIRED? [X] YES [ ] NO E&NS INITIAL IF YES SDS

SCALE: NONE

24590-HLW-M6-HMP-00014001

REV 0

R11475647

1/9/2012 2:31:04 PM

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PLOTTED BY: eldonh

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.

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

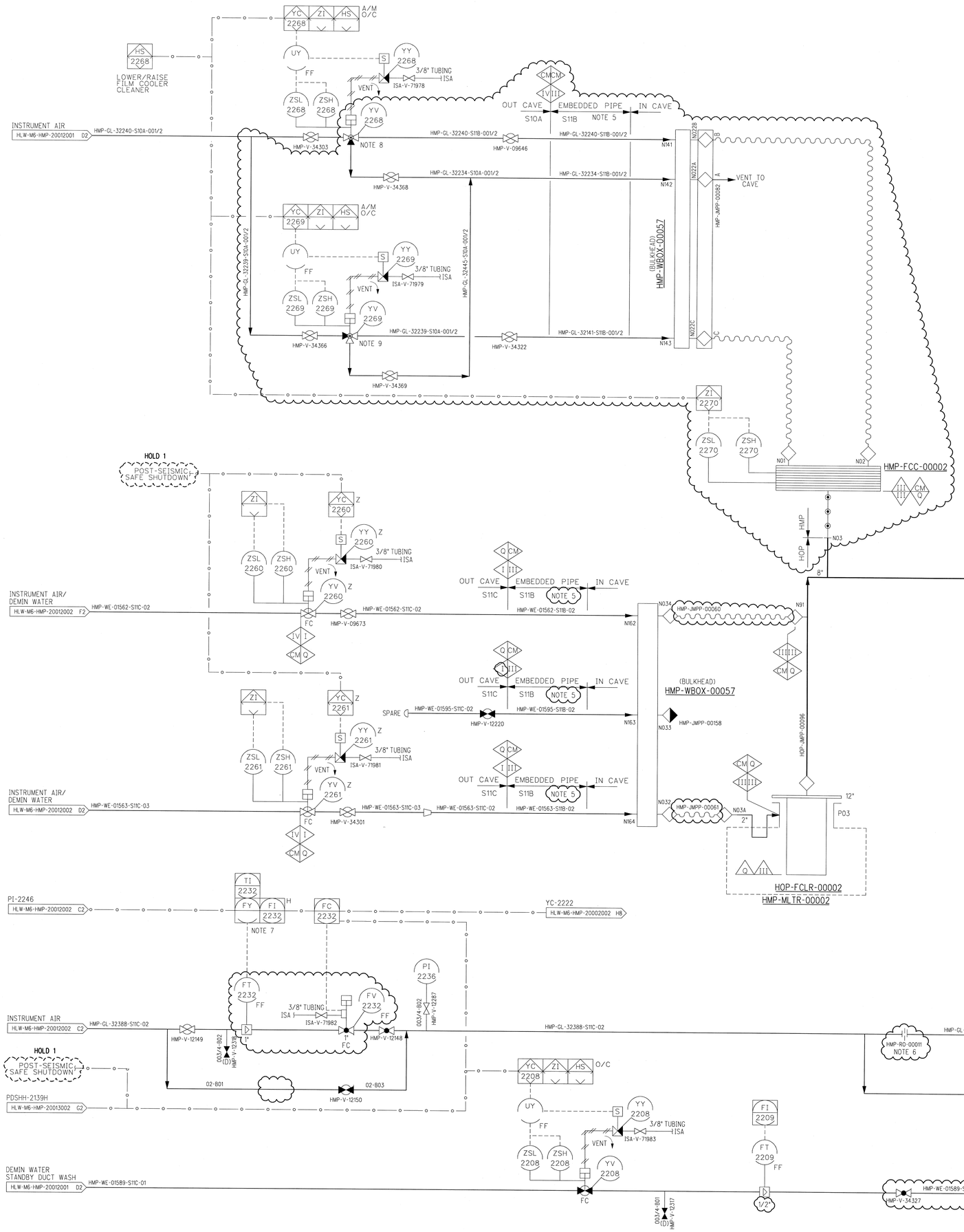
'E' SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

FORM E_SDN.DGN 02/2009

24590-HLW-M6-HMP-20002001

HMP-FCC-00002 FILM COOLER CLEANER

HOP-FCLR-00002 MELTER 2 OFFGAS FILM COOLER



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. ALTHOUGH THE PIPE SPEC BREAK FROM S11B IS DEPICTED AT THE OUT CAVE WALL PENETRATION IT MAY BE LOCATED ANYWHERE FROM EMBEDDED PORTION UP TO THE FIRST VALVE TO SUPPORT LAYOUT CONSTRAINTS. THE S11B PIPE SPECIFICATION SATISFIES THE REQUIREMENTS OF THE INTERFACING PIPE SPECIFICATION.
6. RESTRICTION ORIFICE SIZED TO LIMIT MAXIMUM FLOW TO PREVENT MELTER PRESSURIZATION.
7. FUNCTION PERFORMS DENSITY CORRECTION TO FLOW TRANSMITTER READING.
8. VALVE OPEN POSITION ALIGNS TO VENT CYLINDER TO CAVE LOWERING THE CLEANER PLUNGER. VALVE CLOSED POSITION ALIGNS FEED AIR TO THE CYLINDER RAISING THE CLEANER PLUNGER. VALVE TO FAIL WITH PLUNGER IN UP POSITION.
9. VALVE OPEN POSITION ALIGNS FEED AIR TO THE CYLINDER LOWERING THE CLEANER PLUNGER. VALVE CLOSED POSITION ALIGNS TO VENT CYLINDER TO CAVE RAISING THE CLEANER PLUNGER. VALVE TO FAIL WITH PLUNGER IN UP POSITION.
10. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-HLW-M6-HMP-20002 REV 7. THIS DRAWING INCLUDES INFORMATION FROM 24590-HLW-M6LN-HMP-00003, 24590-HLW-M6N-HMP-00082, -00084, -00087, -00088, -20020, -20023, -20037, 24590-HLW-M6PN-HMP-00004, AND 24590-HLW-M6PR-HMP-00001.

HOLD/OPEN ITEMS:

1. PENDING PPJ DESIGN.

REFERENCES:

1. 24590-HLW-3YD-HMP-00001, SYSTEM DESCRIPTION FOR THE HLW MELTER PROCESS SYSTEM (HMP).

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-HLW-M6-HMP-20002001	HMP SYS MELTER 2 FILM COOLER
24590-HLW-M6-HMP-20002002	HMP SYS MELTER 2 FILM COOLER

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 10	TR	[illegible]	[illegible]	[illegible]	8-13-11

REVISION HISTORY

Q QUALITY DESIGNATOR

ISSUED BY RPP-WTP PDC — TRY — DATE — ISSUE STAMP

	BY	DATE
ORIGINATOR	[illegible]	7/29/11
CHECKER	[illegible]	8/2/11
APPROVER	[illegible]	8-13-11
REVIEWER	[illegible]	8-4-11
	[illegible]	8/12/11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-HLW-ADR-M-02-031 REV: 3
E&NS SCREENING REQUIRED? [X] YES [ ] NO E&NS 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

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - HLW
HLW MELTER PROCESS SYSTEM
MELTER 2
FILM COOLER
AND OFFGAS CONNECTION

SCALE: NONE

24590-HLW-M6-HMP-20002001 REV 0

R11415257

7/29/2011 2:45:41 PM

PLOTTED BY: amathorney

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FORM E_SDN.DGN 02/2009

HOP-SPOOL-00002 MELTER 2 STANDBY OFFGAS SPOOL

HOP-FCLR-00004 MELTER 2 STANDBY OFFGAS INSERT

FC-2232 HLW-M6-HMP-20002001 C6

PDSHH-2139 HLW-M6-HMP-20013002 H2

HOLD 1 POST-SEISMIC SAFE SHUTDOWN

HOP-RK-00028

BECHTEL VENDOR NOTE 11

DEMIN WATER HLW-M6-DIW-00001002 C8 — DIW-WE-43583-S11C-001/2

INSTRUMENT AIR HLW-M6-ISA-00003002 D2 — ISA-GL-50932-C12A-001/2

HOP-V-11870 HOP-V-11916 HOP-V-11869 HOP-V-11865 ISA-V-36103

HMP-WE-01591-S11C-001/2 HMP-WE-01591-S11C-001/2

HMP-GQ-01553-S11C-001/2 HMP-GQ-01553-S11C-001/2

HMP-V-09683 HMP-V-09684 HMP-V-09682

SPARE HMP-WE-01592-S11C-001/2

VENT TO MELTER CAVE/C5 AREA HOP-JMPP-00042 8"

VENT TO MELTER CAVE/C5 AREA HOP-JMPP-00043 8"

ISA-V-71977 ISA-V-71976 ISA-V-71975 3/8" TUBING ISA

HOP-JMPP-00097 8"

STANDBY OFFGAS SCB-HOP-00002 HLW-M6-HOP-20001001 H8

HOP-WBOX-00076 (WALL MODULE)

HMP-P-DOG-00005 HMP-P-DOG-00005 HMP-P-DOG-00005

HMP-GQ-01553-S11B-001/2 HMP-WE-01592-S11B-001/2 HMP-WE-01591-S11B-001/2

HOP-WBOX-00057 (BULKHEAD)

HMP-V-09580 HMP-WE-01590-S11C-02 HMP-WE-01590-S11B-02

HMP-JMPP-00062 HMP-JMPP-00101 HMP-JMPP-00114

HOP-SPOOL-00002

HOP-MISTR-00014

HOP-PW-20391-N11K-04 HOP-PW-20391-N11K-14 HOP-PW-20391-N11K-02 HOP-PW-20402-N11K-02

SBS BYPASS HLW-M6-HOP-20002002 A8

LOW POINT DRAIN HLW-M6-HOP-20009002 D8

HOP-JMPP-00145

WEST DISCHARGE CHAMBER HLW-M6-HMP-20007001 B3 — HMP-SPOOL-00012

EAST DISCHARGE CHAMBER HLW-M6-HMP-20006001 B3 — HMP-SPOOL-00011

SPARE REFERENCE TAP HMP-JMPP-00159

MELTER PRESSURE REFERENCE TAP PDT-2139A/B HLW-M6-HMP-20001001 C7 — HMP-JMPP-00055

HMP-JMPP-00160

HOP-FCLR-00004

HMP-MLTR-00002

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 FREE DRAINING, UNLESS OTHERWISE NOTED.
5. PIPE INSERT WITH NO ACTIVE AIR COOLING.
6. LOCATE TO ALLOW NUT RUNNER OPERATION VIA OVERHEAD CRANE. VALVE CANNOT CHANGE STATE DURING A DESIGN BASIS SEISMIC EVENT, (SC-I).
7. HOP-PW-20390-N11K-14 IS AN AIR COOLING CHAMBER AND REQUIRES A MINIMUM VOLUME OF 7 CUBIC FEET.
8. PNEUMATIC ACTUATOR IS IN CAVE. REFER TO DRAWING 24590-HLW-M6-ISA-00008 FOR PNEUMATIC LINE WALL PENETRATION DETAILS.
9. ALTHOUGH THE PIPE SPEC BREAK FROM S11B IS DEPICTED AT THE OUT CAVE WALL PENETRATION IT MAY BE LOCATED ANYWHERE FROM EMBED PORTION UP TO THE FIRST VALVE TO SUPPORT LAYOUT CONSTRAINTS. THE S11B PIPE SPECIFICATION SATISFIES THE REQUIREMENTS OF THE INTERFACING PIPE SPECIFICATION.
10. PIPING WILL TERMINATE AT A MAXIMUM DISTANCE OF 5 FEET FROM THE END OF THE RACK WITH A FNPT CONNECTION.
11. TAGGING FOR VENDOR SUPPLIED COMPONENTS, INCLUDING PIPING, TO BE ADDED PENDING FINAL VENDOR DOCUMENTATION SUBMITTAL.
12. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-HLW-M6-HMP-20002 REV 7. THIS DRAWING INCLUDES INFORMATION FROM 24590-HLW-M6LN-HMP-00001, -00003, 24590-HLW-M6N-HMP-00075, -00082, -00084, -00092, -20022, -20023, AND -20037.

HOLD/OPEN ITEMS:

1. PENDING PPJ DESIGN.

REFERENCES:

1. 24590-HLW-3YD-HMP-00001, SYSTEM DESCRIPTION FOR THE HLW MELTER PROCESS SYSTEM (HMP).

REVISION HISTORY

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 12	TH	[illegible]	[illegible]	[illegible]	8-13-11

Q QUALITY DESIGNATOR

ISSUED BY: RPP-WTP PDC

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	30

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

	BY	DATE
ORIGINATOR	[illegible]	8/8/11
CHECKER	[illegible]	8/4/11
APPROVER	[illegible]	8-13-11
REVIEWER	R. Peterson	8-8-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
AIR NO. 24590-HLW-AOR-M-02-031 REV: 3

EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES [illegible]

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN

P&ID - HLW
HLW MELTER PROCESS SYSTEM
MELTER 2
FILM COOLER
AND OFFGAS CONNECTION

SCALE: NONE

24590-HLW-M6-HMP-20002002

REV 0

E-SIZE - 44x34
COMPUTER GENERATED - MANUAL

8/8/2011 11:53:48 AM

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PLOTTED BY: mdrilter

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. REFRACTORY THERMOCOUPLE LOCATIONS RELATIVE TO BOTTOM OF GLASS POOL.
6. THE GEOMETRY OF JOGGLED (OFFSET) PENETRATIONS IS QUALITY LEVEL Q FOR RADIATION PROTECTION. THE QUALITY LEVEL AND SEISMIC CATEGORY DESIGNATIONS OF PIPING WITHIN JOGGLES ARE THE SAMES AS CONNECTING PIPE.
7. ALTHOUGH THE PIPE SPEC BREAK FROM S11B IS DEPICTED AT THE OUT CAVE WALL PENETRATION IT MAY BE LOCATED ANYWHERE FROM EMBED PORTION UP TO THE FIRST VALVE TO SUPPORT LAYOUT CONSTRAINTS. THE S11B PIPE SPECIFICATION SATISFIES THE REQUIREMENTS OF THE INTERFACING PIPE SPECIFICATION.
8. LOCATE OUT CAVE ISOLATION VALVES AS CLOSE AS POSSIBLE TO IN CAVE-OUT CAVE BOUNDARY.
9. THIS DRAWING SUPERSEDES 24590-HLW-M6-HMP-20003 REV 7. THIS DRAWING INCLUDES INFORMATION FROM 24590-HLW-M6N-HMP-00058, -00079, -00081, -00082, -20023, -20038, 24590-HLW-M6LN-00003, -00004 AND 24590-HLW-M6PR-HMP-00001. - HMP

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-HLW-3YD-HMP-00001, SYSTEM DESCRIPTION FOR THE HLW MELTER PROCESS SYSTEM (HMP).

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-HLW-M6-HMP-20003001	MELTER PROC SYS MELTER 2 REFRACTORY COOLING

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 9	TH	JK	SS	[illegible]	8-15-11

REVISION HISTORY

Q QUALITY DESIGNATOR

ISSUED BY RPP-WTP PDC — INT — DATE — ISSUE STAMP

	BY	DATE
ORIGINATOR	[signature]	8/12/11
CHECKER	[signature]	8/12/11
APPROVER	[signature]	8-15-11
REVIEWER	[signature]	8-15-11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-HLW-ADR-M-02-031 REV: 3
EMAIL SCREENING REQUIRED? [X] YES [ ] NO EMAIL INITIAL IF YES

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	30

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - HLW MELTER 2 REFRACTORY COOLING

SCALE: NONE

24590-HLW-M6-HMP-20003001 REV 0

E SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

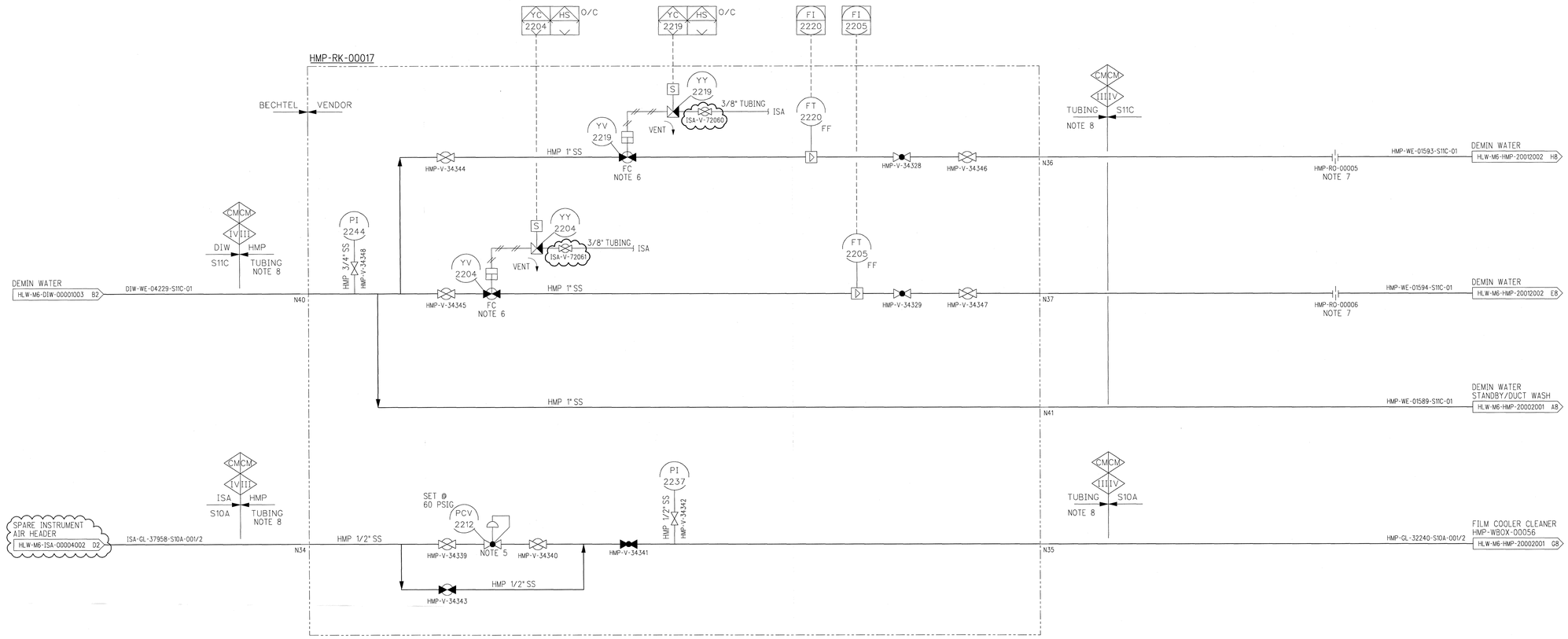
R11415259

8/12/2011 9:55:14 AM

PLOTTED BY: tdaines C:\Work\tdaines\dms03839\HLW\M6\HMP20003001.dgn

FORM E_SDN.DGN 02/2009

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SRG-002



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, UNLESS OTHERWISE NOTED.
5. RACK MOUNTED PRESSURE REGULATORS (PCV) ARE PROVIDED WITH AN INTEGRAL PRESSURE INDICATOR.
6. ANGLE BODY PISTON VALVE CONSISTING OF A VALVE BODY, VALVE ACTUATOR AND PILOT SOLENOID.
7. RESTRICTION ORIFICE SIZED TO LIMIT MAXIMUM FLOW TO PREVENT MELTER PRESSURIZATION.
8. PIPING WILL TERMINATE AT A MAXIMUM DISTANCE OF 5 FEET FROM THE END OF THE RACK WITH A FNPT CONNECTION.
9. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-HLW-M6-HMP-20012 REV 6. THIS DRAWING INCLUDES INFORMATION FROM 24590-HLW-M6LN-HMP-00001, 24590-HLW-M6N-HMP-00083, -00087, -20023, AND -20044.
10. REVISION 1: REVISED DEPICTION OF C&I SUPPLIED VALVE FROM GATE TO BALL AND OFF SHEET CONNECTOR. THIS P&ID HAS BEEN REVIEWED BY E&NS FOR ALL LIMITED AND PHYSICIALIZATION CHANGE DOCUMENTS THAT WERE PREVIOUSLY ISSUED (SEE CCN 255808).

HOLD/OPEM ITEMS:

NONE

REFERENCES:

1. 24590-HLW-3YD-HMP-00001, SYSTEM DESCRIPTION FOR THE HLW MELTER PROCESS SYSTEM (HMP).

DRAWING INDEX	
DWG NO	TITLE
24590-HLW-M6-HMP-20012001	HLW MELTER PROCESS SYSTEM MELTER 2 FILM COOLER
24590-HLW-M6-HMP-20012002	HLW MELTER PROCESS SYSTEM MELTER 2 FILM COOLER

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
1	REVISED PER NOTE 10	ML	TH	JL/RS	TH	10/2/13
0	ISSUED FOR CONSTRUCTION, SEE NOTE 9	TH	RS	RP/SS	SK/MB	08/13/11

REVISION HISTORY

CM
QUALITY DESIGNATOR

ISSUED BY RPP-WTP PDC
ISSUE STAMP

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	30	

	BY	DATE
ORIGINATOR	HILDERBRAND, TANNER	08/09/11
CHECKER	SLOCUMB, RENEE	08/09/11
APPROVER	KRETZSCHMAR,S/BRACCIA	08/13/11
REVIEWER	SMITH, S/PETERS, R	08/10/11

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-HLW-ADR-M-02-031 REV: 3
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES

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 - HLW
HLW MELTER PROCESS SYSTEM
MELTER 2
FILM COOLER
UTILITIES

SCALE: NONE

24590-HLW-M6-HMP-20012001

REV 1

R11612385

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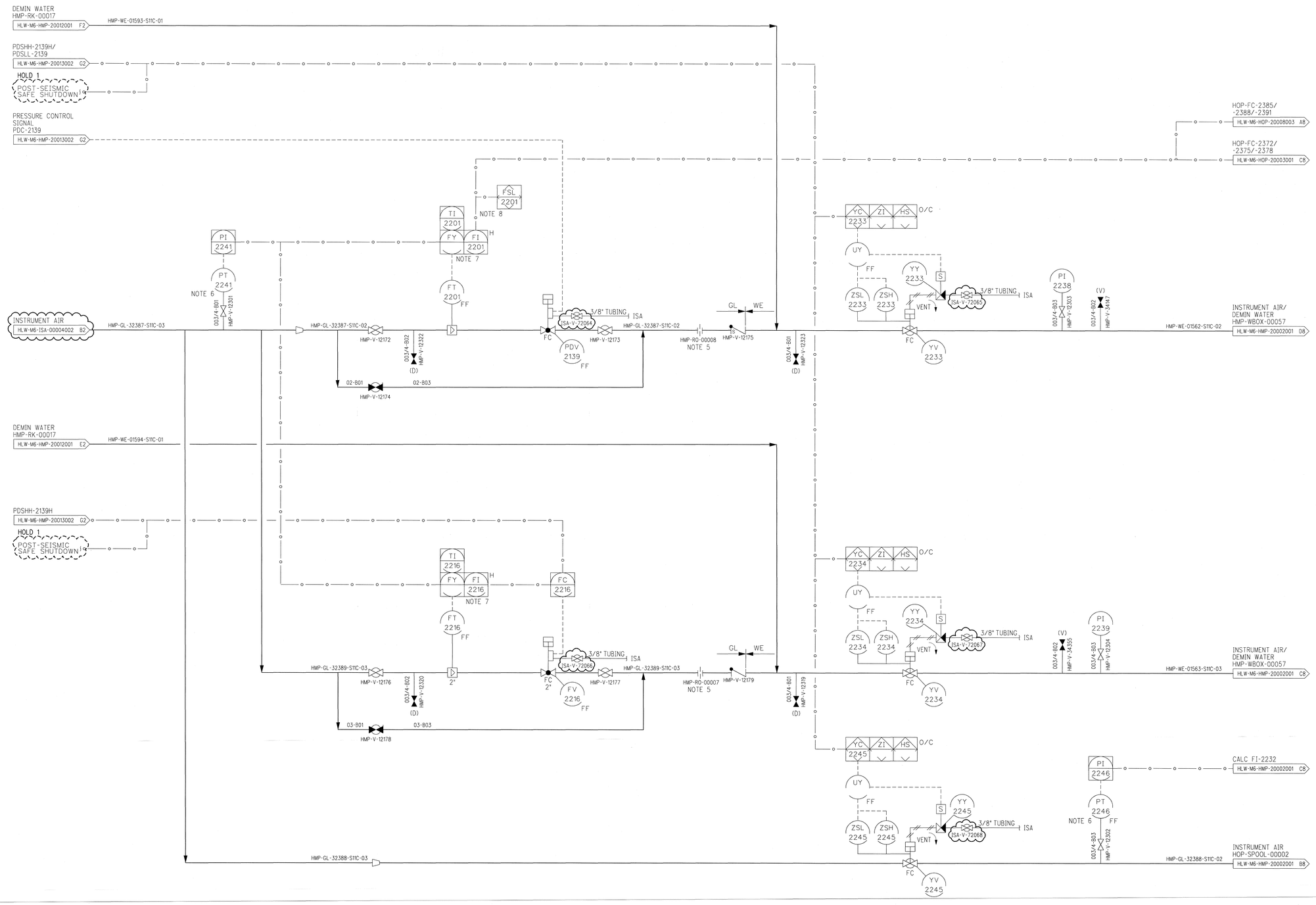

NOTES:

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, UNLESS OTHERWISE NOTED.
5. RESTRICTION ORIFICE SIZED TO LIMIT MAXIMUM FLOW TO PREVENT MELTER PRESSURIZATION.
6. PT IS PROVIDED WITH INTEGRAL INDICATOR. PT'S ARE LINE MOUNTED AND ACCESSIBLE TO OPERATIONS.
7. FUNCTION PERFORMS DENSITY CORRECTION TO FLOW TRANSMITTER READING.
8. ON LOSS OF CONTROL/INJECTION AIR, HOP BOOSTER AND STACK FANS' CONTROL IS TRANSFERRED TO MELTER PLENUM PRESSURE.
9. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-HLW-M6-HMP-20012 REV 6. THIS DRAWING INCLUDES INFORMATION FROM 24590-HLW-M6N-HMP-00083, -00087, -20023, -20044, AND 24590-HLW-M6PN-HMP-00002.
10. REVISION 1: REVISED DEPICTION OF C&I SUPPLIED VALVE FROM GATE TO BALL AND OFF SHEET CONNECTOR. THIS P&ID HAS BEEN REVIEWED BY E&NS FOR ALL LIMITED AND PHYSICIALIZATION CHANGE DOCUMENTS THAT WERE PREVIOUSLY ISSUED (SEE CCN 255808).

HOLD/OPEM ITEMS:

1. PENDING PPJ DESIGN.

REFERENCES:

1. 24590-HLW-3YD-HMP-00001, SYSTEM DESCRIPTION FOR THE HLW MELTER PROCESS SYSTEM (HMP).

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
1	REVISED PER NOTE 10	ML	TH	JL/RS	TH/SPK	10/2/13
0	ISSUED FOR CONSTRUCTION, SEE NOTE 9	TH	RS	RP/SS	SK/MB	08/13/11

REVISION HISTORY

CM — QUALITY DESIGNATOR

ISSUED BY RPP-WTP PDC

ISSUE STAMP

	BY	DATE
ORIGINATOR	HILDERBRAND, TANNER	08/09/11
CHECKER	SLOCUMB, RENEE	08/09/11
APPROVER	KRETZSCHMAR,S/BRACCIA	08/13/11
REVIEWER	SMITH, S/PETERS, R	08/10/11

PROJECT No. 24590
SITE HANFORD
AREA 200E
BUILDING No. 30

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-HLW-ADR-M-02-031 REV: 3
EMS SCREENING REQUIRED? [X] YES [ ] NO EMS INITIAL IF YES: JLS

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.

BECHTEL

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - HLW
HLW MELTER PROCESS SYSTEM
MELTER 2
FILM COOLER
UTILITIES

SCALE: NONE

24590-HLW-M6-HMP-20012002

REV 1

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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PLOTTED BY: gpickes

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FORM E_SDN.DGN 02/2009

NOTES:

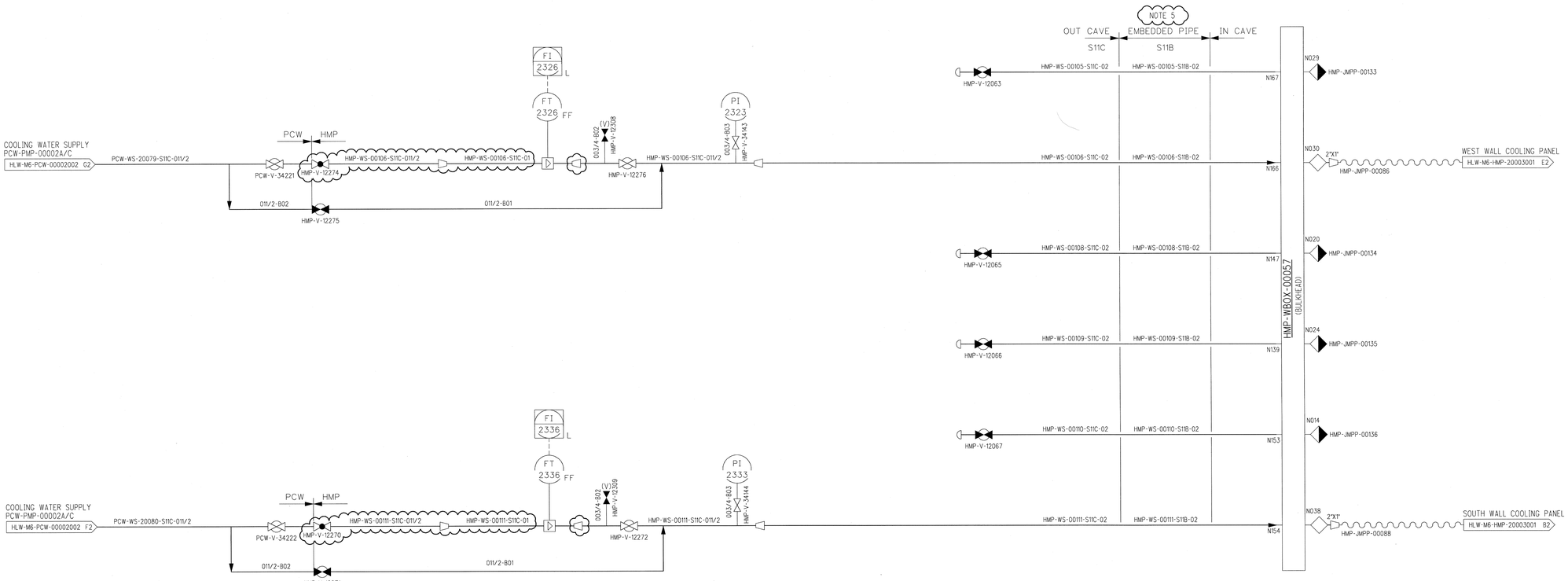
1. SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
5. ALTHOUGH THE PIPE SPECIFICATION BREAK FROM S11B IS DEPICTED AT THE OUT CAVE WALL PENETRATION, IT MAY BE LOCATED ANYWHERE FROM EMBEDDED PORTION UP TO THE FIRST VALVE TO SUPPORT LAYOUT CONSTRAINTS. THE S11B PIPE SPECIFICATION SATISFIES THE REQUIREMENTS OF THE INTERFACING PIPE SPECIFICATION.
6. THIS DRAWING SUPERSEDES 24590-HLW-M6-HMP-20014 REV 6. THIS DRAWING INCLUDES INFORMATION FROM 24590-HLW-M6N-HMP-20046, 24590-HLW-M6LN-HMP-00003, AND 24590-HLW-M6PR-HMP-00001.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-HLW-3YD-HMP-00001, SYSTEM DESCRIPTION FOR THE HLW MELTER PROCESS SYSTEM (HMP).



DRAWING INDEX	
DWG NO	TITLE
24590-HLW-M6-HMP-20014001	HMP SYS MELTER 2 REFRACTORY COOLING

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR CONSTRUCTION, SEE NOTE 6	TH	JK	BSB	MK	1-23-12

REVISION HISTORY

CM
QUALITY DESIGNATOR

ISSUED BY RPP-WTP PDC
BY DATE ISSUE STAMP

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.	30	

	BY	DATE
ORIGINATOR		1-10-12
CHECKER		1-11-12
APPROVER		1-23-12
REVIEWER		1-12-12
		1-12-12

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-HLW-ADR-M-02-031 REV: 3
EMNS SCREENING REQUIRED? [X] YES [ ] NO | EMNS INITIAL IF YES

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

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.

BECHTEL
RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

CONTRACT No: DE-AC27-01RV14136

P&ID - HLW
HLW MELTER PROCESS SYSTEM
MELTER 2
REFRACTORY
COOLING

SCALE: NONE
24590-HLW-M6-HMP-20014001
REV 0

"E" SIZE - 44x34
COMPUTER GENERATED - MANUAL
DESIGN CHANGES NOT PERMITTED

R11475653

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FORM E_SDN.DGN 02/2009

1

Table III.10.J.A – HLW Plant Miscellaneous Unit System Description

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables, and Figures
HLW Melter Process System HMP-MLTR-00001 (HLW Melter 1) HMP-MLTR-00002 (HLW Melter 2)	HMP	~~RESERVED~~ -M6-HMP-00001001, Rev 0 -M6-HMP-00001002, Rev 1 -M6-HMP-00003001, Rev 0 -M6-HMP-00004001, Rev 1 -M6-HMP-00006001, Rev 1 -M6-HMP-00006002, Rev 0 -M6-HMP-00007001, Rev 0 -M6-HMP-00008001, Rev 0 -M6-HMP-00013002, Rev 1 -M6-HMP-00013003, Rev 0 -M6-HMP-20001001, Rev 0 -M6-HMP-20001002, Rev 0 -M6-HMP-20003001, Rev 0 -M6-HMP-20004001, Rev 0 -M6-HMP-20006001, Rev 0 -M6-HMP-20008001, Rev 0 -M6-HMP-20013002, Rev 0 -M6-HMP-20013003, Rev 0 -M5-V17T-P0002, Rev 1 -M5-V17T-P20002, Rev 1 -M0D-HMP-00001, Rev 2 -M0D-HMP-00002, Rev 2 -MF-HMP-00001, Rev 0 -MF-HMP-00002, Rev 0 -MF-HMP-00003, Rev 0	Section 4.1.4.2; Table C-8; and Figures C1-1, C1-4, C1-27 and C1-54 in Operating Unit Group 10, Addendum C of this Permit.

Table III.10.J.A – HLW Plant Miscellaneous Unit System Description

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables, and Figures
		-N1D-HMP-P0001, Rev 0 -P1-P01T-00002, Rev 7 -3YD-HMP-00001, Rev 2 -3PS-AE00-T0001, Rev 5	
Melter Offgas Treatment Process System HOP-FCLR-00001 (Melter 1 Offgas Film Cooler) HOP-FCLR-00002 (Melter 2 Offgas Film Cooler) HOP-FCLR-00003 (Melter 1 Standby Offgas Insert) HOP-FCLR-00004 (Melter 2 Standby Offgas Insert)	HOP	**24590-HLW** -M5-V17T-P0002, Rev1 -M5-V17T-P20002, Rev 1 -M6-HMP-00002001, Rev 0 -M6-HMP-00002002, Rev 0 ~~-M6-HMP-00002, Rev 5~~ ~~-M6-HMP-20002, Rev 6~~ -3YD-HOP-00001[a] -M6-HMP-20002001, Rev 0 -M6-HMP-20002002, Rev 0	Section 4.1.4.3; Table C-8; and Figures C1-1, C1-4 and C1-27-in Operating Unit Group 10, Addendum C of this Permit.
Melter Offgas Treatment Process System (Cont.) HOP-SCB-00001 (Melter 1 Submerged Bed Scrubber, SBS) HOP-SCB-00002 (Melter 2 Submerged Bed Scrubber, SBS)	HOP	**24590-HLW** -M5-V17T-P0003, Rev 1 -M5-V17T-P20003, Rev 1 -M6-HOP-00001001, Rev 0 -M6-HOP-00001002, Rev 0 -M6-HOP-00001003, Rev 0 -M6-HOP-20001001, Rev 0 -M6-HOP-20001002, Rev 0 -M6-HOP-20001003, Rev 0 -MKD-HOP-P0016, Rev 0	Section 4.1.4.3; Table C-8; and Figures C1-1 and C1-4 in Operating Unit Group 10, Addendum C of this Permit.

Table III.10.J.B – HLW Vitrification Miscellaneous Unit Systems Secondary Containment ~~Systems Including~~ Sumps and Floor Drains

Sump/Floor Drain I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions[a] (inches~~feet~~) & Materials of Construction	Maximum Allowable Liquid Height (inches)	Secondary Containment Volume (gallons)	Engineering Description (Drawing Nos., Specification Nos., etc.)
~~minus (TBD)~~.					

Table III.10.J.C – HLW Vitrification System Process and Leak Detection System Instruments and Parameters

P&ID	Monitoring or Control Parameter	Type of Instrument or Control Device	Instrument or Control Device Tag No.	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Instrument Calibration Method No. and Range
24590-HLW-M6-HMP-00004001, Rev 1~~0~~	Melter 1 plenum temperature, 62”	TBD	(TE-0920A + TT-0920A + TI-0920A)* Or (TE-0920C +	TBD	TBD	TBD	TBD	TBD

Table III.10.J.C – HLW Vitrification System Process and Leak Detection System Instruments and Parameters

P&ID	Monitoring or Control Parameter	Type of Instrument or Control Device	Instrument or Control Device Tag No.	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Instrument Calibration Method No. and Range
			TT-0921A + TI-0921F)*					
24590-HLW-M6-HMP-00004001, Rev 1~~0~~	Melter 1 plenum temperature, 59"	TBD	(TE-0920B + TT-920A + TI-0920B)* Or (TE-920D + TT-0921A+ TI-0921E)*	TBD	TBD	TBD	TBD	TBD
24590-HLW-M6-HMP-20004001, Rev 0	Melter 2 plenum temperature, 62"	TBD	(TE-2920A + TT-2920A + TI-2920A)*	TBD	TBD	TBD	TBD	TBD

Quarter Ending June 30, 2014

24590-LAW-PCN-ENV-13-005

Hanford Facility RCRA Permit Modification Notification Form
Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

Index

Submitted by Co-Operator:

R. T. Brock — 5/18/14 Date

Reviewed by ORP Program Office:

D. L. Noyes — 6/17/14 Date

Quarter Ending June 30, 2014 24590-LAW-PCN-ENV-13-005

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 integrity assessment for the Caustic Collection Tank (LVP-TK-00001) associated with the Low Activity Waste (LAW) Secondary Offgas System (LVP) in Appendix 9.11 of the Dangerous Waste Permit. This modification also requests the update of the *Mechanical Data Sheet for the LAW Caustic Collection Tank,* and replacement of the *Equipment Assembly Drawing for LVP-TK-00001* with the vendor drawings provided in 24590-LAW-VDCN-M-13-00001. Both documents are located in Appendix 9.6.

Appendix 9.11			
Replace	CCN 139508 / AREVA-IA-101, Rev. 0	With	24590-CM-HC4-HXYG-000240-02-00011, Rev 00A
Appendix 9.6			
Replace	24590-LAW-MTD-LVP-P0001, Rev. 0	With	24590-LAW-MTD-LVP-00001, Rev. 1
Replace	24590-LAW-MT-LVP-00004, Rev. 1	With	24590-LAW-VDCN-M-13-00001

The revision to the documents included in this modification is the direct result of the change to LVP offgas system to a negative pressure created by the movement of the LVP exhausters downstream of the LAW Caustic Scrubber. In order to maintain the loop seal in the drain line from the Caustic Scrubber (LVP-SCB-00001) to the LAW Caustic Collection Tank (LVP-TK-00001), the level of the incoming drain line was lowered approximately 6'-2". This change also resulted in the addition of a new tank overflow nozzle at a lower elevation, and the reduction of the operating volume of the tank from 11,919 gallons to 7,325 gallons.

24590-CM-HC4-HXYG-00240-02-00011, Rev 00A

The revision of the IQRPE report is a direct result of the change to LVP system to a negative pressure design resulting in the lowering of the Caustic Scrubber (LVP-SCB-00001) loop seal drain line connection to the LAW Caustic Collection Tank (LVP-TK-00001). This change also added a new tank overflow nozzle at a lower elevation that resulted in a reduction of the operating volume of the tank. The previous loop seal drain line and overflow nozzles will be provided with a blind flange and will be designated as spare nozzles.

24590-LAW-MTD-LVP-00001, Rev. 1

The following changes were made to datasheet 24590-LAW-MTD-LVP-00001 in Revision 1

- The maximum operating volume on the mechanical data sheet was reduced from 11,919 to 7,325.
- The total volume on the mechanical data sheet was increased from 14,232 to 14,593.
- Vendor provided updated vessel weights and added notes to provide supporting calculation references

24590-LAW-VDCN-M-13-00001

The following changes were made to the vendor drawing for LVP-TK-00001 in Vendor Design Change Notice (VDCN) 24590-LAW-VDCN-M-13-00001 (submitted to Ecology in the Milk Run CCN 257037)

- Designed N01 as Spare W/BLIND flange (old scrubber drain line connection).
- Designated N04 as a Spare W/BLIND (old overflow nozzle)
- Added new N13 (new caustic scrubber loop seal drain line connection to LVP-TK-00001)
- Added new N14 (new LVP-TK-00001 overflow nozzle)

Quarter Ending June 30, 2014 24590-LAW-PCN-ENV-13-005

This PCN updates information in Appendices 9.6 and 9.11 to reflect current design. This DWP component may be re-evaluated to confirm design adequacy. If the re-evaluation results in future design changes, the changes will be reviewed by Ecology in subsequent permit modifications.

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.

None

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: N/A

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 7/3/14 SD Date

ISSUED BY
RPP-WTP PDC

R11638800

AFS-14-0143

AREVA

April 21, 2014

Ms. Tess Klatt
Subcontract Administrator
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Dear Ms. Klatt:

BECHTEL NATIONAL, INC. CONTRACT NO. 24590-CM-HC4-HXYG-00240 IQRPE STRUCTURAL INTEGRITY ASSESSMENT REPORT FOR LAW LVP CAUSTIC COLLECTION TANK (LVP-TK-00001) (IA-3010235-000)

The integrity assessment of the subject LAW LVP Caustic Collection Tank has been completed per the contract requirements and is enclosed for your use. The assessment found that the design is sufficient to ensure that the LAW LVP Caustic Collection Tank is adequately designed and has sufficient structural strength, compatibility with the waste(s) to be processed/stored/treated, and corrosion protection to ensure that it will not collapse, rupture, or fail.

If you have any questions, please contact Tarlok Hundal at (509) 371-1975, or via email at tarlok.hundal@areva.com.

Sincerely,

Elizabeth W. Smith, C.P.M
Subcontract Administrator
AREVA Federal Services LLC
Richland Office

Enclosure (1)

LK

cc: D. C. Pfluger, MS5-I w/enclosure (2)

24590-CM-HC4-HXYG-000240-02-00011 Rev. 00A.

IQRPE STRUCTURAL INTEGRITY ASSESSMENT REPORT FOR LAW LVP CAUSTIC COLLECTION TANK (LVP-TK-00001)

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 the 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.

IQRPE STRUCTURAL INTEGRITY ASSESSMENT REPORT FOR LAW LVP CAUSTIC COLLECTION TANK (LVP-TK-00001)

"I, Tarlok Singh Hundal, have reviewed and certified a portion of the design of a new tank system or component located at the Hanford Waste Treatment Plant, owned/operated by Department of Energy, Office of River Protection, Richland, Washington. My duties were independent review of the current design for the LAW LVP Caustic Collection Tank, as required by the Washington Administrative Code, *Dangerous Waste Regulations*, Section WAC-173-303-640(3) (a) through (g) applicable components."

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

The documentation reviewed indicates that the design fully satisfies the requirements of the WAC.

The attached review is seven (7) pages numbered one (1) through seven (7).

Signature

4/21/14
Date

Scope	Scope of this Integrity Assessment	This Integrity Assessment is for LAW Secondary Offgas/Vessel Vent Process (LVP) System, Caustic Collection Tank (LVP-TK-00001), located in Room L-0218, at Elevation 28'-0" of the LAW Vitrification Building as shown on General Arrangement Drawing 24590-LAW-P1-P01T-00004. **Note: This report supersedes the previous issued integrity assessment report: BNI CCN #: 139508 (AREVA NC Inc., Report No. - AREVA-IA-101, Rev. 0)**
Summary of Assessment		For each item of "Information Assessed" (i.e., Criteria) on the following pages, the items listed under "Source of Information" were reviewed and found to furnish adequate design requirements and controls to ensure that the design fully satisfies the requirements of Washington Administrative Code (WAC), Chapter 173-303 WAC, *Dangerous Waste Regulations,* Section WAC-173-303-640 (3) (a) through (g) applicable elements of the *Tank Systems.*

References	Material Requisition, Specifications, Drawings, Mechanical Data Sheet, and System Description.	Material Requisition: 24590-CM-MRC-MVA0-00002, Rev. 1 (including Supplements S0001 and S0002): Pressure Vessels, Shop Fabricated, Medium (N053). Specifications: The following Specifications with their respective revision and Specification Change Notices (SCNs) are listed in the above listed Material Requisition: 24590-WTP-3PS-G000-T0001, Engineering Specification for Supplier Quality Assurance Program Requirements; 24590-WTP-3PS-G000-T0002, Engineering Specification for Positive Material Identification (PMI) for Shop Fabrication; 24590-WTP-3PS-G000-T0003, Engineering Specification for Packaging, Handling, and Storage Requirements; 24590-WTP-3PS-MV00-T0002, Engineering Specification for Seismic Qualification Criteria for Pressure Vessels; 24590-WTP-3PS-FB01-T0001, Engineering Specification for Structural Design Loads for Seismic Category III & IV Equipment and Tanks; 24590-WTP-3PS-AFPS-T0001, Engineering Specification for Shop Applied Special Protective Coatings for Steel Items and Equipment; 24590-WTP-3PS-MTSS-T0001, Engineering Specification for Tank Welding. Plant Drawings: 24590-LAW-P1-P01T-00002, Rev. 7, LAW Vitrification Building General Arrangement Plan at El. 3'-0"; 24590-LAW-P1-P01T-00004, Rev. 5, LAW Vitrification Building General Arrangement Plan at El. 28'-0"; 24590-LAW-DB-S13T-00028, Rev. 4, LAW Vitrification Building Main Building Partial Conc Forming Plan Zone 5 @ El. (+) 28'-0"; 24590-LAW-M5-V17T-00011, Rev. 5 (+DCN #s 24590-LAW-M5N-V17T- 00012 and 00029), Process Flow Diagram LAW VIT Secondary Offgas Treatment (System LVP); 24590-LAW-M6-LVP-00002003, Rev. 0 (+DCN #s 24590-LAW-M6N-LVP- 00092, 00102, and 00106), P & ID-LAW Secondary Offgas/Vessel Vent Process System Caustic Collection Tank LVP-TK-00001. Vender Fabrication Drawings (Bechtel Status Code 1 Drawings = As-Built Drawings: Approved and Accepted by Bechtel): 24590-CM-POA-MVA0-00019-03-00003, Rev. 00C (+DCN # 24590-LAW-VDCN-M-13-00001), LAW Caustic Collection Tank (LVP-TK-00001) General Arrangement; 24590-CM-POA-MVA0-00019-03-00009, Rev. 00D (+DCN # 24590-LAW-VDCN-M-13-00001) LAW Caustic Collection Tank (LVP-TK-00001) Nozzle Details; 24590-CM-POA-MVA0-00019-03-00010, Rev. 00C (+DCN # 24590-LAW-VDCN-M-13-00001) LAW Caustic Collection Tank (LVP-TK-00001) Nozzle Details Continued; 24590-CM-POA-MVA0-00019-03-00015, Rev. 00B, LAW Caustic Collection Tank (LVP-TK-00001) General Notes. Mechanical Data Sheet: 24590-LAW-MTD-LVP-00001, Rev. 1, LAW Caustic Collection Tank (LVP-TK-00001). System Description: 24590-LAW-3YD-LOP-00001, Rev. 3, System Description for the LAW Primary Offgas (LOP) and Secondary Offgas/Vessel Vent (LVP) Systems (including SDCN #s 24590-LAW-3YN-LOP-00011, 00012, 00013, and 00015).

	Information Assessed	Source of Information	Assessment
Design	Tank design standards are appropriate and adequate for the tank's intended use.	Mechanical Data Sheet, Specifications, and Drawings listed above under References; API-650 Standard, American Petroleum Institute, Welded Steel Tanks for Oil Storage.	The Mechanical Data Sheet requires that the LAW Caustic Collection Tank, LVP-TK-00001 be designed to the API-650 Standard's applicable requirements, which are appropriate for the tank operating with waste liquid within the pressure and temperature ranges specified for this tank. The tank's quality level is commercial (CM) grade and its seismic category (SC) is SC-III. Supplementary requirements are specified in the engineering specifications. Supplementary requirements address the tank design, positive material identification, lifting attachment design, fabrication tolerances, acceptable welding procedures for the tank, welder qualifications and testing records, NDE inspections and records, and lifting, packaging, shipping, handling and storage requirements. As discussed above, the design standards are appropriate and adequate for the tank's intended use. As shown on the drawings, the LAW Caustic Collection Tank, LVP-TK-00001 is a vertical tank with a 13 ft ID and a height of 14 ft 4 in. with a self supporting cone roof. The cone roof is built with a 1/4" minimum thick plate. The shell and bottom floor are built of 5/16" minimum thick plates. The tank is anchored to the steel framing under concrete floor at Elev. 28'-0". Material for the tank's cone roof, shell, and bottom floor is SA-240 316 stainless steel (0.030% maximum carbon content, dual certified), hereafter referred to as 316 stainless steel. The tank has internal piping, spray nozzle, and other appurtenances made of other grades of stainless steel material. Tank's operating volume is about 7,325 gallons and the total internal volume is about 14,593 gallons.
	If a non-standard tank is to be used, the design calculations demonstrate sound engineering principles of construction.	Mechanical Data Sheet, Specifications, Material Requisition, and Drawings listed above under References; API-650 Standard, American Petroleum Institute, Welded Steel Tanks for Oil Storage; 24590-CM-POA-MVA0-00019-02-00002, Rev. 00C, Design Calculations for LAW Caustic Collection Tank (LVP-TK-00001).	The LAW Caustic Collection Tank, LVP-TK-00001 is a standard API-650 tank. The Mechanical Data Sheet requires that the API-650 tank be delivered after design, fabrication, inspection, and testing per API-650 Standard. This is a shop fabricated tank that is delivered for service in the LAW Facility. Review of the Design Calculations document for this tank shows that it has been designed as a standard tank per applicable requirements of API-650 standard and Specifications and other documents listed in the Material Requisition for the tank. The aforementioned statements and the vendor fabrication drawings of the tank reviewed demonstrate that sound engineering principles of design, construction, and fabrication have been used for the tank.

	Information Assessed	Source of Information	Assessment
Design (cont'd)	Tank has adequate strength, after consideration of the corrosion allowance, to withstand the operating pressure, operating temperature, and seismic loads.	Mechanical Data Sheet, Specifications, Drawings, and Material Requisition listed above under References; API-650 Standard, American Petroleum Institute, Welded Steel Tanks for Oil Storage; UBC 1997, Uniform Building Code, International Conference of Building Officials; 24590-CM-POA-MVA0-00019-02-00002, Rev. 00C, Design Calculations for LAW Caustic Collection Tank (LVP-TK-00001).	The Mechanical Data Sheet identifies tank's operating pressure and temperature ranges, the selected materials, the corrosion allowance, the quality level, and the seismic category. The API-650 Standard and supplement Engineering Specifications for the tank require specific consideration of the operating pressures, temperatures, and seismic loads in the design process. API-650 Standard requires that corrosion allowance thickness be added to the nominal tank design thickness when evaluating the adequacy of the tank components for these loads at the end of life. The Mechanical Data Sheet identifies the tank's Seismic Category as SC-III. For SC-III tanks, the detailed requirements for seismic load determination (per UBC 1997) are furnished in the Specification for Structural Design Loads for Seismic Category III & IV Equipment and Tanks. Review of the Design Calculations document of this tank shows that the tank has adequate strength after consideration of corrosion allowance to withstand the applicable operating pressure, temperature, and seismic loads for the specified design life of the tank. Furthermore, approval and acceptance of the vendor fabrication drawings by Bechtel National Inc. (BNI) is an added assurance that all applicable requirements stated above and as described in the documents (including daughter documents) listed in Material Requisition for the tank have been met.
Foundation	Tank foundation will maintain the load of a full tank.	Drawings listed under References; API-650 Standard, American Petroleum Institute, Welded Steel Tanks for Oil Storage; 24590-CM-POA-MVA0-00019-02-00002, Rev. 00C, Design Calculations for LAW Caustic Collection Tank (LVP-TK-00001); 24590-WTP-DB-ENG-01-001, Rev. 1Q, Basis of Design.	The API-650 Standard specifies the requirements for the design of the tank supports and ensures their adequate design. Review of the Design Calculations document of the tank shows that the tank's support components (shell and bottom plate) have adequate strength to maintain the load of the full tank. Furthermore, Chapter 14 of the Basis of Design document requires that the foundation underlying the tank support must be adequate to support the loads from full tank. It should be noted that the current revisions of the drawings (due to VDCN-M-13-00001) reviewed show the incoming scrubber drain line was lowered, which also required lower elevation of the tank's overflow pipe. This change resulted in reduced volume and lesser load of the tank for evaluation of the underlying supporting foundation, which is out of scope of this assessment. The assessment of the adequacy of the underlying foundation is part of a separate integrity assessment report for the Secondary Containment of the tank.

	Information Assessed	Source of Information	Assessment
Foundation (cont'd)	If in an area subject to flooding, the tank is anchored.	Mechanical Data Sheet and Drawings listed under References; 24590-CM-POA-MVA0-00019-02-00002, Rev. 00C, Design Calculations for LAW Caustic Collection Tank (LVP-TK-00001); 24590- LAW-SSC-S15T-00032, Rev. A, Steel Framing Elevation +28' (Non-Process and Effluent Cells) (includes Design Calc. of Anchors for LVP-TK-00001 - pp. A63-A65) and w/ECCN # 24590-LAW-SSE-S15T-00055; 24590-LAW-PER-M-02-002, Rev. 7, Dangerous Waste Permit (DWP) Liner Heights in the LAW Facility.	Dangerous Waste Permit Liner Heights document provides information to compute liner heights for effective secondary containment due to flooding in various rooms of LAW facility. The Liner Heights document and drawings show that Room L0128 containment wall is 4 ft high where LVP-TK-00001 is located. This flooding height is inclusive of the ruptured tank inner volume thus does not exert any buoyant force on the tank. The Mechanical Data Sheet also does not require any evaluation of anchoring the tank due to flooding. However, the Design Calculations and drawings show that the tank is anchored to the concrete floor for other applicable forces including seismic loads.
	Tank system will withstand the effects of frost heave.	Drawings listed under References; 24590-WTP-DC-ST-01-001, Rev. 13, Structural Design Criteria.	The Structural Design Criteria requires that all outdoor structural foundations shall extend into the surrounding soil below the 30 in. frost line depth; to preclude any frost heave effects. As shown on the drawings, the tank is located inside/interior of the building at above grade (at floor Elev. 28'-0") and the building's lower level floor is at Elevation (-) 21'-0", therefore, tank's foundation is not subject to the frost heave effects.

	Information Assessed	Source of Information	Assessment
Waste Characteristics	Characteristics of the waste to be stored or treated have been identified (ignitable, reactive, toxic, specific gravity, vapor pressure, flash point, storage temperature).	Mechanical Data Sheet listed above under References; 24590-LAW-N1D-LVP-00002, Rev. 2, Corrosion Evaluation - Caustic Collection Tank LVP-TK-00001 (LAW); 24590-WTP-PER-PR-03-002, Rev. 3, Control of Toxic Vapors and Emissions from WTP Tank and Miscellaneous Unit Systems; 24590-WTP-PER-PR-03-001, Rev. 1, Prevention of Hydrogen Accumulation in WTP Tank Systems and Miscellaneous Treatment Unit Systems.	The Mechanical Data Sheet presents process conditions and design parameters of the tank, such as the waste specific gravity, temperatures, and pressures, etc. The Corrosion Evaluation document addresses the pH range and chemical composition of the waste and selects appropriate tank materials and the corrosion allowance. Waste characteristics that are hazardous, such as ignitability, reactivity, and toxicity are appropriately addressed in the Control of Toxic Vapors and Emissions document and Prevention of Hydrogen Accumulation document. These two aforementioned documents do not specifically list this tank to exhibit any hazardous characteristics. Additionally the tank is grounded to control ignition sources.
	Tank is designed to store or treat the wastes with the characteristics defined above and any treatment reagents.	System Description listed above under References: 24590-LAW-N1D-LVP-00002, Rev. 2, Corrosion Evaluation - Caustic Collection Tank LVP-TK-00001 (LAW).	The Corrosion Evaluation document demonstrates that the tank is designed to process the wastes discussed above. The System Description discusses normal and abnormal operations for the LVP tank. To neutralize the collected acid gases, a 5 molar sodium hydroxide solution is added to the Caustic Collection Tank. A spray jet nozzle is provided for washdown during maintenance periods.
	The waste types are compatible with each other.	Drawings and System Description listed above under References.	The System Description for the LAW (LVP) does not describe any operations where incompatible wastes are mixed in this tank for processing. The LVP tank receives scrubbing liquid from the Caustic Scrubber (LVP-SCB-00001), located at upper floor (Elev. 48'-0") as shown in drawings and as described in the System Description document. The collected waste is routinely pumped to the LAW pretreatment facility Alkaline Effluent Tanks (RLD-VSL-00017A/B) via caustic blowdown pumps (LVP-PMP-00002A/B) for further processing.

	Information Assessed	Source of Information	Assessment
Corrosion Protection	Tank material and protective coatings ensure the tank structure is adequately protected from the corrosive effects of the waste stream and external environments (expected to not leak or fail for the design life of the system).	Mechanical Data Sheet listed above under References; American Petroleum Institute standard, API-650, Welded Steel Tanks for Oil Storage; 24590-LAW-N1D-LVP-00002, Rev. 2, Corrosion Evaluation - Caustic Collection Tank LVP-TK-00001 (LAW).	The Corrosion Evaluation document shows that the LAW Caustic Collection Tank, LVP-TK-00001 normally operates at atmospheric pressure, a pH of 9 (may be raised to 14), and at a temperature range of 142°F to 149°F. The tank is designed per API-650 standard and for a temperature of 180°F. Other pertinent tank operation and design information is provided in the Mechanical Data Sheet. Washdown of the tank is considered using the internal spray jet nozzle. The selected 316 stainless steel material with a corrosion allowance of 0.04 in. is adequate for the 40-yr design life of the tank.
Corrosion Allowance	Corrosion allowance is adequate for the intended service life of the tank.	Mechanical Data Sheet listed above under References; 24590-LAW-N1D-LVP-00002, Rev. 2, Corrosion Evaluation - Caustic Collection Tank LVP-TK-00001 (LAW); 24590-CM-POA-MVA0-00019-02-00002, Rev. 00C, Design Calculations for LAW Caustic Collection Tank (LVP-TK-00001).	The bases for the LVP tank's material selection and corrosion allowance are furnished in the Corrosion Evaluation document and in the Mechanical Data Sheet. Selection of 316 stainless steel material with a corrosion allowance of 0.04 in. for a service life of 40 years is adequate and appropriate for the intended use of the tank. The Design Calculations appropriately account for the corrosion allowance of 0.04 in. for computing the required thickness of the tank components.
Pressure Relief	Pressure controls (vents and relief valves) are adequately designed to ensure pressure relief if normal operating pressures in the tank are exceeded.	Drawings listed above under References.	The LAW Caustic Collection Tank, LVP-TK-00001 is provided with an unrestricted overflow through a 6" diameter pipe and the drawings also show that the tank is vented near the apex of its conical roof to prevent any build up of the gases and/or over pressurization of the tank.

Master Distribution Schedule for WTP Project Subcontract Management Group

SUBMITTAL TRANSMITTAL:	☒ First Submittal	☐ Re-Submittal	☐ QVRP Package	☐ RFI
☒ No Review Required	☐ No Review Required Re-Submittal	☐ Submittal Supplement		
CORRESPONDENCE:	☐ With Attachment	☐ W/O Attachment (letter only)	☐ RFI	
	☐ Fax as Original (Letter Only)	☐ Fax as Original (With Attachment)		
☐ Pre-Award/Award Package	☐ Executed Change Order Package			
☐ Executed Amendment Package	☐ Back Charge	☐ Closeout Package		

Subcontract Number:	24590-CM-HC4-HXYG-00240
Subcontract Title:	Tank Integrity Design Assessments
Subcontractor Name:	AREVA Federal Services LLC
Subcontract Administrator:	Tess Klatt

PDC Document Number	Rev	Document Title	Rev
24590-CM-HC4-HXYG-00240-02-00011	00A	IQRPE Structural Integrity Assessment Report For LAW LVP Caustic Collection Tank (LVP-TK-00001) (IA-3010235-000)	

DUE BACK TO SUBCONTRACT ADMINISTRATOR NO LATER THAN: N/A

INCOMING DISTRIBUTION

Name	MSIN/ E-mail	Original	Copy	Copy of cover sheet / transmittal only	Primary File Index	Alternate File Index	Assigned Action or Remarks
PDC		X			B.19		
Tess Klatt	X						
Dan Pfluger	X						
Barry Curn	X						
Dan Robertson	X						
Barbara Dubiel	X						

MECHANICAL DATA SHEET: TANK

Plant Item No. (Equipment No.)
24590-LAW-MT-LVP-TK-00001

Project:	RPP-WTP	P&ID:	24590-LAW-M6-LVP-00002003 MEG 10-03-13
Project No:	24590	Process Data Sheet:	N/A
Project Site:	Hanford	Tank Drawing	24590-LAW-MT-LVP-00004
Description:	LAW Caustic Collection Tank		

Design Data

Quality Level		Commercial Grade (CM)		Fabrication Specs		N/A		
Seismic Category		SC-III		Design Standard		API 650 J & S		
Service/Contents		Scrubber Solution		Pumping Rate In	GPM	62		
		Operating	Design	Pumping Rate Out	GPM	Batch		
Internal Pressure	psig	ATM	Per Code	Postweld Heat Treat		API 650		
Temperature	°F	144	180	Design Specific Gravity		1.14		
Min. Design Metal Temp.	°F	50						
Vapor Pressure	psia	N/A		Weights (lbs)		Empty	Operating	Test
Max Operating Volume	gal	7,325 Note 4		Estimated		12,500	125,500	131,300
Total Volume	gal	14,593 Note 4		Actual*		12,646 Note 3	147,795 Note 3	131,198 Note 3

Shell Design	API 650				
Roof Design	API 650				
Roof Type	Conical				
Frangible Roof Joint	No				
Uniform Live Load (roof)	lbf/ft²	25	Special Loads:	lbf/ft²	24590-WTP-3PS-FB01-T0001
Insulation Loads	lbf/ft²	N/A	Gases in Vapor Space		
Roof Seam	Butt		Floor Seam		Butt
Foundation Type	Concrete Pad				
Lightning Protection	Grounding Lugs				
Cathodic Protection	N/A				

Seismic Design	24590-WTP-3PS-FB01-T0001				
Seismic Zone	2B			Importance Factor	Per API 650
Zone Factor	Per API 650			Site Coefficient	N/A
Wind Velocity	N/A	Outside Temp, Min/Max, °F	59/95	Provide Intermediate Wind Girder	N/A
Maximum Precipitation	N/A			Snow Accumulation	None

Materials of Construction

Component	Material	Minimum Thickness/ Size **	Corrosion Allowance, in	Coatings/Finishing/Surface Preparation Specification 24590-WTP-3PS-AFPS-T0005	
				Internal (See Specification)	External (See Specification)
Roof	SA240 316 (Note 1)	0.250"	0.04	None	None
Shell	SA240 316 (Note 1)	0.3125"	0.04	None	None
Floor	SA240 316 (Note 1)	0.3125"	0.04	None	None
Internals	SA240 316 (Note 1)	0.2275"	0.04	None	None
Structural - Internal	SA240 316 (Note 1)	0.2275"	0.04	None	None
Structural – External	SA240 316 (Note 1)	API 650	N/A	None	None
Pipe	SA312 TP316 (Note 1)	API 650	0.04	None	None
Forgings/ Bar stock	SA182 F316 (Note 1)	N/A	0.04	N/A	None
Gaskets	Spiral Wound 316 FG	N/A	N/A	N/A	None
Bolting	SA193 B8	N/A	N/A	N/A	None

Miscellaneous data.

Insulation Function	N/A	Insulation Material	
Insulation Thickness (inch).	N/A	N/A	

Remarks

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.

BECHTEL	**MECHANICAL DATA SHEET: TANK**	Plant Item No. (Equipment No.) **24590-LAW-MT-LVP-TK-00001**

Notes:

* **To be determined by vendor.**

** **The minimum thickness stated includes corrosion allowance.**

Note 1: SA240 316, SA182 F316 & SA312 TP316 stainless steel material shall have carbon content of 0.030% maximum, dual certified. Non welded items are excluded from these requirements.

Note 2: Contents of this document are Dangerous Waste Permit affecting.

Note 3: From supplier drawing 24590-CM-POA-MVA0-00019-03-00003, Rev C. Weights are 'full to top of roof angle.'

Note 4: Reference calculation 24590-LAW-MVC-LVP-00001, Rev 1, Section 8.6, Table 3.

							Dan Crayon for Pete Omel
1	10-2-13	Updated weight data from supplier drawings and volumes from calculation.	MR Galvin	MF Meyer	BS Austen	DE Krahn 10-2-13	PE Omel
0	04/14/04	Issued for Purchase	-	-	-	-	-
REV	**DATE**	**REASON FOR REVISION**	**PREPARER**	**CHECKER**	**REVIEWER**	**E&NS**	**APPROVER**

R11604123

BECHTEL

Drawing Change Notice

CHANGE DOCUMENT NO. 24590-LAW-VDCN-M-13-00001

JOB NO.	TITLE FOR CHANGE NOTICE
24590	Update Nozzles on LVP-TK-00001

DESIGN DOCUMENT NUMBER	REV	DESIGN DOCUMENT NUMBER	REV
24590-CM-POA-MVA0-00019-03-00003	C	24590-CM-POA-MVA0-00019-03-00009	D
24590-CM-POA-MVA0-00019-03-00010	C		

PART OF DESIGN CHANGE PACKAGE (DCP)? ☐ Yes ☒ No DCP No.: Rev:

JUSTIFICATION FOR CHANGE

The modifications implemented by this DCN are a direct result of the change of the LAW Secondary Offgas System (LVP) to a negative pressure design (see Trend 06-4011). One of the major design impacts of this change was the reconfiguration of the Caustic Scrubber drain loop seal to accomodate negative pressure. This change also impacted the Scrubber drain line connection to LVP-TK-00001 as well as operational volume of this tank. This required a new Caustic drain line connection as well as reduction in the elevation of the tank overflow. These changes are detailed in sections 6.1.4, 8.1, and 8.2 of 24590-LAW-MVC-LVP-00001, Rev.1, Sizing Calculation for Caustic Collection Tank LVP-TK-00001. Additionally, these changes have been documented in section 8.2.2.4 of 24590-LAW-M6C-LVP-00006, Rev.1, Code Case UG-140 Overpressure Protection Evaluation of the Law Secondary Off-Gas (LVP) System, and as such are code required features of LVP-TK-00001. The Bill of Materials for the new Caustic drain line connection and the tank overflow connection are added to Vendor's Nozzle Details.

CAUSE CODE

3

Supersedes Change Document ☐ Yes ☒ No

ECN Needed ☐ Yes ☒ No

REQUIREMENTS REVIEW

Client Approval Required ☐ Yes ☒ No Interface Resolution Required * ☐ Yes ☒ No

Address any "yes" answers in the description

DESCRIPTION OF CHANGE

Changes to 24590-CM-POA-MVA0-00019-03-00003

Designate N01 as SPARE W/BLIND

Designate N04 as SPARE W/BLIND. In the elevation view, Add the instruction, "Truncate line inside head space at 1/4" diameter hole and remove." to dipped line inside tank for designated nozzle N14.

Add new Nozzle N04 in the elevation view as shown on page 4 and insert the information below into the Nozzle Legend.

NOZZLE			FLANGE			NECK	REINF. PL.		SERVICE
MK	QTY	SIZE	RTG	FACE	TYPE	SCH/ THK	THK	O.D.	
N14	1	6"	150#	R. F.	W. N.	80S	5/16"	15.75"	OVERFLOW

Add new Nozzle N13 in the elevation view as shown on page 4 and insert the information below into the Nozzle Legend.

NOZZLE			FLANGE			NECK	REINF. PL.		SERVICE
MK	QTY	SIZE	RTG	FACE	TYPE	SCH/ THK	THK	O.D.	
N13	1	8"	150#	R. F.	W. N.	80S	5/16"	19"	INLET "SCRUBBER DRAIN"

JOB NO.	TITLE FOR CHANGE NOTICE
24590	Update Nozzles on LVP-TK-00001

DESCRIPTION OF CHANGE

Changes to 24590-CM-POA-MVA0-00019-03-00009

Add Blind Flange (Item 346) to 3"ø NOZZLE "N01" detail as shown on page 5.

Add Blind Flange (Item 346) and Hex HD Bolt (Item 348) to 3"ø NOZZLE "N01" Bill of Material as shown below and NOT DEPICTED on page 5.

SHIP NoPC	PC MK	SHOP NoPC	DESCRIPTION	MAT'L	REMARKS	WEIGHT (POUNDS)
	346	1	3" Blind Flange, CL150, RF	A182-F316/316L	Stock Code PFFBX7105W06 or approved equal	
	348	4	5/8"ø x 3 1/2" Hex HD Bolt w (1) Hex Nut each	SA193-B8		

Add Blind Flange (item 347) to 4"ø NOZZLE "N04" detail as shown on page 5.

Add Blind Flange (Item 347) and Hex HD Bolt (Item 348) to 4"ø NOZZLE "N04" Bill of Material as shown below and NOT DEPICTED on page 5.

SHIP NoPC	PC MK	SHOP NoPC	DESCRIPTION	MAT'L	REMARKS	WEIGHT (POUNDS)
	347	1	4" Blind Flange, CL150, RF	A182-F316/316L	Stock Code PFFBX7105W08 or approved equal	
	348	8	5/8"ø x 3 1/2" Hex HD Bolt w (1) Hex Nut each	SA193-B8		

Delete Butt Weld Elbow (Item 340), Pipe 4" Schedule 80S (Item 341), 1/4" PL. 2" x 6 11/16" (Item 343), and 1/4" PL. 2" x 15 5/16" (Item 344) as shown on page 5.

Changes to 24590-CM-POA-MVA0-00019-03-00010

N14 Details

Add 6" ø Nozzle "N14" details as shown on page 6.

N13 Details

Add 8" ø Nozzle "N13" details as shown on page 6.

Bill of Materials

Add the bill of materials as shown on page 6.

Drawing Change Notice

CHANGE DOCUMENT NO.
24590-LAW-VDCN-M-13-00001

JOB NO.	TITLE FOR CHANGE NOTICE
24590	Update Nozzles on LVP-TK-00001

ORIGINATOR		CHECKER
Robie Mackay	Originator By: Robie Mackay - jrmackay Org Name: Mechanical Systems Placed: Jul 10, 2013, 4:30 pm	Mike O'Neill M R. O'Neill

Reviews

E&NS - Dwight Krahn Dwight Krahn 7-17-13	MS&PE - Serena Austen B. Serena Austen	PD - Reviewed By: Roy L. Slagle - rlslagle Org Name: LBL Plant Design Placed: Jul 15, 2013, 7:43 am	P-OPS - M Reviewed By: Maurice Bunker - mjbunker Org Name: Operations Placed: Jul 11, 2013, 2:57 pm
SU - Dav Reviewed By: Dave Boyd - dboyd Org Name: URS Placed: Jul 15, 2013, 12:41 pm	CON - Ken Keck Kenneth Keck		

Approval(s)

MS&PE - Pete Omel Pete Omel	LBL - PEM/PE		

Date *(inserted by final approver)*: 08-AUG-13

truncate line inside head space at 1/4" diameter hole and remove

FOR THIS VDCN

DIP PIPE ON NO1 ONLY. SEE SHT 3

NAME PLATE

ANCHOR

ELEVATION VIEW 1
ALL ELEVATIONS TAKEN FROM BOTTOM OF BOTTOM PLATE (FOR TRUE ORIENTATION SEE PLAN VIEW)

NOZZLE LEGEND

MK	QTY	NOZZLE SIZE	FLANGE RTG	FLANGE FACE	FLANGE TYPE	NECK SCH/THK	REINF. PL THK	REINF. PL O.D.	SERVICE
N01	1	3"	150#	R.F.	W.N.	80s	–	–	SPARE W/ BLIND
N02	1	3"	150#	R.F.	W.N.	80s	5/16"	10 1/2"	OUTLET
N03	1	4"	150#	R.F.	W.N.	80s	5/16"	12"	OUTLET
N04	1	4"	150#	R.F.	W.N.	80s	5/16"	12"	SPARE W/ BLIND
N05	1	10"	150#	R.F.	W.N.	40s	5/16"	23"	SPRAY NOZZLE (REMOVABLE)
N05A	1	2"	150#	R.F.	W.N.	80s	–	–	INLET TO SPRAY NOZZLE
N06	1	4"	150#	R.F.	W.N.	80s	–	–	VENT
N07	1	3"	150#	R.F.	W.N.	80s	5/16"	10 1/2"	LEVEL INSTRUMENT
N08	1	3"	150#	R.F.	W.N.	80s	–	–	RECIRCULATION INLET
N09	1	2"	150#	R.F.	W.N.	80s	–	–	PROCESS WATER INLET
N10	1	2"	150#	R.F.	W.N.	80s	–	–	SPARE W/ BLIND
N11	1	2"	150#	R.F.	W.N.	80s	–	–	SPARE W/ BLIND
N12	1	24"	3/8"	F.F.	PL.	5/16"	5/16"	49 1/2"	SHELL MANWAY
N13	1	8"	150#	R.F.	W.N.	80S	5/16"	19"	INLET "SCRUBBER DRAIN"
N14	1	6"	150#	R.F.	W.N.	80S	5/16"	15.75"	OVERFLOW

SHIP NoPC	PC MK	SHOP NoPC	DESCRIPTION	MAT'L	REMARKS	WEIGHT (POUNDS)
1			LAW CAUSTIC COLLECTION TANK LVP-TK-00001			12646
	101	1	5/16" PL@ 96" x 239"G	SA240-T316*	ROLL @ 156" I.D.	2125
	102	1	5/16" PL@ 96" x 95"G	SA240-T316*	ROLL @ 156" I.D.	844
	103	1	5/16" PL@ 96" x 157.07"G	SA240-T316*	ROLL @ 156" I.D.	1396
	104	1	5/16" PL@ 75 3/8" x 239"G	SA240-T316*	ROLL @ 156" I.D.	1668
	105	1	5/16" PL@ 75 3/8" x 95"G	SA240-T316*	ROLL @ 156" I.D.	663
	106	1	5/16" PL@ 75 3/8" x 157.07"G	SA240-T316*	ROLL @ 156" I.D.	1096
	107	1	∢ 2" x 2" x 1/4" @ 41'-6 3/8"	T316*	ROLL E/W @ 156 5/8" I.D.	138
	108	8	1" PL@ 4 3/16" x 5"	SA240-T316*		50
	109	16	1/2" PL@ 1 5/16" / 4 3/16" x 11"	SA240-T316*		72
	110	2	1/4" PL@ 3" x 5"	SA240-T316*		2
	111	1	10 GA. PL@ 2" x 5"	S/S		–
	112	1	10 GA. PL@ 2 1/2" x 9 1/4"	SA240-T316*		1
					TOTAL THIS SHEET	8055

* MAX. CARBON CONTENT OF 0.030%

EMPTY WEIGHT:
12,646 LBS

OPERATING WEIGHT (FULL TO TOP OF ROOF ANGLE):
147,795 LBS

TEST WEIGHT (FULL TO TOP OF ROOF ANGLE):
131,198 LBS

Materials: Pipe - SA-312-T302 (max carbon contents of 0.030%)
Flange - SA-182-F304 (max carbon contents of 0.030%)
Nozzle projection and reinforcement shall be per API-650.Materials:
Construction fabricates and installed as shown

PLAN VIEW 1

NAMEPLATE W/ 2" U-BRACKET
(LOCATED DIRECTLY ABOVE SHELL MANWAY)

MFG'D BY
PSF INDUSTRIES, INC.
SEATTLE, WASHINGTON
DATE JAN 2005 JOB NO. 3748-1

ANCHORAGE DETAILS 1

GROUNDING LUG "110"
(2 REQUIRED)

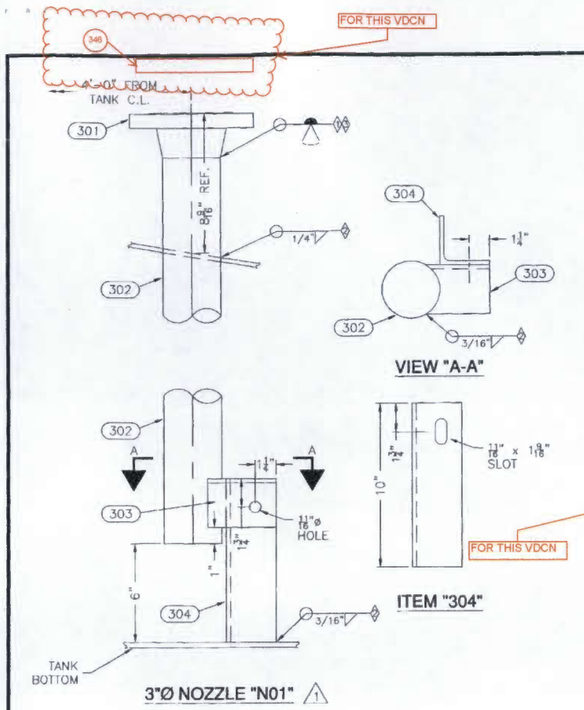
Bechtel National, Inc. — Job No. 24590
SUPPLIER DOCUMENT STATUS
1. ☒ Work may proceed.
2. ☐ Revise and resubmit. Work may proceed subject to resolution of indicated comments.
3. ☐ Revise and resubmit. Work may not proceed.
4. ☐ Receipt acknowledged. Work may proceed.
Permission to proceed does not constitute acceptance or approval of design details, calculations, analyses, test methods, or materials developed or selected by the supplier and does not relieve supplier from full compliance with contractual obligations.
REVIEWED CHAN CHUNG 2/1/05
G-321 Document Category 1, 2
(From Supplement A to G-321-E (D) or G-321-V (V), as applicable; or "N/A" if SDRS is used)
Supersedes BNI Document No. (When applicable) Rev.
Reviewed by CHAN CHUNG (Print Name) (Signature) 2/1/05 (Date)
Released by (When applicable) (Print Name) (Signature) (Date)

REV NO	DESCRIPTION	DATE	CHK'D	BY	AUTH
2	REVISED NOZZLE LOCATIONS	1/05/05	LJT	BMM	—
1	REVISED NOZZLES & ANCHORS	11/15/04	LJT	BMM	—
0	PRELIMINARY INITIAL ISSUE	6/09/04	LJT	BMM	—

PSF INDUSTRIES
STEEL PLATE FABRICATING DIVISION SEATTLE, WASHINGTON

BECHTEL NATIONAL
RIVER PROTECTION PROJECT RICHLAND, WA
SCALE: NONE P.O. NO. CONTRACT DE-AC27-01RV14136 DRAWN BY BMM
DATE: 8/09/04 CHK'D LJT
LAW CAUSTIC COLLECTION TANK 24590-LAW-MT-LVP-TK-00001
GENERAL ARRANGEMENT
PSF PROJECT 3748-1 DRAWING NUMBER D9439-1

R10454350

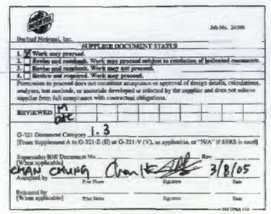


SHIP NoPC	PC MK	SHOP NoPC	DESCRIPTION	MAT'L	REMARKS	WEIGHT (POUNDS)
	N01	1	3"ø NOZZLE "N01"			174
	301	1	3"ø 150# R.F. W.N. FLG SCH 80s BORE	SA182-F316*		12
1	302	1	PIPE: 3"ø SCH 80s @ 14'-8 15/16"	SA312-T316*		155
	303	1	◁ 3" x 3" x 1/4" @ 0'-3 7/8"	T316*		2
	304	1	◁ 3" x 3" x 1/4" @ 0'-10"	T316*		4
1	305	1	5/8"ø x 1 1/2" HEX HD BOLT W/	T304		1
			(1) HEX NUT			
1	N02	1	3"ø NOZZLE "N02"			24
	306	1	3"ø 150# R.F. W.N. FLG SCH 80s BORE	SA182-F316*		12
	307	1	PIPE: 3"ø SCH 80s @ 0'-5 1/4"	SA312-T316*		5
	308	1	5/16" PL.@ 10 1/2" O.D. x 3 5/8" I.D.	SA240-T316*	ROLL @ 156 5/8" I.D.	7
	N03	1	4"ø NOZZLE "N03"			32
	310	1	4"ø 150# R.F. W.N. FLG SCH 80s BORE	SA182-F316*		17
	311	1	PIPE: 4"ø SCH 80s @ 0'-5 1/16"	SA312-T316*		6
	312	1	5/16" PL.@ 12" O.D. x 4 5/8" I.D.	SA240-T316*	ROLL @ 156 5/8" I.D.	9
1	N04	1	4"ø NOZZLE "N04"			57+
1	314	1	4"ø 150# R.F. W.N. FLG SCH 80s BORE	SA182-F316*		17
1	315	1	PIPE: 4"ø SCH 80s @ 0'-11"	SA312-T316*		14
	316	1	5/16" PL.@ 12" O.D. x 4 5/8" I.D.	SA240-T316*	ROLL @ 156 5/8" I.D.	9
1	~~340~~	~~1~~	~~B.W. ELBOW: 4"ø 90° L.R. SCH 80s~~	~~SA403-T316*~~		~~12~~
2	~~341~~	~~1~~	~~PIPE: 4"ø SCH 80s @ 12' 3 7/16"~~	~~SA312-T316*~~		~~200~~
	342	1	1/4" PL.@ 2" x 6 3/4"	SA240-T316*		1
	~~343~~	~~1~~	~~1/4" PL.@ 2" x 6 11/16"~~	~~SA240-T316*~~		~~1~~
	~~344~~	~~1~~	~~1/4" PL.@ 2" x 15 5/16"G~~	~~SA240-T316*~~	~~ROLL @ 4 5/8" I.D.~~	~~2~~
	345	2	1/2"ø x 1 1/4" HEX HD BOLT W/	T304		1
			(1) HEX NUT EA.			
	N05	1	10"ø NOZZLE "N05" W/ 2"ø INSERT "N05A"			236
	318	1	2"ø 150# R.F. W.N. FLG SCH 80s BORE	SA182-F316*		6
1	319	1	PIPE: 2"ø SCH 80s @ 1'-7 1/4"	SA312-T316*		8
	320	1	B.W. CONC. REDUCER: 2"ø x 1 1/2"ø SCH 80s	SA403-T316*		1
2	321	1	PIPE NIPPLE: 1 1/2"ø SCH 80s T.O.E. @ 1'-0"	SA312-T316*		4
1	322	1	WASH ATTACHMENT W/ (2) 7/16" SPRAY NOZZLES	T316	GAMAJET HV-8	15
2	331	1	10"ø 150# R.F. W.N. FLG SCH 40s BORE	SA182-F316*		57
	332	1	10"ø 150# R.F. BLD FLG	SA182-F316*		73
	333	1	PIPE: 10"ø SCH 40s @ 0'-7 3/16" REF.	SA312-T316*		25
	334	1	5/16" PL.@ 23" O.D. x 10 7/8" I.D.	SA240-T316*	ROLL @ 156 5/8" I.D.	29
	335	12	7/8"ø x 5" T.F.L. STUD W/	SA193-B8		18
			(2) HEX NUT EA.	SA194-8A		
	336	1	1/8" THK. RING GASKET FOR 10"ø 150# R.F.	T316 SPIRAL WOUND		–
	N06	1	4"ø NOZZLE "N06"			25
	324	1	PIPE: 4"ø SCH 80s @ 0'-6 3/16"	SA312-T316*		8
	325	1	4"ø 150# R.F. W.N. FLG SCH 80s BORE	SA182-F316*		17
	N07	1	3"ø NOZZLE "N07"			26
	327	1	3"ø 150# R.F. W.N. FLG SCH 80s BORE	SA182-F316*		12
	328	1	PIPE: 3"ø SCH 80s @ 0'-8 1/4"	SA312-T316*		7
	329	1	5/16" PL.@ 10 1/2" O.D. x 3 5/8" I.D.	SA240-T316*	ROLL @ 156 5/8" I.D.	7
					TOTAL THIS SHEET	774

* MAX. CARBON CONTENT OF 0.030%

1. SHELL NOZZLES ARE DESIGNED AND INSTALLED ACCORDING TO API 650, FIGURE 3-4B.
2. ROOF NOZZLES ARE DESIGNED AND INSTALLED ACCORDING TO API 650, FIGURE 3-16.

3 NOTES ON NOZZLE "N07" (MOVED AFTER HOLE CUT IN SHELL):
1. BEVEL AND REUSE ORIGINAL CUTOUT AS A PATCH. (SA240-T316/316L)
2. TACK PATCH IN PLACE AND WELD USING WPS #B-9F (FCAW)
3. WELD VISUALLY INSPECTED. (SEE VISUAL INSPECTION REPORT)
4. WELD GROUND FLUSH ON INSIDE OF VESSEL AND DYE PENETRANT TESTED. (SEE LP TEST REPORT)
5. PMI PERFORMED ON WELD OF PATCH TO SHELL

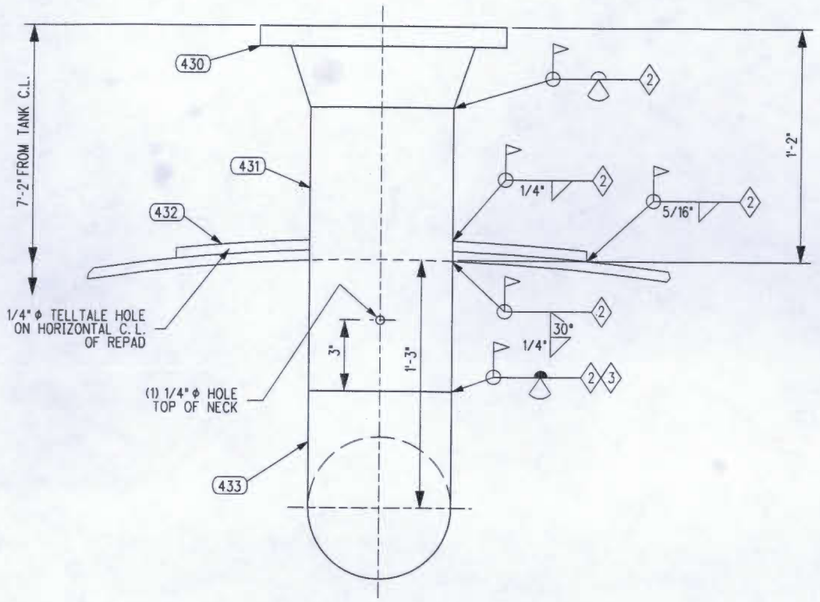


REV NO	DESCRIPTION	DATE	CHK'D	BY	AUTH
5	ADDED NOTE & DETAIL FOR N07	2/09/05	LJT	BMM	—
4	MOVED N05 TO SHELL	1/05/05	LJT	BMM	—
3	REVISED NOZZLE SIZES	11/15/04	LJT	BMM	—
2	PRELIMINARY INITIAL ISSUE	9/09/04	LJT	BMM	—

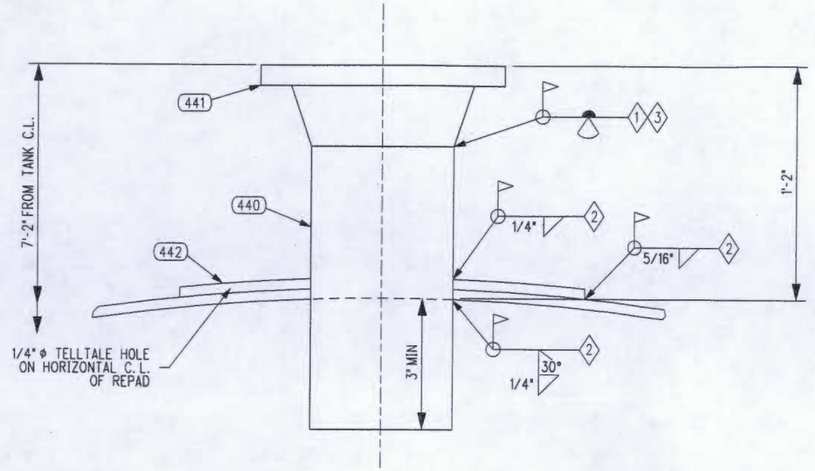
PSF INDUSTRIES
STEEL PLATE FABRICATING DIVISION SEATTLE, WASHINGTON

BECHTEL NATIONAL
RIVER PROTECTION PROJECT — RICHLAND, WA
SCALE: NONE | P.O. NO. CONTRACT DE-AC27-01RV14136 | DRAWN BY BMM | CHK'D LJT
DATE: 9/09/04
LAW CAUSTIC COLLECTION TANK 24590-LAW-MT-LVP-TK-00001
NOZZLE DETAILS
PSF PROJECT 3748-1 | DRAWING NUMBER D9439-3

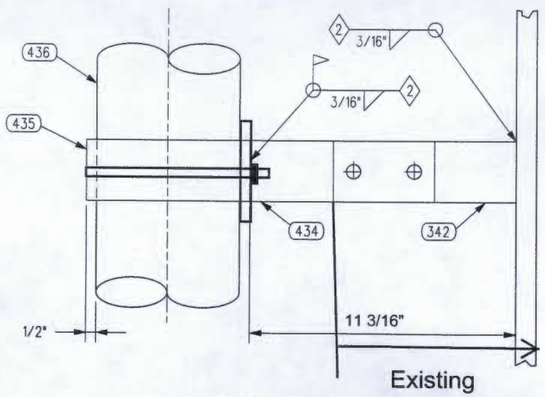
24590-CM-POA-MVAD-00049-03-00019 Rev 00D



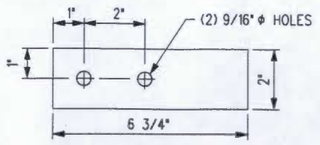
6" ϕ NOZZLE "N14"



8" ϕ NOZZLE "N13"

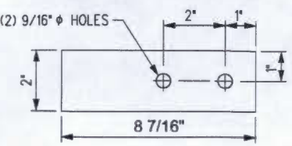


NOZZLE "N14" GUIDE



ITEM "342"

Existing plate for reuse



ITEM "434"

BILL OF MATERIALS

PC MK	SHOP No PC	DESCRIPTION	MATERIAL	REMARKS
430	1	6" WN FLANGE, CL150, SCH 40S RF	A182-F316/316L	STOCK CODE PFFWX71G5Y0A OR APPROVED EQUAL
431	1	6" PIPE, SMLS SCH40S, 1 1/2 FOOT (ESTIMATE)	A312-F316/316L	STOCK CODE PPPC0B0G0X04 OR APPROVED EQUAL
432	1	PLATE 5/16" @ 17" O.D. x 6.75" ID	A240-F316/316L	--
433	1	EL-90, LR, BW, SCH40S	A403-F316/316L	STOCK CODE PFQNV60G160K OR APPROVED EQUAL
434	1	FPA-1-10-6	--	SEE DWG 24590-WTP-PH-50-00005001
435	1	GU-E-4	--	SEE DWG 24590-WTP-PH-50-00012002
436	1	6" PIPE, SMLS SCH40S, 7 FOOT (ESTIMATE)	A312-F316/316L	STOCK CODE PPPC0B0G0X04 OR APPROVED EQUAL
440	1	8 PIPE, SMLS SCH40S, 1 1/2 FOOT (ESTIMATE)	A312-F316/316L	STOCK CODE PPPC0B0F0P05 OR APPROVED EQUAL
441	1	8" WN FLANGE, CL150, SCH 40S RF	A182-F316/316L	STOCK CODE PFFWX71F5Y05 OR APPROVED EQUAL
442	1	PLATE 5/16" @ 22" O.D. x 8.75" ID	A240-F316/316L	--

ADDITION TO 24590-CM-POA-MVAO-00019-03-00010.

Quarter Ending September 30, 2014

24590-LAW-PCN-ENV-14-003

Hanford Facility RCRA Permit Modification Notification Form

Part III, Operating Unit 10

Waste Treatment and Immobilization Plant

Index

Submitted by Co-Operator:

Roger J Landon 7/11/14

Roger J. Landon Date

Reviewed by ORP Program Office:

7/31/14

D. L. Noyes Date

Quarter Ending September 30, 2014

24590-LAW-PCN-ENV-14-003

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 prime modification is to update and replace the following P&IDs for the LAW RLD Process and Effluent Cell Sumps in Appendix 9.2 of the DWP:

Appendix 9.2			
Replace:	24590-LAW-M6-RLD-00003002, Rev. 0	With:	24590-LAW-M6-RLD-00003002, Rev. 1
	24590-LAW-M6-RLD-00003003, Rev. 0		24590-LAW-M6-RLD-00003003, Rev. 1

This modification requests Ecology approval and incorporation into the permit the specific changes to these P&IDs that are indicated by revision notes and clouds. The P&IDs include changes provided in applicable document change forms (e.g., DCN, SCN, SDDR, FCN, FCR, etc.). In addition, these P&IDs include changes associated with the resolution to comments on change documents since the issuance of the last revisions of the permitted drawings.

Significant changes to the P&IDs are summarized below:

- Modified and added notes.
- Incorporated changes from change documentation identified in the Notes section on each drawing.
- Added instructions on the placement of the level meter wave guide pipes in the Notes section on each drawing.
- Revised information on liquid level indicators. Deleted LKY tag from level indicator LI–2319 (24590-LAW-M6-RLD-00003003, Rev. 1). The LKY component is used to calculate the rate of change of liquid level over time. Added high-high-high alarms to LI–2301 through –2304 (24590-LAW-M6-RLD-00003002, Rev. 1) and to LI–2307 and –2308 (24590-LAW-M6-RLD-00003003, Rev. 1).
- Changed bottom configuration of sumps RLD–SUMP–0029 through –0036 from a conical to flat shape.

This PCN updates information in Appendix 9.2 to reflect current design. This DWP component may be re-evaluated to confirm design adequacy. If the re-evaluation results in future design changes, the changes will be reviewed by Ecology in subsequent permit modifications.

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:

24590-LAW-M6LN-20-00006 - provided to Ecology in milk run (CCN 233565)

24590-LAW-M6N-RLD-00055 - provided to Ecology in milk run (CCN 233555)

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: N/A

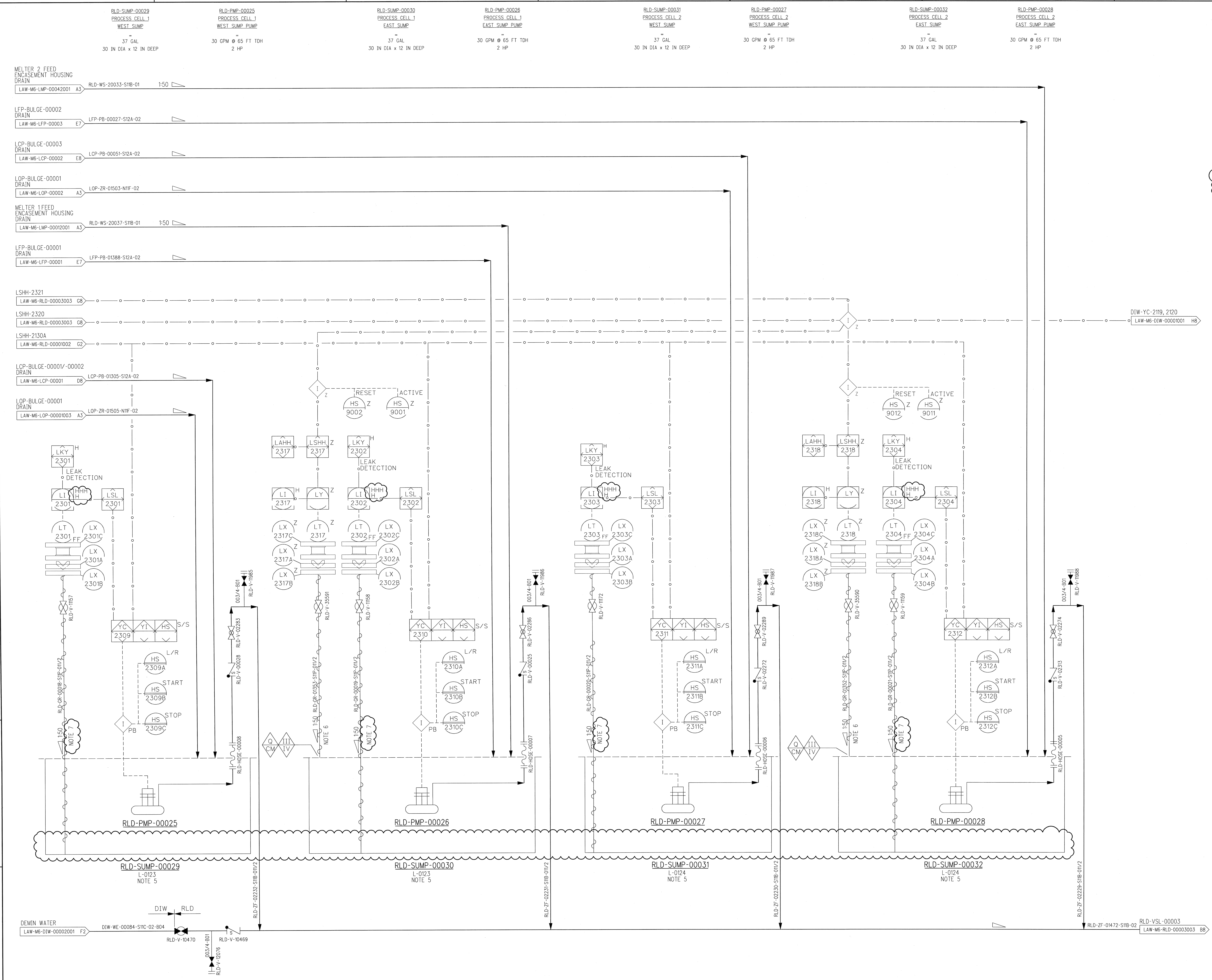
Enter wording of WAC 173-303-830, Appendix I Modification citation:

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."

Quarter Ending September 30, 2014

24590-LAW-PCN-ENV-14-003

Modification Approved/Concur: ☑ Yes ☐ Denied (state reason below) Reason for denial:	Reviewed by Ecology: S. Dahl 9/10/14 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-IV, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
5. THESE PUMPS ARE PERMANENTLY INSTALLED IN THE SUMPS.
6. TERMINATE RADAR GUIDE TUBES ON IMPORTANT TO SAFETY LEVEL INSTRUMENTS APPROXIMATELY 1-3 INCHES ABOVE THE LEVEL OF THE CELL FLOOR AT THE SUMP.
7. LEVEL METER WAVE GUIDE PIPE IS TO SIT ON THE BOTTOM OF THE SUMP AND SHALL BE WITHIN 8 INCHES OF THE SUMP CENTER. SLOTTED PORTION OF WAVE GUIDE PIPE IS TO CONTACT THE SUMP.
8. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-LAW-M6-RLD-00003, REV 6. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAW-M6N-20-00001, 24590-LAW-M6N-RLD-00034, AND -00045.
9. REVISION 1: INCORPORATED 24590-LAW-M6N-RLD-00053, ADDED NOTE 7, AND REVISED SUMP BOTTOM CONFIGURATION FROM CONICAL TO FLAT.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-LAW-3YD-RLD-00001, SYSTEM DESCRIPTION FOR THE LAW RADIOACTIVE LIQUID WASTE DISPOSAL (RLD) SYSTEM.

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
1	REVISED PER NOTE 9	PH	MO	MS/NS	DM	6.13.11
0	ISSUED FOR CONSTRUCTION, SEE NOTE 8	BF	NJ	SK/SS	RS/JJ	9/2/10

REVISION HISTORY

Q
QUALITY DESIGNATOR

ISSUED BY RPP-WTP PDC
INIT DATE
ISSUE STAMP

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	20

	BY	DATE
ORIGINATOR	FANT, BRIAN	8/31/10
CHECKER	JOHNSON, NGA T	9/1/10
APPROVER	STEVENS, ROBERT	9/2/10
REVIEWER	KRETZSCHMAR, STUART	9/1/10

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-LAW-ADR-M-01-001 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 - LAW RADIOACTIVE LIQUID WASTE DISPOSAL SYSTEM PROCESS CELL SUMPS AT EL 2 FT

SCALE: NONE

24590-LAW-M6-RLD-00003002 REV 1

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

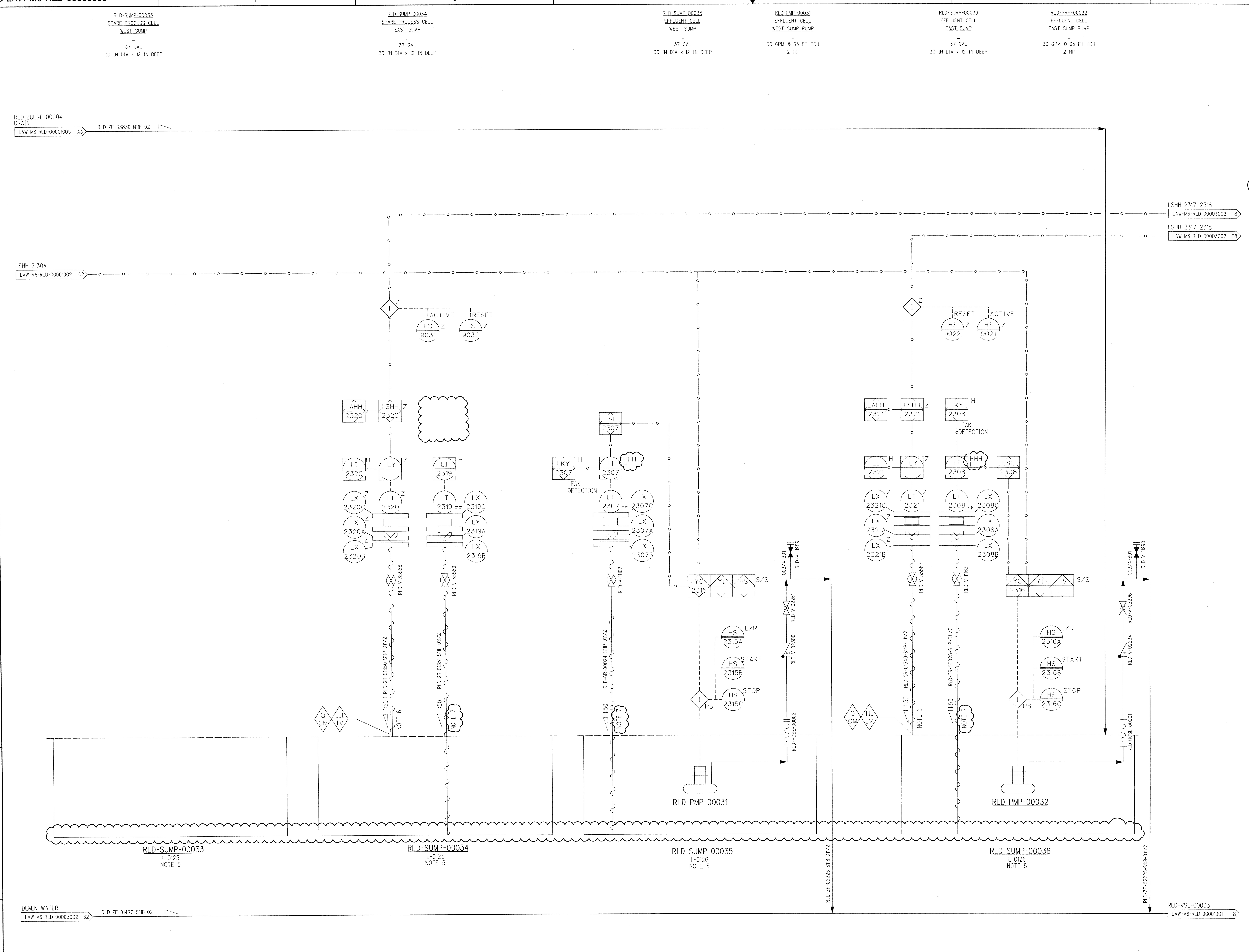
'E' SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

R11378832

6/13/2011 1:51:21 PM

PLOTTED BY: eewebb C:\Work\eewebb\dms03838\LAWM6RLD00003002.dgn

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, UNLESS OTHERWISE NOTED.
5. THESE PUMPS ARE PERMANENTLY INSTALLED IN THE SUMPS.
6. TERMINATE RADAR GUIDE TUBES ON IMPORTANT TO SAFETY LEVEL INSTRUMENTS APPROXIMATELY 1-3 INCHES ABOVE THE LEVEL OF THE CELL FLOOR AT THE SUMP.
7. LEVEL METER WAVE GUIDE PIPE IS TO SIT ON THE BOTTOM OF THE SUMP AND SHALL BE WITHIN 8 INCHES OF THE SUMP CENTER. SLOTTED PORTION OF WAVE GUIDE PIPE IS TO CONTACT THE SUMP.
8. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-LAW-M6-RLD-00003, REV 6. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAW-M6N-20-00001, 24590-LAW-M6N-RLD-00034, AND -00045.
9. REVISION 1: INCORPORATED 24590-LAW-M6N-RLD-00053, ADDED NOTE 7, AND REVISED SUMP BOTTOM CONFIGURATION FROM CONICAL TO FLAT.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

1. 24590-LAW-3YD-RLD-00001, SYSTEM DESCRIPTION FOR THE LAW RADIOACTIVE LIQUID WASTE DISPOSAL (RLD) SYSTEM.

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 9	PH	MO	MS/NS	DM	6.13.11
0	ISSUED FOR CONSTRUCTION, SEE NOTE 8	BF	NJ	SK/SS	RS/JJ	9/2/10

REVISION HISTORY

Q
QUALITY DESIGNATOR

ISSUED BY RPP-WTP PDC
INIT DATE
ISSUE STAMP

PROJECT No.	24590
SITE	HANFORD
AREA	200E
BUILDING No.	20

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

	BY	DATE
ORIGINATOR	FANT, BRIAN	8/27/10
CHECKER	JOHNSON, NGA T	9/1/10
APPROVER	STEVENS, ROBERT	9/2/10
REVIEWER	KRETZSCHMAR, STUART	9/1/10

CONTRACT No: DE-AC27-01RV14136

P&ID - LAW RADIOACTIVE LIQUID WASTE DISPOSAL SYSTEM PROCESS AND EFFLUENT CELL SUMPS AT EL 2 FT

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-LAW-ADR-M-01-001 REV: 2
E&NS SCREENING REQUIRED? [X] YES [ ] NO E&NS INITIAL IF YES ____

SCALE: NONE

24590-LAW-M6-RLD-00003003 REV 1

SCREENING IS REQUIRED FOR DRAWING TYPES IDENTIFIED IN 24590-WTP-GPP-SREG-002

'E' SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

R11378833

6/13/2011 1:55:02 PM

PLOTTED BY: eewebb C:\Work\eewebb\dms03838\LAWM6RLD00003003.dgn

FORM E_SDN.DGN 02/2009

Quarter Ending 6/30/2014 24590-WTP-PCN-ENV-14-004

Hanford Facility RCRA Permit Modification Notification Form
Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

Index

Submitted by Co-Operator:

R.T. Brock 5/18/14
R. T. Brock Date

Reviewed by ORP Program Office:

D. L. Noyes 6/30/14
D. L. Noyes Date

Quarter Ending 6/30/2014 24590-WTP-PCN-ENV-14-004

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 P&ID 24590-WTP-M6-50-00002, Symbols and Legend drawing (Sheet 2 of 8) in Appendix 7.2 of the DWP to reflect revisions.

Piping & Instrumentation Diagrams, Appendix 7.2			
Replace:	24590-WTP-M6-50-00002, Rev. 4	With:	24590-WTP-M6-50-00002, Rev. 5

The referenced P&ID has been revised. It incorporates 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 drawing. This modification requests Ecology approval and incorporation into the permit, the specific changes to this P&ID that are indicated by notes 15, 18, 21, and 23, as well as the clouds.

This PCN updates information in Appendix 7.2 to reflect current symbols on P&IDs.

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:

None

In accordance with Permit Condition III.10.C.2.c 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: A.1

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

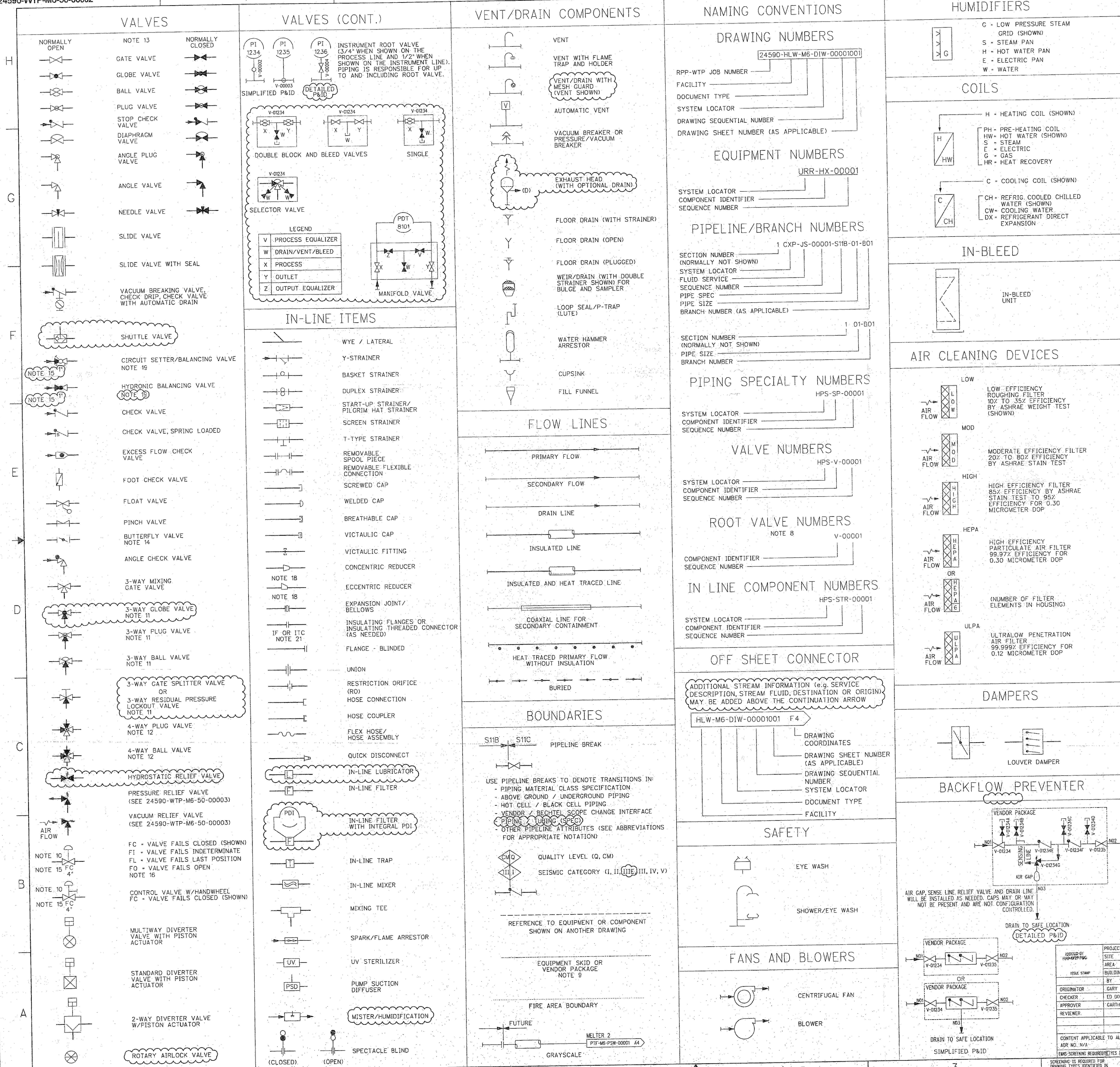
A.1. Administrative and informational changes

Modification Approved/Concur: [✓] Yes [ ] Denied (state reason below)

Reason for denial:

Reviewed by Ecology:

S. Dahl — Date: 9/12/14


VALVES
NORMALLY OPEN
NOTE 13
NORMALLY CLOSED
GATE VALVE
GLOBE VALVE
BALL VALVE
PLUG VALVE
STOP CHECK VALVE
DIAPHRAGM VALVE
ANGLE PLUG VALVE
ANGLE VALVE
NEEDLE VALVE
SLIDE VALVE
SLIDE VALVE WITH SEAL
VACUUM BREAKING VALVE, CHECK DRIP, CHECK VALVE WITH AUTOMATIC DRAIN
SHUTTLE VALVE
CIRCUIT SETTER/BALANCING VALVE NOTE 19
HYDRONIC BALANCING VALVE
CHECK VALVE
CHECK VALVE, SPRING LOADED
EXCESS FLOW CHECK VALVE
FOOT CHECK VALVE
FLOAT VALVE
PINCH VALVE
BUTTERFLY VALVE NOTE 14
ANGLE CHECK VALVE
3-WAY MIXING GATE VALVE
3-WAY GLOBE VALVE NOTE 11
3-WAY PLUG VALVE NOTE 11
3-WAY BALL VALVE NOTE 11
3-WAY GATE SPLITTER VALVE OR 3-WAY RESIDUAL PRESSURE LOCKOUT VALVE NOTE 11
4-WAY PLUG VALVE NOTE 12
4-WAY BALL VALVE NOTE 12
HYDROSTATIC RELIEF VALVE
PRESSURE RELIEF VALVE (SEE 24590-WTP-M6-50-00003)
VACUUM RELIEF VALVE (SEE 24590-WTP-M6-50-00003)
AIR FLOW
FC - VALVE FAILS CLOSED (SHOWN)
FI - VALVE FAILS INDETERMINATE
FL - VALVE FAILS LAST POSITION
FO - VALVE FAILS OPEN
NOTE 16
CONTROL VALVE W/HANDWHEEL
FC - VALVE FAILS CLOSED (SHOWN)
MULTIWAY DIVERTER VALVE WITH PISTON ACTUATOR
STANDARD DIVERTER VALVE WITH PISTON ACTUATOR
2-WAY DIVERTER VALVE W/PISTON ACTUATOR
ROTARY AIRLOCK VALVE
VALVES (CONT.)
INSTRUMENT ROOT VALVE (3/4" WHEN SHOWN ON THE PROCESS LINE AND 1/2" WHEN SHOWN ON THE INSTRUMENT LINE). PIPING IS RESPONSIBLE FOR UP TO AND INCLUDING ROOT VALVE.
SIMPLIFIED P&ID
DETAILED P&ID
DOUBLE BLOCK AND BLEED VALVES
SINGLE
SELECTOR VALVE
LEGEND
V PROCESS EQUALIZER
W DRAIN/VENT/BLEED
X PROCESS
Y OUTLET
Z OUTPUT EQUALIZER
MANIFOLD VALVE
IN-LINE ITEMS
WYE / LATERAL
Y-STRAINER
BASKET STRAINER
DUPLEX STRAINER
START-UP STRAINER/ PILGRIM HAT STRAINER
SCREEN STRAINER
T-TYPE STRAINER
REMOVABLE SPOOL PIECE
REMOVABLE FLEXIBLE CONNECTION
SCREWED CAP
WELDED CAP
BREATHABLE CAP
VICTAULIC CAP
VICTAULIC FITTING
CONCENTRIC REDUCER
ECCENTRIC REDUCER
EXPANSION JOINT/ BELLOWS
INSULATING FLANGES OR INSULATING THREADED CONNECTOR (AS NEEDED)
FLANGE - BLINDED
UNION
RESTRICTION ORIFICE (RO)
HOSE CONNECTION
HOSE COUPLER
FLEX HOSE/ HOSE ASSEMBLY
QUICK DISCONNECT
IN-LINE LUBRICATOR
IN-LINE FILTER
IN-LINE FILTER WITH INTEGRAL PDI
IN-LINE TRAP
IN-LINE MIXER
MIXING TEE
SPARK/FLAME ARRESTOR
UV STERILIZER
PUMP SUCTION DIFFUSER
MISTER/HUMIDIFICATION
SPECTACLE BLIND
(CLOSED)
(OPEN)
VENT/DRAIN COMPONENTS
VENT
VENT WITH FLAME TRAP AND HOLDER
VENT/DRAIN WITH MESH GUARD (VENT SHOWN)
AUTOMATIC VENT
VACUUM BREAKER OR PRESSURE/VACUUM BREAKER
EXHAUST HEAD (WITH OPTIONAL DRAIN)
FLOOR DRAIN (WITH STRAINER)
FLOOR DRAIN (OPEN)
FLOOR DRAIN (PLUGGED)
WEIR/DRAIN (WITH DOUBLE STRAINER SHOWN) FOR BULGE AND SAMPLER
LOOP SEAL/P-TRAP (LUTE)
WATER HAMMER ARRESTOR
CUPSINK
FILL FUNNEL
FLOW LINES
PRIMARY FLOW
SECONDARY FLOW
DRAIN LINE
INSULATED LINE
INSULATED AND HEAT TRACED LINE
COAXIAL LINE FOR SECONDARY CONTAINMENT
HEAT TRACED PRIMARY FLOW WITHOUT INSULATION
BURIED
BOUNDARIES
PIPELINE BREAK
USE PIPELINE BREAKS TO DENOTE TRANSITIONS IN:
- PIPING MATERIAL CLASS SPECIFICATION
- ABOVE GROUND / UNDERGROUND PIPING
- HOT CELL / BLACK CELL PIPING
- VENDOR / BECHTEL SCOPE CHANGE INTERFACE
- PIPING CLASS (USING SPEC)
- OTHER PIPELINE ATTRIBUTES (SEE ABBREVIATIONS FOR APPROPRIATE NOTATION)
QUALITY LEVEL (Q, CM)
SEISMIC CATEGORY (I, II, IIIE, III, IV, V)
REFERENCE TO EQUIPMENT OR COMPONENT SHOWN ON ANOTHER DRAWING
EQUIPMENT SKID OR VENDOR PACKAGE NOTE 9
FIRE AREA BOUNDARY
FUTURE
MELTER 2
GRAYSCALE
NAMING CONVENTIONS
DRAWING NUMBERS
24590-HLW-M6-DIW-00001001
RPP-WTP JOB NUMBER
FACILITY
DOCUMENT TYPE
SYSTEM LOCATOR
DRAWING SEQUENTIAL NUMBER
DRAWING SHEET NUMBER (AS APPLICABLE)
EQUIPMENT NUMBERS
URR-HX-00001
SYSTEM LOCATOR
COMPONENT IDENTIFIER
SEQUENCE NUMBER
PIPELINE/BRANCH NUMBERS
1 CXP-JS-00001-S11B-01-B01
SECTION NUMBER (NORMALLY NOT SHOWN)
SYSTEM LOCATOR
FLUID SERVICE
SEQUENCE NUMBER
PIPE SPEC
PIPE SIZE
BRANCH NUMBER (AS APPLICABLE)
1 01-B01
SECTION NUMBER (NORMALLY NOT SHOWN)
PIPE SIZE
BRANCH NUMBER
PIPING SPECIALTY NUMBERS
HPS-SP-00001
SYSTEM LOCATOR
COMPONENT IDENTIFIER
SEQUENCE NUMBER
VALVE NUMBERS
HPS-V-00001
SYSTEM LOCATOR
COMPONENT IDENTIFIER
SEQUENCE NUMBER
ROOT VALVE NUMBERS
NOTE 8
V-00001
COMPONENT IDENTIFIER
SEQUENCE NUMBER
IN LINE COMPONENT NUMBERS
HPS-STR-00001
SYSTEM LOCATOR
COMPONENT IDENTIFIER
SEQUENCE NUMBER
OFF SHEET CONNECTOR
ADDITIONAL STREAM INFORMATION (e.g. SERVICE DESCRIPTION, STREAM FLUID, DESTINATION OR ORIGIN) MAY BE ADDED ABOVE THE CONTINUATION ARROW
HLW-M6-DIW-00001001 F4
DRAWING COORDINATES
DRAWING SHEET NUMBER (AS APPLICABLE)
DRAWING SEQUENTIAL NUMBER
SYSTEM LOCATOR
DOCUMENT TYPE
FACILITY
SAFETY
EYE WASH
SHOWER/EYE WASH
FANS AND BLOWERS
CENTRIFUGAL FAN
BLOWER
HUMIDIFIERS
G - LOW PRESSURE STEAM GRID (SHOWN)
S - STEAM PAN
H - HOT WATER PAN
E - ELECTRIC PAN
W - WATER
COILS
H - HEATING COIL (SHOWN)
PH - PRE-HEATING COIL
HW - HOT WATER (SHOWN)
S - STEAM
E - ELECTRIC
G - GAS
HR - HEAT RECOVERY
C - COOLING COIL (SHOWN)
CH - REFRIG. COOLED CHILLED WATER (SHOWN)
CW - COOLING WATER
DX - REFRIGERANT DIRECT EXPANSION
IN-BLEED
IN-BLEED UNIT
AIR CLEANING DEVICES
LOW
LOW EFFICIENCY ROUGHING FILTER 10% TO 35% EFFICIENCY BY ASHRAE WEIGHT TEST (SHOWN)
MOD
MODERATE EFFICIENCY FILTER 20% TO 80% EFFICIENCY BY ASHRAE STAIN TEST
HIGH
HIGH EFFICIENCY FILTER 85% EFFICIENCY BY ASHRAE STAIN TEST TO 95% EFFICIENCY FOR 0.30 MICROMETER DOP
HEPA
HIGH EFFICIENCY PARTICULATE AIR FILTER 99.97% EFFICIENCY FOR 0.30 MICROMETER DOP
OR
(NUMBER OF FILTER ELEMENTS IN HOUSING)
ULPA
ULTRALOW PENETRATION AIR FILTER 99.999% EFFICIENCY FOR 0.12 MICROMETER DOP
AIR FLOW
DAMPERS
LOUVER DAMPER
BACKFLOW PREVENTER
VENDOR PACKAGE
AIR GAP
AIR GAP, SENSE LINE, RELIEF VALVE AND DRAIN LINE WILL BE INSTALLED AS NEEDED. CAPS MAY OR MAY NOT BE PRESENT AND ARE NOT CONFIGURATION CONTROLLED.
DRAIN TO SAFE LOCATION
DETAILED P&ID
OR
SIMPLIFIED P&ID

NOTES:

1. DELETED
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.

3-7. DELETED

8. ROOT VALVE SYSTEM IDENTIFIER IS NOT SHOWN, BUT SHALL MATCH THE SAME SYSTEM IDENTIFIER AS THE LINE NUMBER IT IS ATTACHED TO.
9. EQUIPMENT SKID OR VENDOR PACKAGE DESIGNED BY VENDOR WILL INDICATE THIS LINE STYLE (BY "VENDOR PACKAGE" OR "VENDOR" AND "BECHTEL" WITH ARROWS, FOR EXAMPLE). SKID OR PACKAGE TO BE DESIGNED BY BECHTEL WILL NOT INDICATE VENDOR, WILL SHOW BOUNDARY LINE ONLY.
10. VALVE EITHER DIAPHRAGM OR PISTON ACTUATED.
11. 3-WAY VALVES ARE SHOWN WITH ONE PATH NORMALLY CLOSED.
12. 4-WAY VALVES ARE SHOWN WITH TWO PATHS NORMALLY CLOSED.
13. DRAIN VALVES ARE SHOWN ON P&IDs AS HALF SIZE.
14. BUTTERFLY VALVE SHALL BE DESIGNATED NO (NORMALLY OPENED), NC (NORMALLY CLOSED), LO (LOCKED OPENED) OR LC (LOCKED CLOSED).
15. DISPLAY VALVE SIZE WHEN VALVE SIZE IS DIFFERENT THAN THE SIZE OF THE INTERFACING PIPING. SHOW REDUCERS IF VALVE IS DIFFERENT SIZE THAN PIPELINE AND UPSTREAM AND DOWNSTREAM STRAIGHT PIPE RUNS ARE REQUIRED BETWEEN THE REDUCERS AND THE VALVE. NOTE THAT VALVE INLET AND OUTLET PIPING BETWEEN THE REDUCERS AND VALVE IS TO BE TAGGED UNIQUELY.
16. CONTROL VALVE FAIL POSITION TO BE SHOWN ON ALL P&IDs.
17. REVISION 3: REVISED TO INCORPORATE 24590-WTP-M6N-50-00039 AND 00041. ADDED NOTES, VACUUM BREAKING VALVE/CHECK VALVE WITH AUTOMATIC DRAIN SYMBOL, SHEET NUMBER TO OFF SHEET CONNECTOR SYMBOL AND DRAWING NUMBER UNDER NAMING CONVENTIONS, REVISED ROOT VALVES DETAIL TO SHOW DETAILED AND SIMPLIFIED ROOT VALVES AND MINOR EDITORIAL CHANGES.
18. A CONNECTING PIPE THAT IS REQUIRED BETWEEN REDUCERS AND EQUIPMENT (NOT TO EXCEED 80 INCHES IN LENGTH) OR IN-LINE COMPONENT CONNECTIONS (NOT TO EXCEED 12 INCHES OR 15 PIPE DIAMETERS IN LENGTH, WHICH EVER IS GREATER) NEED NOT BE SHOWN ON P&IDS AND LINE LISTS. DESIGN PRESSURE/TEMPERATURE, MATERIAL, INSULATION TYPE, DWP REQUIREMENTS, AND PAINT CODE SHALL BE THE SAME AS THE ADJACENT CONNECTING PIPE SHOWN ON THE P&ID AND RESPECTIVE LINE LIST. THE INSULATION THICKNESS OF THE CONNECTING PIPE MAY BE AS REQUIRED FOR THE PIPE SIZE OR MAY BE THE SAME THICKNESS AS THE ADJACENT CONNECTING PIPE. SEE DWG 24590-WTP-J0-50-00012 FOR IN-LINE FLOW DEVICES STRAIGHT RUN REQUIREMENTS.
19. TO RETAIN CALIBRATED ACCURACY, A MINIMUM LENGTH OF UNRESTRICTED 5 PIPE DIAMETERS OF STRAIGHT PIPE UPSTREAM AND 2 PIPE DIAMETERS OF STRAIGHT PIPE DOWNSTREAM OF THE VALVE SHOULD BE MAINTAINED.
20. VALVE BODY SYMBOL MAY BE SHOWN USING A GENERAL VALVE SYMBOL (GATE) IN ACCORDANCE WITH ISA S5.1, SECTION 6.4; OR THE VALVE BODY SYMBOL MAY BE SHOWN AS THE SPECIFIC PURCHASED TYPE (i.e. BALL, NEEDLE, ETC.). VALVES MAY BE SHOWN NORMALLY CLOSED IF THE INSTRUMENT IS NOT CONTINUALLY IN USE.
21. INSTALLED IF KITS WHICH ARE DELETED ON THE P&ID MAYBE REPLACED BY SPECIFICATION GASKETS, STUDS, AND NUTS. IF KITS MAYBE LEFT IN THE DESIGN AND/OR ADDED, WITH THE FOLLOWING EXCEPTIONS.
    - WHERE THE DESIGN TEMPERATURE OF THE PIPING EXCEEDS 300°F.
    - AT INSTALLED LOCATIONS AT BELOWGROUND TO ABOVEGROUND PIPING TRANSITIONS ENTERING BUILDING STRUCTURES, WHERE THE UNDERGROUND PIPING IS PROTECTED BY THE CATHODIC PROTECTION SYSTEM.
    - WHERE THE PIPING IS QUALITY LEVEL Q.
22. REVISION 4: REVISED TO INCORPORATE 24590-WTP-M6N-50-00045, -00050 AND FURTHER REVISED. REVISED/ADDED/DELETED NOTES, DRAWING TABLE, INSULATING THREADED CONNECTOR. ADDED BACKFLOW PREVENTER AND HIGH PRESSURE/TEMPERATURE THREE WAY ROOT VALVES FROM SHEET 4 AND MINOR EDITORIAL CHANGES.
23. REVISION 5: REVISED TO INCORPORATE 24590-WTP-M6LN-50-00002, 24590-WTP-M6LN-M80T-00002, 24590-WTP-M6N-50-00052, AND -00065, REVISED/ADDED/DELETED NOTES CALLOUTS, SEISMIC CATEGORY, OFF SHEET CONNECTOR DESCRIPTION, NOTES, VALVES, IN-LINE COMPONENTS DESCRIPTION, DOUBLE BLOCK AND BLEED VALVES, AND SINGLE.

DRAWING TABLE

DRAWING INDEX	
DWG NO	TITLE

REVISION HISTORY

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
5	REVISED PER NOTE 23	LCS	MM	EI/AP		4/4/14
4	REVISED PER NOTE 22	LCS	EI	ES/CL	RES	3/02/09
0	ISSUED FOR USE	GB	ED		GD	05-05-02

PROJECT No.	24590	
SITE	HANFORD	
AREA	200E	
BUILDING No.		
	BY	DATE
ORIGINATOR	GARY BEST	04-26-02
CHECKER	ED DONOSO	04-29-02
APPROVER	GARTH DUNCAN	05-05-02
REVIEWER		

CONTENT APPLICABLE TO ALARA? [ ] YES [X] NO

ADR NO. N/A REV:

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 SYMBOLS AND LEGEND SHEET 2 OF 8

SCALE: NONE

24590-WTP-M6-50-00002 REV 5

"E" SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED

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FORM E.50N.DGN 02/2009

Hanford Facility RCRA Permit Modification Notification Forms

Part III, Operating Unit 11

Integrated Disposal Facility

Index

Submitted by Co-Operator: 9/18/14 Date

Reviewed by RL Program Office: 9/22/14 Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Integrated Disposal Facility	**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 Chapters and 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 2.0	Topographic Map Description, dated ~~April 9, 2006~~ September 30, 2014
Chapter 3.0	Waste Analysis Plan, dated June 30, 2013
Chapter 4.0	Process Information, dated December 31, 2008
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 June 20, 2013
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~~ September 30, 2014
Chapter 11.0	Closure ~~and Post Closure~~ Requirements, dated ~~December 31, 2008~~ September 30, 2014
Chapter 13.0	Other Federal and State Laws, dated April 9, 2006

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 ~~39~~ (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. Insertion of Chapter 2 information is needed to maintain continuity with IDF unit-specific permit documentation. Chapter 2 was adopted into the permit on 3/10/2006 (Ecology Letter 0600771). The Chapter 2 reference was inadvertently deleted from Section III.11.A, in a prior permit modification (Publication 07-05-009, dated 11/21/07). Chapter 2 is undergoing a Class 1 modification in the quarter ending 6/30/14. ..... In the Class I modification for the quarter ending 12/31/08 (DOE ltr 09-EMD-0024 and Ecology approval ltr 0900362, dated 1/22/09), Ch. 13.0 was removed from the Chapters/Addenda list on the first page of the IDF permit conditions document. However, no modification form requesting this change and/or deleting Ch. 13.0 from the permit was provided. Therefore, Ch. 13.0 is being reinserted into the list. For configuration control purposes, Ch. 13.0 is included in subsequent pages .... The reference to Permit Att. 3 is changed to Att. 9 to maintain continuity with a prior Attachment numbering change (DOE letter 11-EMD-0002, dated 10/13/2010 and Ecology approval letter DOEC-10272010, dated 10/27/2010). The dates for Ch. 8 and 11 are revised to reflect most recent modification dates. Chapter 11 title is revised to reflect its content.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/17/14 Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Integrated Disposal Facility	**Part III, Operating Unit 11**

Description of Modification:

Hanford Facility RCRA Permit III.11 Permit Conditions:

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.~~

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. This change is administrative in nature as it corrects a reference made to a permit section that is marked "reserved." Note, the reserved section (i.e., Condition III.11.B.5.c) was introduced into the permit through a permit modification (Ecology Publication 07-05-009, dated 11/21/07). From inception, no requirements have been promulgated under permit requirement III.11.B.5.c. Unit Monitoring for these systems is already called out in Section III.11.B.5.e, et al., and it would be redundant to duplicate this requirement in a subsequent section.

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

Reason for denial:

Reviewed by Ecology:

S.L. Dahl-Crumpler 9/17/14

S.L. Dahl-Crumpler 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 Permit Conditions (multiple sub-sections):

III.11.B.5.a.1 change to III.11.B.5.a.i
III.11.B.5.a.2 change to III.11.B.5.a.ii

III.11.B.5.e.1 change to III.11.B.5.e.i
III.11.B.5.e.2 change to III.11.B.5.e.ii
III.11.B.5.e.3 change to III.11.B.5.e.iii
III.11.B.5.e.4 change to III.11.B.5.e.iv
III.11.B.5.e.5 change to III.11.B.5.e.v
III.11.B.5.e.6 change to III.11.B.5.e.vi

III.11.D.1.b.1 change to III.11.D.1.b.i

III.11.D.1.d.1 change to III.11.D.1.d.i

III.11.D.1.d.2 change to III.11.D.1.d.ii
III.11.D.1.d.2.a change to III.11.D.1.d.ii.a
III.11.D.1.d.2.b change to III.11.D.1.d.ii.b
III.11.D.1.d.2.c change to III.11.D.1.d.ii.c

III.11.I.1.b.1 change to III.11.I.1.b.i

III.11.I.2.a.1 change to III.11.I.2.a.i
III.11.I.2.a.2 change to III.11.I.2.a.ii
III.11.I.2.a.3 change to III.11.I.2.a.iii
III.11.I.2.a.4 change to III.11.I.2.a.iv

III.11.I.5.a.1 change to III.11.I.5.a.i
III.11.I.5.a.2 change to III.11.I.5.a.ii
III.11.I.5.a.3 change to III.11.I.5.a.iii

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. Administrative editing necessary to ensure the number of the conditions file is accurate and consistent. An editorial error was made in 2010 (10-EMD-0080, dated July 8, 2010) and this modification will correct the inaccurate formatting of the conditions file.

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

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/17/14
Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Integrated Disposal Facility	**Part III, Operating Unit 11**

Description of Modification:
Hanford Facility RCRA Permit III.11 Permit Conditions:

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.c~~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.

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. Text revised to reflect current permit condition section number.

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

Reviewed by Ecology:
S. L. Dahl-Crumpler 9/17/14
Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Integrated Disposal Facility	**Part III, Operating Unit 11**

Description of Modification:

Hanford Facility RCRA Permit III.11 Permit Conditions:

III.11.C.1.c Compliance Schedule

Proposed conceptualized final cover design is presented in Chapter 11, Closure ~~and Financial Assurance~~ Requirements. 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.

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. This change is administrative in nature as it corrects a reference title to Chapter 11.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/17/14

Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Integrated Disposal Facility	**Part III, Operating Unit 11**

Description of Modification:
Hanford Facility RCRA Permit III.11 Permit Conditions:

III.11.E.1.e ~~Ground water~~ Groundwater monitoring data shall be reported to Ecology ~~on an annual basis beginning on March 1 after the issue date of this permit and~~ annually ~~on March 1after that~~ by July 31. The annual report shall include monitoring results for the 12-month period from January 1 through December 31.

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

Per WAC 173-303-830(4)(d)(i) The permittee requests that this modification be classified as a Class [1]1. This classification is appropriate, since the modification does not substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment.

Text change necessary to ensure accuracy. It appears that this text was changed some time around June of 2010, but was never formally approved by Ecology through a permit modification (see letter 10-EMD-0080, dated July 8, 2010). Therefore, we are formally documenting this text change in this IDF Modification..

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

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/17/14
Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Integrated Disposal Facility	**Part III, Operating Unit 11**

Description of Modification:

Hanford Facility RCRA Permit III.11 Permit Conditions:

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.11.H.1. Only equipment that can be adequately supported by the operations layer as specified in Permit Condition III.11.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.

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. Text revised to reflect correction permit section number.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/17/14

Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Integrated Disposal Facility	**Part III, Operating Unit 11**

Description of Modification:
Hanford Facility RCRA Permit III.11 Permit Conditions:

III.11.H.2 The Permittees shall construct berms and ditches to prevent run-on and run-off in accordance with the requirements of Chapter 4, Section 4.3.8 of the IDF portion 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.

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. Added "Chapter 4" to better reflect location of permit section number.

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

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/17/14
Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Integrated Disposal Facility	**Part III, Operating Unit 11**

Description of Modification:
Hanford Facility RCRA Permit III.11 Permit Conditions:

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, Addendum J.1, Addendum J.2, and Appendix 4A, §1, subsection 7, except as otherwise specified in this Permit.

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. Text deleted. Chapter 7.0 does not exist. Chapter 7.0 was replaced by Addenda J.1 and J.2 in a prior Class 1 permit modification (DOE Letter 09-EMD-0024, dated 1/7/09 and Ecology approval letter 0900362, dated 1/22/2009).

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

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/17/14
Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Integrated Disposal Facility	**Part III, Operating Unit 11**

Description of Modification:

Hanford Facility RCRA Permit III.11 Permit Conditions:

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~~ Analysis Plan (~~Appendix 3A~~Chapter 3.0 of the IDF portion of this permit ~~application, DOE/RL-2003-12, Rev 1~~).

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. Text modified to reflect correct permit section and correct title of chapter.

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

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/17/14

S. L. Dahl-Crumpler Date

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **Integrated Disposal Facility**	Permit Part **Part III, Operating Unit 11**

Description of Modification:
Chapter 2.0, Section 2.1:

2.0 TOPOGRAPHIC MAP DESCRIPTION

2.1 Introduction

A topographic map is located in ~~Appendix 2A~~the Department of Ecology library (3100 Port of Benton Boulevard, Richland, WA 99354) reflecting general topographic requirements and the area set aside for IDF. The actual dimensions and waste volume capacity of the RCRA trench that is being permitted are described in the Part A and ~~Section 2.1~~Appendix 4A of the IDF portion of this permit ~~application~~. The IDF is located on the Hanford Facility, which limits the use of surrounding land to Department of Energy activities. There are no surface waters in the area defined on the topographical map. Chapter 5.0 includes figures that reflect additional requirements for topographic maps. For the point of compliance and proposed groundwater wells see Figure 5-8, and for the aquifer location see Figure 5-4 and Section 5.3 for the identification of the aquifer.

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. These changes are administrative in nature and are needed to maintain continuity with other sections of the permit. Due to the need to protect sensitive information in Hanford Facility topo maps, Ecology and DOE adopted the approach of including the following language in Section XV of Part A form documentation: "*Topographic map is located in the Ecology Library.*" The IDF Part A form documentation was updated to include the new language via DOE letter 09-EMD-0007, dated 10/9/08 and approved by Ecology 11/6/08, letter 0802709.

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

Reviewed by Ecology:
S. L. Dahl-Crumpler 9/17/14 Date

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **Integrated Disposal Facility**	Permit Part **Part III, Operating Unit 11**

Description of Modification:
Chapter 8.0, Section 8.0:

8.0 PERSONNEL TRAINING [H]

This chapter discusses personnel training requirements based on WAC 173-303 and the Hanford Facility RCRA Permit (Permit). Permit Condition II.C (Personnel Training), contains training requirements applicable to Hanford Facility personnel and non-Facility personnel. Compliance with these requirements at the IDF is demonstrated by information contained in Permit Attachment ~~33, Chapter 8.0 (DOE/RL-91-28)~~5, and this chapter. This chapter supplements Permit Attachment ~~33, Chapter 8.0 (DOE/RL-91-28)~~5.

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. This change is necessary to maintain consistency with prior modifications to other portions of the permit. Attachment 33 was removed from the permit via DOE letter 11-EMD-0002, dated 10/13/10 and approved by Ecology 10/27/10, TPA Administrative Record document accession number 1011020995.

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

Reviewed by Ecology:
S. L. Dahl-Crumpler 9/17/14 Date

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **Integrated Disposal Facility**	Permit Part **Part III, Operating Unit 11**

Description of Modification:
Chapter 8.0, Section 8.1:

8.1 OUTLINE OF INTRODUCTORY AND CONTINUING TRAINING PROGRAMS [H-2]

The introductory and continuing training programs are designed to prepare personnel to manage and maintain the TSD unit in a safe, effective, and environmentally sound manner. In addition to preparing personnel to manage and maintain TSD units under normal conditions, the training programs ensure that personnel are prepared to respond in a prompt and effective manner should abnormal or emergency conditions occur. Emergency response training is consistent with the description of actions contained in ~~Chapter 7.0~~Addendum J.1, Contingency Plan, Pre-Active Life.

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. This change is necessary to maintain consistency with prior modifications to other portions of the permit. Chapter 7.0 does not exist. Chapter 7.0 was replaced by Addenda J.1 and J.2 in a prior Class 1 permit modification (DOE Letter 09-EMD-0024, dated 1/7/09 and Ecology approval letter 0900362, dated 1/22/2009).

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

Reviewed by Ecology:
S. L. Dahl-Crumpler 9/17/14 Date

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **Integrated Disposal Facility**	Permit Part **Part III, Operating Unit 11**

Description of Modification:
Chapter 8.0, Section 8.1:

8.1 OUTLINE OF INTRODUCTORY AND CONTINUING TRAINING PROGRAMS [H-2]

The introductory and continuing training programs are designed to prepare personnel to manage and maintain the TSD unit in a safe, effective, and environmentally sound manner. In addition to preparing personnel to manage and maintain TSD units under normal conditions, the training programs ensure that personnel are prepared to respond in a prompt and effective manner should abnormal or emergency conditions occur. Emergency response training is consistent with the description of actions contained in Chapter 7.0, Contingency Plan, Pre-Active Life.

Introductory training includes general Hanford Facility training and TSD unit-specific training. General Hanford Facility training is described in Permit Attachment ~~33, §8.1 (DOE/RL-91-28)~~5, and is provided in accordance with Permit Condition II.C.2. TSD unit-specific training is provided to Hanford Facility personnel allowing personnel to work unescorted. Hanford Facility personnel cannot perform a task for which they are not properly trained, except to gain required experience while under the direct supervision of a supervisor or coworker who is properly trained. Hanford Facility personnel assigned the job title of Emergency Coordinator and alternates to this position performing tasks described in WAC 173-303-360 (e.g., Building Emergency Directors) are thoroughly familiar with applicable contingency plan documentation, operations, activities, location, and properties of all waste handled, location of all records, and the unit/building layout.

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. This change is necessary to maintain consistency with prior modifications to other portions of the permit. Attachment 33 was removed from the permit via DOE letter 11-EMD-0002, dated 10/13/10 and approved by Ecology 10/27/10, TPA Administrative Record document accession number 1011020995.

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

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/17/14 Date

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **Integrated Disposal Facility**	Permit Part **Part III, Operating Unit 11**

Description of Modification:
Chapter 8.0, Section 8.2:

8.2 DESCRIPTION OF TRAINING PLAN

In accordance with Permit Condition II.C.3, the unit-specific portion of the *Hanford Facility Dangerous Waste Permit Application* must contain a description of the training plan. The plan is written to comply with WAC 173-303-330 ~~and is found in Appendix 8A~~. Written training plan documentation is maintained outside of the *Hanford Facility Dangerous Waste Permit Application* and the Permit. Therefore, changes made to the written training plan documentation are not subject to the Permit modification process. The training plan will be maintained as part of the operating records of the facility and will be available to regulators upon request.

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. This change adds clarification regarding the referenced Appendix. The referenced appendix (8A) referred to the permit application (DOE/RL-2003-12).

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

Reviewed by Ecology:
S. L. Dahl-Crumpler 9/17/14
Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Integrated Disposal Facility	**Part III, Operating Unit 11**

Description of Modification:
Chapter 11.0, Section 11.0:

11.0 CLOSURE

This chapter discusses preclosure, closure, and post closure activities for the IDF. This closure plan complies with WAC 173-303-610 and represents the baseline for closure.

The IDF has been constructed on 25 hectares of vacant land southwest of the PUREX Plant in the 200 East Area [see the topographic map on file at the Department of Ecology library (3100 Port of Benton Boulevard, Richland, WA 99354)](~~Figure 11.1~~). The landfill is segregated into a RCRA permitted side and a non-RCRA permitted side. The scope of this permit is limited to the western side of the landfill where the RCRA waste will be placed. The waste containers and bulk waste that meet the IDF waste acceptance criteria will be inventoried, and disposed in this lined landfill. Leachate collected from the lined landfill will be transferred to leachate collection tanks located in proximity to the landfill for subsequent treatment.

A more detailed discussion of IDF waste types and the identification of the IDF processes and equipment are provided in Chapters 3.0 and 4.0, and attendant appendices. The IDF only will accept and dispose waste containers and bulk waste that meet the IDF waste acceptance criteria, RCRA and LDR.

The closure process will be the same for partial closure or closure of the entire IDF. The remainder of this chapter describes the performance standards that will be met, and the closure/post closure activities that will be conducted.

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. A topographic map is on file in the Ecology library. Text added to identify location of topographic map. Figure 11.1 (*Typical Hanford Site Landfill Cover Design*) is not being deleted. Incorrectly referenced in this section.

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

Reviewed by Ecology:
S. L. Dahl-Crumpler 9/17/14 Date

Hanford Facility RCRA Permit Modification Notification Form	
Unit: **Integrated Disposal Facility**	Permit Part **Part III, Operating Unit 11**

Description of Modification:
Chapter 11.0, Section 11.1:

11.1 CLOSURE PLAN

Waste containers and bulk waste that meet the IDF waste acceptance criteria will be disposed in the lined landfill that complies with WAC 173-303-665 standards (Chapter 4.0). The IDF will be closed according to current applicable WAC 173-303 regulations, DOE requirements, best management practices, and will be integrated with the overall cleanup activities performed under the Tri-Party Agreement (HFFACO ~~2001~~).

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. This change is administrative in nature as it supports HFFACO "as amended" language in the "List of Attachments."

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

Reviewed by Ecology:
S. L. Dahl-Crumpler 9/17/14
Date

Hanford Facility RCRA Permit Modification Notification Form

Unit:	Permit Part
Integrated Disposal Facility	**Part III, Operating Unit 11**

Description of Modification:
Chapter 11.0, Section 11.2:

11.2 CLOSURE PERFORMANCE STANDARDS

Closure requirements found in ~~Permit Attac~~hment 33, Chapter 11.0 ~~(DOE/RL-91-28) combined with requirements found in~~ WAC 173-303-665(6), incorporated by reference, and detailed here in Chapter 11.0 of the IDF portion of the permit, will make up the closure performance standards for the IDF.

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. This change is administrative in nature as it corrects the formatting (numbering) to reflect the changes to the sections of the permit when it was finalized on 10/13/2010 (correspondence number 11-EMD-0002) and renumbered/modified.

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

Reviewed by Ecology:

S. L. Dahl-Crumpler 9/17/14
Date

Remove and Replace the Following Sections:

Remove Part III Permit Conditions, dated June 30, 2013, and replace with Unit-Specific Conditions dated June 30, 2014.

Remove Chapter 2.0, dated April 9, 2006, and replace with Chapter 2.0 dated June 30, 2014.

Remove Chapter 8.0, dated November 21, 2007, and replace with Chapter 8.0 dated June 30, 2014.

Remove Chapter 11.0, dated December 31, 2008, and replace with Chapter 11.0 dated June 30, 2014.

Ensure inclusion of Chapter 13.0, dated April 9, 2006 (attached) in Permit configuration control files.

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 Chapters and 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 2.0	Topographic Map Description, dated September 30, 2014
Chapter 3.0	Waste Analysis Plan, dated June 30, 2013
Chapter 4.0	Process Information, dated December 31, 2008
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 June 20, 2013
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 September 30, 2014
Chapter 11.0	Closure Requirements, dated September 30, 2014
Chapter 13.0	Other Federal and State Laws, dated April 9, 2006

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 9 (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.i	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.ii	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.i	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.ii	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.iii	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.iv	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.v	The Permittee will inspect for liquids after significant rainfall events.
III.11.B.5.e.vi	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.

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.c.

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 Requirements. 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.i 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.i 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.ii Non-conformance Reporting for Critical Systems

III.11.D.1.d.ii.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.ii.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.ii.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 31. The annual report shall include monitoring results for the 12-month period from January 1 through December 31.

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.11.H.1. Only equipment that can be adequately supported by the operations layer as specified in Permit Condition III.11.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 Chapter 4, Section 4.3.8 of the IDF portion 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, 8.0, Addendum J.1, Addendum J.2, 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.i 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 Analysis Plan (Chapter 3.0 of the IDF portion of this permit).

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.i 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.ii 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.iii 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, 2014, 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.iv	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.i 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.ii 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.iii 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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PART III UNIT-SPECIFIC CONDITIONS FOR FINAL STATUS OPERATIONS

OPERATING UNIT 11

Integrated Disposal Facility

Chapter 2.0 Topographic Map Description

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2.0 TOPOGRAPHIC MAP DESCRIPTION

2.1 Introduction

A topographic map is located in the Department of Ecology library (3100 Port of Benton Boulevard, Richland, WA 99354) reflecting general topographic requirements and the area set aside for IDF. The actual dimensions and waste volume capacity of the RCRA trench that is being permitted are described in the Part A and Appendix 4A of the IDF portion of this permit. The IDF is located on the Hanford Facility, which limits the use of surrounding land to Department of Energy activities. There are no surface waters in the area defined on the topographical map. Chapter 5.0 includes figures that reflect additional requirements for topographic maps. For the point of compliance and proposed groundwater wells see Figure 5-8, and for the aquifer location see Figure 5-4 and Section 5.3 for the identification of the aquifer.

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PART III UNIT-SPECIFIC CONDITIONS FOR FINAL STATUS OPERATIONS

OPERATING UNIT 11

Integrated Disposal Facility

Chapter 8.0 Personnel Training

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8.0 PERSONNEL TRAINING [H]

This chapter discusses personnel training requirements based on WAC 173-303 and the Hanford Facility RCRA Permit (Permit). Permit Condition II.C (Personnel Training), contains training requirements applicable to Hanford Facility personnel and non-Facility personnel. Compliance with these requirements at the IDF is demonstrated by information contained in Permit Attachment 5, and this chapter. This chapter supplements Permit Attachment 5.

8.1 OUTLINE OF INTRODUCTORY AND CONTINUING TRAINING PROGRAMS [H-2]

The introductory and continuing training programs are designed to prepare personnel to manage and maintain the TSD unit in a safe, effective, and environmentally sound manner. In addition to preparing personnel to manage and maintain TSD units under normal conditions, the training programs ensure that personnel are prepared to respond in a prompt and effective manner should abnormal or emergency conditions occur. Emergency response training is consistent with the description of actions contained in Addendum J.1, Contingency Plan, Pre-Active Life.

Introductory training includes general Hanford Facility training and TSD unit-specific training. General Hanford Facility training is described in Permit Attachment 5, and is provided in accordance with Permit Condition II.C.2. TSD unit-specific training is provided to Hanford Facility personnel allowing personnel to work unescorted. Hanford Facility personnel cannot perform a task for which they are not properly trained, except to gain required experience while under the direct supervision of a supervisor or coworker who is properly trained. Hanford Facility personnel assigned the job title of Emergency Coordinator and alternates to this position performing tasks described in WAC 173-303-360 (e.g., Building Emergency Directors) are thoroughly familiar with applicable contingency plan documentation, operations, activities, location, and properties of all waste handled, location of all records, and the unit/building layout.

Continuing training meets the requirements for WAC 173-303-330(1)(b) and includes general Hanford Facility training and TSD unit-specific training. General Hanford Facility training is the same as described for introductory training. TSD unit-specific training provides an annual review of emergency response training and an annual review of training necessary to ensure TSD unit operations are in compliance with WAC 173-303.

8.2 DESCRIPTION OF TRAINING PLAN

In accordance with Permit Condition II.C.3, the unit-specific portion of the *Hanford Facility Dangerous Waste Permit Application* must contain a description of the training plan. The plan is written to comply with WAC 173-303-330. Written training plan documentation is maintained outside of the *Hanford Facility Dangerous Waste Permit Application* and the Permit. Therefore, changes made to the written training plan documentation are not subject to the Permit modification process. The training plan will be maintained as part of the operating records of the facility and will be available to regulators upon request.

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Chapter 11.0 Closure

Figure

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11.0 CLOSURE

This chapter discusses preclosure, closure, and post closure activities for the IDF. This closure plan complies with WAC 173-303-610 and represents the baseline for closure.

The IDF has been constructed on 25 hectares of vacant land southwest of the PUREX Plant in the 200 East Area [see the topographic map on file at the Department of Ecology library (3100 Port of Benton Boulevard, Richland, WA 99354)]. The landfill is segregated into a RCRA permitted side and a non-RCRA permitted side. The scope of this permit is limited to the western side of the landfill where the RCRA waste will be placed. The waste containers and bulk waste that meet the IDF waste acceptance criteria will be inventoried, and disposed in this lined landfill. Leachate collected from the lined landfill will be transferred to leachate collection tanks located in proximity to the landfill for subsequent treatment.

A more detailed discussion of IDF waste types and the identification of the IDF processes and equipment are provided in Chapters 3.0 and 4.0, and attendant appendices. The IDF only will accept and dispose waste containers and bulk waste that meet the IDF waste acceptance criteria, RCRA and LDR.

The closure process will be the same for partial closure or closure of the entire IDF. The remainder of this chapter describes the performance standards that will be met, and the closure/post closure activities that will be conducted.

11.1 CLOSURE PLAN

Waste containers and bulk waste that meet the IDF waste acceptance criteria will be disposed in the lined landfill that complies with WAC 173-303-665 standards (Chapter 4.0). The IDF will be closed according to current applicable WAC 173-303 regulations, DOE requirements, best management practices, and will be integrated with the overall cleanup activities performed under the Tri-Party Agreement (HFFACO).

The disposal landfill cover will be designed and located to comply with WAC 173-303-665(6) and WAC 173-303-610. The specification and/or variation for other cover designs will be provided at the time of closure once a hazard(s) has been defined.

11.2 CLOSURE PERFORMANCE STANDARDS

Closure requirements found in WAC 173-303-665(6), incorporated by reference, and detailed here in Chapter 11.0 of the IDF portion of the permit, will make up the closure performance standards for the IDF.

11.3 PRECLOSURE ACTIVITIES

Preclosure activities could include, at a minimum, placing interim or final covers over the filled portions of the landfill as the landfill is expanded to accept more waste. Placement of covers over the filled portions might be deferred until closure of all the IDF. Once a decision is made to construct the final cover over the landfill, a closure cover design will be used that satisfies the dangerous waste disposal requirements defined in WAC 173-303.

The selection of a final cover design has not been identified. Figure 11-1 shows an example of a typical Hanford Site landfill cover design. Design(s) will include features to satisfy the minimum requirements found in WAC 173-303-665(6).

11.4 MAXIMUM EXTENT OF OPERATION

The maximum process design capacity of the IDF conservatively is calculated to be 100 hectare-meters, which is 1,000,000 cubic meters (Chapter 1.0, Part A, Form, Section III). The IDF landfill will be segregated into a RCRA permitted side of 50 hectare-meters and a non-RCRA permitted side of 50 hectare-meters.

11.5 DECONTAMINATING EQUIPMENT AND STRUCTURES

All ancillary equipment and its secondary containment, and instrumentation (e.g., level-indicating devices, leak detection devices, pumps, piping) meet the definition of "debris" as defined in WAC 173-303-040. Items in direct contact with mixed waste are assumed to meet the definition of "hazardous debris" as defined in WAC 173-303-040.

Currently, three options are available for treating hazardous debris. The first option is to treat the debris using one of the three debris treatment technologies-extraction, destruction, or immobilization-as described in 40 CFR 268.45. If the hazardous debris is treated using approved extraction or destruction technologies, the debris is no longer required to be managed as a dangerous waste as long as the debris does not exhibit a characteristic of a dangerous waste. If hazardous debris contaminated with a listed waste is treated using an immobilization technology, it remains a listed waste, even after the LDR treatment standards are met unless Ecology makes a case-by-case determination that the debris "no longer contains" a mixed waste. In effect, by making this "contained-in" determination on a case-by-case basis, Ecology will be setting clean closure standards in accordance with the closure performance standards of WAC 173-303-610(2)(a)(ii).

The second option is to treat the hazardous debris to meet the constituent-specific LDR treatment standard for the waste or waste-specific constituents contaminating the debris; however, such debris, even after treatment, may be considered a dangerous waste under the dangerous waste regulations and may require management at a facility permitted to manage dangerous waste.

The third option involves obtaining a "contained-in determination" for the hazardous debris, thereby rendering the waste "non-hazardous" for those waste-specific-listed constituents that fall below MTCA method B risk-based health limits. Moreover, it must be proven that the debris does not designate as a characteristic waste under WAC-173-303.

11.5.1 CONTAMINATED SOIL

Contaminated soil could be generated as a result of spill cleanup. Since the majority of IDF operations will be preformed within secondary containment (see Chapters 4.0 and 6.0) the potential for spilling dangerous waste into the surrounding soil is low. Contaminated soil generated as a result of a dangerous waste spill will be managed pursuant to WAC-173-303-200.

Once the soil is designated, appropriate treatment and disposal or storage options will be determined and implemented.

A contained-in determination could also be sought for contaminated soil generated as a result of a spill. For contaminated media the contained-in policy requires that a statistically based sampling plan be used for obtaining the data to support a contained-in demonstration. The contained-in policy does not require that the waste be analytically nondetectable for it to be considered nondangerous. However, the analytical results must prove that the listed constituents in the soil are below health-based limits as provided in WAC 173-303-610(2)(b)(i) and that the soil does not exhibit any dangerous waste characteristics (i.e., soil does not designate for D codes). If approved by Ecology, this could allow waste that falls below specific health-based levels to be disposed of without requiring treatment

11.6 CLOSURE OF LANDFILL UNITS

Closure of the IDF will be consistent with the closure requirements specified in WAC-173-303-665(6) and WAC 173-303-610. The cover design(s) will satisfy the requirements of WAC 173-303-665(6).

11.6.1 Cover Design

The cover could consist of several layers constructed on top of a native soil base. A generalized cross-section of an example cover is shown on Figure 11-1. It is assumed that before construction of the final cover, the waste form would be stabilized appropriately.

11.6.1.1 Grade Layer

The surface of the landfill would be graded and/or shaped, if necessary, to match the slope of the desired low-permeability layer. Additional soil would be placed over the landfill to achieve the required cover grade. This grade layer could taper from zero thickness near the edge of the cover boundary to perhaps several meters at the center of the cover; the thickness would depend on the lateral dimensions of the particular cover and the grade of the cover.

11.6.1.2 Low-Permeability Layer

The selection of an appropriate material for this layer would be based on the hazard that is to be isolated. The low-permeability layer will be the primary barrier in preventing soil and/or water from migrating into the waste zone and meet WAC 173-303-655 (6) (v) "Have a permeability less than or equal to the permeability of any bottom liner system or natural sub soils present".

11.6.1.3 Drainage Layer

The drainage layer would conduct any water that percolates through the overlying layers laterally to the drainage ditch. Thus, the drainage layer would prevent hydraulic pressure from building up directly on the low-permeability liner, and thereby eliminate one set of forces that would drive moisture through the primary moisture control barrier.

11.6.1.4 Plant, Animal, and Human Intrusion Layer (optional)

The performance objectives for the permanent isolation surface barrier are summarized as follows:

- Function in a semiarid to sub-humid environment
- Limit the recharge of water through the waste to near zero amounts [0.05 centimeter per year ($1.6x10^{-9}$ centimeters per second)]
- Be maintenance free
- Minimize the likelihood of plant, animal, and human intrusion
- Limit the exhalation of noxious gases
- Minimize erosion-related problems
- Meet or exceed WAC 173-303-665(6) cover performance requirements
- Isolate waste for 1,000 years.

To satisfy the intrusion performance objective, an optional layer would be included in the design of barriers that require the additional human and/or biointrusion protection to reduce either the environmental or human health risk.

11.6.1.5 Graded Filter Layer

A graded filter consisting of crushed rock overlaid by sand would be placed on the plant, animal, and human intrusion layer if incorporated into the design, or directly over the drainage layer. The graded filter would serve to separate the surface soil layer from the drainage layer. A geotextile would be placed on the top of the graded filter to decrease the potential for fine material to enter the filter and drainage zone. The geotextile would be permeable, allowing drainage, and would not support a standing head of water.

11.6.1.6 Surface Soil Layer

The two most important factors in engineering the surface soil thickness would be the assignment of the water retention characteristics for soil and climate information. Surface soil would be placed over the geotextile to intercept, store, recycle water, and prevent damage to the underlying structure from natural and synthetic processes.

11.6.1.7 Vegetative Cover

The vegetative cover would perform three functions. First, the plants would return water stored in the surface soil back to the atmosphere, significantly decreasing net infiltration and reducing the amount of moisture available to penetrate the cover. Second, the vegetation would stabilize the surface soil component of the cover against wind and water erosion. Finally, the vegetative cover would restore the appearance of the land to a more natural condition and appearance.

A mixture of seeds would be used to establish vegetation. The seed types would be selected based on resistance to drought, rooting density, and ability to extract water.

11.6.2 Wind Erosion

The principal hazard associated with wind erosion is the thinning of the cover surface soil layer. This in turn potentially could lead to breaching of the moisture barriers, gradually allowing larger quantities of water to reach the waste. The engineering approaches to mitigating wind erosion of the cover would be (1) designing the surface soil layer with an appropriate total thickness to compensate for future soil loss that might result from wind erosion, (2) establishing a vegetative cover on the surface to reduce wind erosion, and (3) including an appropriate coarse material (admix) in the upper layer of the surface soil to form an armor layer.

11.6.3 Water Erosion

The potential hazard associated with water erosion is the same as that for wind erosion, namely the loss of soil from the top or surface layer.

Several of the following engineering approaches could be adopted to minimize the potential for water erosion:

- Limiting the surface slopes
- Providing run-on control with the sideslope drainage ditches

- Compacting the surface soil in a way that promotes significant infiltration rather than excessive run-off
- Properly designing the sideslopes to prevent gullying
- Establishing a vegetative cover to slow surface run-off
- Incorporating coarse material (pea gravel admix) in the upper portion of the surface soil layer to help form an erosion-resistant armor
- Limiting flow path lengths through the use of vegetation and admix.

The cover design would be evaluated for potential erosion damage from overall soil erodibility, sheet flow, and gullying.

11.6.4 Deep-Rooted Plants

The following design features could minimize the potential for problems with deep-rooted plants.

- The surface soil (top two layers) would retain most of the precipitation, because the underlying drainage layer would have significantly higher permeability and much less water retention capacity. Therefore, it is expected that vegetation preferentially would occupy the surface soil layer and not have an affinity for growing into the drier underlying layers.
- The thickness of the surface soils would be sized to promote the development of semiarid deep-rooted perennial grasses and to discourage the development of deep-rooting intrusive species.

11.7 SCHEDULE FOR CLOSURE

As stated previously, closure of the IDF will be a complex process. At the time of closure, this closure plan will be updated to reflect the current closure plan schedule per WAC 173-303-830, Appendix I. In addition, when a closure date is established, a revised closure plan and closure schedule will be submitted to Ecology that contains detailed information regarding specific activities and implementation timeframes.

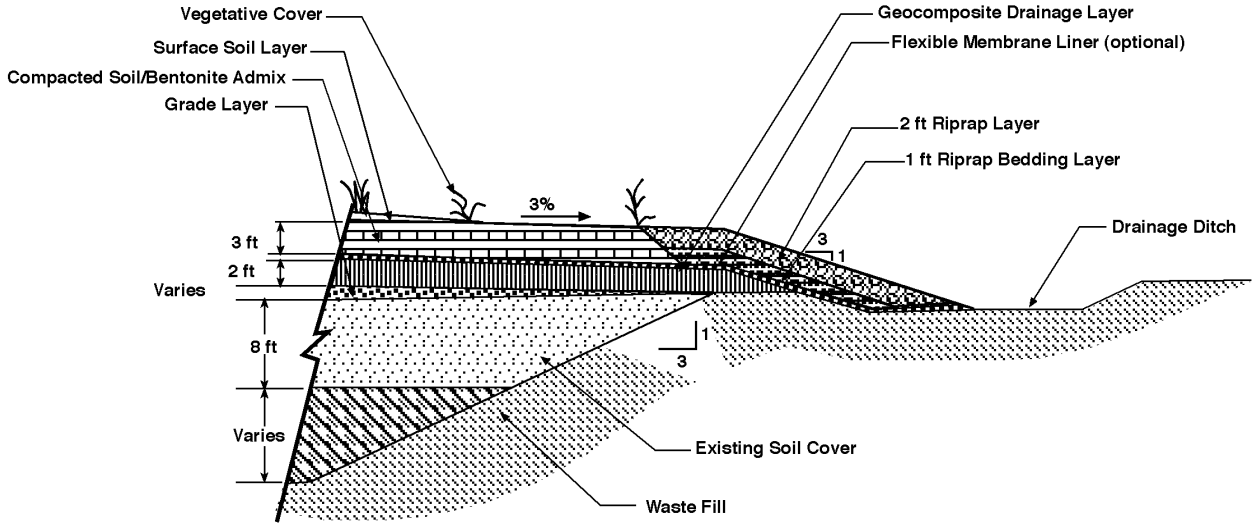
11.8 EXTENSION FOR CLOSURE

An extension for closure request is anticipated to complete the closure/post closure process of the IDF.

11.9 POSTCLOSURE PLAN

Because of the long active life of the IDF, a comprehensive post closure plan will be developed when closure becomes imminent or when 200 Areas cleanup activities prescribed by the Tri-Party Agreement require integration.

Figure 11.1. Typical Hanford Site Landfill Cover Design



Notes:

1. Drawing not to scale.
2. Cover shown for unlined trench.
   Similar configuration for lined trench.

To convert feet (ft) to meters, multiply by 0.3048.

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