UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

OCT 15 1999

0051879

Reply To
Attn Of: WCM-127

OCT 1999
RECEIVED
EDMC

Debra A. Isom
Lockheed Martin Services Inc.
2440 Stevens Center
Mail Stop H6-08
Richland, WA 99352

Re: Permit Modification Information for Administrative Records and Information Repositories
EPA/Ecology ID No. WA7 8900 8967

Dear Ms. Isom:

Please find enclosed nine (9) copies of materials for proposed permit modifications to the EPA component of the Hanford Federal Facility Resource Conservation and Recovery Act (RCRA) Permit for distribution to administrative records and information repositories. As indicated in the materials, a public comment period will begin for this action on October 18 and run through December 20, 1999. A public meeting is scheduled for November 9, 1999. The material being provided includes an administrative record index, the EPA public notice fact sheet, and supporting administrative record materials. You may wish to note that I have not included physical copies of either Federal Registers or the Ecology portion of the Hanford permit referenced in the administrative record index. These materials are either readily available through libraries or the Internet, or already available through the information repositories.

Should you have any questions or comments, please feel free to contact me at (206) 553-2804 or at bartus.dave@epa.gov.

Sincerely,

Dave Bartus

Dave Bartus, Senior Policy Analyst
Office of Waste and Chemicals Management

Enclosures (9)

cc: Jack Boller, WOO (w/o enclosures)
Nina Kocourek, EPA (w/o enclosures)
Laura Rudd, Ecology (fact sheet, statement of basis and AR index only)

Printed on Recycled Paper

Administrative Record Index
EPA Region 10
October, 1999 Permit Modifications
Hanford Federal Facility
WA7 89000 8967

Corrective Action

1. Federal Register, 59 FR 55322, November 4, 1994. Final Authorization for Washington State Department of Ecology.

AH'd 2. Ecology permit conditions and FOCUS sheet, October, 1999.

AH'd 3. EPA Fact Sheet/Statement of Basis, October, 1999.

Toxicity Characteristic Wastes

1. Federal Register, 61 FR 7736, February 29, 1996. Washington: Final Authorization of State Hazardous Waste Management Program: Revisions.

50749 ~~5182~~ 2. Washington Department of Ecology Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage and Disposal of Dangerous Waste, dated May 18, 1999.

3. Ecology permit conditions and FOCUS sheet, October, 1999.

4. EPA Fact Sheet/Statement of Basis, October, 1999.

Air Emissions

1. Federal Register, 62 FR 64636, December 8, 1997. Hazardous Waste Treatment, Storage and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers; Clarification and Technical Amendment.

2. Federal Register, 61 FR 59932, November 25, 1996. Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers; Final Rule.

3. Federal Register, 59 FR 62896, December 6, 1994. Hazardous Waste Treatment, Storage and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers; Final Rule.

4. Washington Department of Ecology Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage and Disposal of Dangerous Waste, dated May 18, 1999.

5. Washington Department of Ecology FOCUS Sheet, October, 1999.

xref 47244

6. Washington Departmet of Ecology Dangerous Waste Permit, Attachment 28, Chapters 3 and 4.

DOE/RL 90.24

7. EPA Fact Sheet/Statement of Basis, October, 1999.

Adds to Definitions Section that are necessary for corrective action – will be added in alphabetical order.

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

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

c. For the purposes of corrective action under Condition II.Y, the term **"facility"** means all contiguous property under the control of the Permittee and all property within the meaning of "site" at RCW 70.105D.020(4) as set forth in Attachment 2 to this Permit.

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

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

II.Y CORRECTIVE ACTION

In accordance with WAC 173-303-646 and WAC 173-303-815(2)(b)(ii), the Permittee must conduct corrective action, as necessary to protect human health and the environment, for releases of dangerous waste and dangerous constituents from solid waste management units and areas of concern at the facility, including releases that have migrated beyond the facility boundary. The Permittee may be required to implement measures within the facility to address releases which have migrated beyond the facility boundary.

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

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

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

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

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

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

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

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

II.Y.1.g WAC 173-340-700 through -760 Cleanup Standards.

II.Y.2 Acceptance of Work Under Other Authorities or Programs

Notwithstanding Condition II.Y.1., when agreed to by Ecology, work under other cleanup authorities or programs may be used to satisfy corrective action requirements, provided it protects human health and the environment. Ecology will evaluate work under other cleanup authorities or programs on a case-by-case basis and will incorporate its decisions about the extent to which such work satisfies corrective action requirements into this Permit using the permit modification process of WAC 173-303-830. Ecology has already made decisions about some on-going work undertaken under other authorities and programs and accepts the work as satisfying corrective action requirements to the extent provided for in Conditions II.Y.2.i and II.Y.2.ii.

II.Y.2.i For units identified in Appendix C of the FFAOC, as amended, as CERCLA Past Practice Units, Ecology accepts work under the HFFACO, as amended, and under CERCLA program as satisfying corrective action requirements to the extent provided for in Conditions II.Y.3.a.i and subject to the reservations and requirements of II.Y.3.a.ii through II.Y.3.a.v and II.Y.3.d.

II.Y.2.ii For units identified in Appendix C of the HFFACO, as amended, as RCRA Past Practice Units, Ecology accepts work under the HFFACO, as amended, as satisfying corrective action requirements to the extent provided for in Condition II.Y.3.b.i and subject to the reservations and requirements of II.Y.3.b.ii through II.Y.3.b.iv and II.Y.3.d.

II.Y.3 Integration with the HFFACO

Corrective action is necessary to protect human health or the environment for all units identified in Appendix B and Appendix C of the HFFACO.

II.Y.3.a CERCLA Past Practice Units

II.Y.3.a.i For any unit identified in Appendix C of the HFFACO as a CERCLA Past Practice (CPP) unit, the Permittee must comply with the requirements and schedules related to investigation and cleanup of the of CPP unit(s) developed and approved under the HFFACO, as amended. The requirements and schedules related to investigation and cleanup of CPP units currently in place under the HFFACO, as amended, and in the future developed and approved under the FFAOC, as amended, are incorporated into this Permit by this reference and apply under this Permit as if they were fully set forth herein.

II.Y.3.a.ii If the Permittee is not in compliance with requirements of the HFFACO, as amended, that relate to investigation or cleanup of CPP unit(s), Ecology may take action to independently enforce the requirements as corrective action requirements under this Permit. Consistent with Article VII, paragraph 29, and Article XLVI, paragraph 136, of the HFFACO, as amended, and other applicable provisions of the HFFACO, as amended, such enforcement actions are not subject to dispute resolution under the HFFACO.

II.Y.3.a.iii In the case of interim RODs, a final decision about satisfaction of corrective action requirements will be made in the context of issuance of a final ROD.

II.Y.3.a.iv If EPA and Ecology, after exhausting the dispute resolution process under Section XXVI of the HFFACO, cannot agree on requirements related to investigation or cleanup of CPP unit(s), the Permittee must conduct corrective action in accordance with Condition II.Y.1. If Ecology and EPA cannot agree on requirements related to investigation or cleanup of CPP units(s), Ecology will notify the Permittee, in writing, of the disagreement. Within thirty days of receipt of Ecology's notice, the Permittee must submit for Ecology review and approval a plan to conduct corrective action in accordance with Condition II.Y.1 for the subject unit(s). The Permittee's plan may include a request that Ecology evaluate work under another authority or program as provided for by Condition II.Y.2. Approved corrective action plans under this Condition will be incorporated into this Permit in accordance with the permit modification procedures of WAC 173-303-830.

II.Y.3.a.v The Permittee must maintain information on corrective action for CERCLA Past Practice Units covered by the HFFACO in accordance with Sections 9.0 and 10.0 of the HFFACO Action Plan. In addition, the Permittee must maintain all reports and other information developed in whole or in part to implement the requirements of Condition II.Y.3.a, including reports of investigations and all raw data, in the Facility Operating Record in accordance with Condition II.I.

II.Y.3.b RCRA Past Practice Units

II.Y.3.b.i For any unit identified in Appendix C of the HFFACO, as amended, as a RCRA Past Practice (RPP) unit, until a permit modification is complete under II.Y.3.b.iv, the Permittee must comply with the requirements and schedules related to investigation and cleanup of RPP units developed and approved under the HFFACO, as amended. The requirements and schedules related to investigation and cleanup of RPP units currently in place under the HFFACO, as amended, and in the future developed and approved under the FFAOC, as amended, are incorporated into this Permit by this reference and apply under this Permit as if they were fully set forth herein.

II.Y.3.b.ii Until a permit modification is complete under II.Y.3.b.iv, if the Permittee is not in compliance with requirements and schedules related to investigation and cleanup of RPP units developed and approved under the HFFACO, as amended, Ecology may take action to independently enforce the requirements as corrective action requirements under this Permit. Consistent with Article VII, paragraph 29, and Article XLVI, paragraph 136, of the HFFACO, as amended, and other applicable provisions of the HFFACO, such enforcement actions are not subject to dispute resolution under the HFFACO.

II.Y.3.b.iii When the Permittee submits a corrective measures study for an individual RPP unit or a group of RPP units, the Permittee must, at the same time, recommend a remedy for the unit(s) and request a modification to this Permit to incorporate the recommended remedy. The remedy recommendation must contain all the elements of a draft cleanup action plan under WAC 173-340-360(10). The permit modification request must follow the procedures of WAC 173-303-830(3)(c), class 3 modifications.

II.Y.3.b.iv After considering the Permittee's corrective measures study and remedy recommendation, and public comments received during the public comment

period required by WAC 173-303-830(3)(c), Ecology will make a final determination as to what is necessary to satisfy corrective action requirements and will publish that decision as a draft permit under WAC 173-303-840(10).

II.Y.3.b.v The Permittee must maintain information on corrective action for RPP units covered by the HFFACO, as amended, in accordance with Sections 9.0 and 10.0 of the HFFACO Action Plan. In addition, the Permittee must maintain all reports and other information developed in whole or in part to implement the requirements of Condition II.Y.3.b, including reports of investigations and all raw data, in the Facility Operating Record in accordance with Condition II.I.

II.Y.3.c Dangerous Waste Treatment, Storage and Disposal Units

II.Y.3.c.i For each TSD unit or group of units, when the Permittee submits a certification of closure or a certification of completion of post-closure care, the Permittee must, at the same time, request to modify this Permit to either:

II.Y.3.c.i.A reflect that the work completed under closure and / or post-closure satisfies the requirement for corrective action; or

II.Y.3.c.i.B if the work completed under closure and / or post-closure care does not satisfy corrective action requirements, to incorporate unit-specific corrective action requirements.

II.Y.3.c.ii On completion of the public comment period initiated by the Permittee's request under II.Y.3.c.i, Ecology will make a final decision as to whether the work completed under closure and / or post-closure care satisfies corrective action, specify any unit-specific corrective action requirements, and incorporate the decision into this Permit in accordance with the permit modification process of WAC 173-303-830.

II.Y.3.d Reservation

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

II.Y.3.d.i Any discharge or release of dangerous waste or dangerous constituents which is not addressed by the HFFACO, as amended;

II.Y.3.d.ii Discovery of new information regarding dangerous constituents or dangerous waste management, including but not limited to, information about releases of dangerous waste or dangerous constituents which are not addressed under the HFFACO, as amended; or,

II.Y.3.d.iii A determination that action beyond the terms of the HFFACO, as amended, is necessary to abate an imminent and substantial endangerment to the public health or welfare or to the environment.

III.Y.4 Releases of Dangerous Waste or Dangerous Constituents Not Covered By the HFFACO

II.Y.4.a US Ecology

II.Y.4.a.i The following solid waste management units are not covered by the HFFACO, as amended, and require investigation to determine whether releases of dangerous

waste or dangerous constituents that warrant corrective action have occurred or are occurring.

II.Y.4.a.i.A US Ecology, Inc., SWMU 1: Chemical Trench.

II.Y.4.a.i.B US Ecology, Inc., SWMU 2-13: Low-level radioactive waste trenches 1 through 11A.

II.Y.4.a.i.C US Ecology, Inc., SWMU 17: Underground resin tank.

II.Y.4.a.ii Selected solid waste management units identified in Condition II.Y.4.a.i. are currently being investigated by US Ecology in accordance with the *Comprehensive Investigation US Ecology – Hanford Operations Workplan.* US Ecology will submit to Ecology a written report on the findings of the investigation. The report will help Ecology determine whether, based on site-specific conditions, additional work is needed to investigate or clean up the solid waste management units identified in Condition II.Y.4.a.i.

II.Y.4.a.iii Following receipt of the written report, or within one year of the effective date of this Permit Condition, whichever is earlier, Ecology will make a tentative decision as to whether additional investigation or cleanup is necessary to protect human health or the environment for the solid waste management units identified in Condition II.Y.4.a.i. and publish that decision as a draft permit in accordance with WAC 173-303-840(10). Following the associated public comment period, and consideration of any public comments received during the public comment period, Ecology will publish as final permit conditions under WAC 173-303-840(8) either:

II.Y.4.a.iii.A a decision that corrective action is not necessary to protect human health or the environment;

II.Y.4.a.iii.B an extension to the schedule established under IIIY.4.a.iii; or,

II.Y.4.a.iii.C a decision that corrective action is necessary to protect human health or the environment.

II.Y.4.a.iv If Ecology decides under Condition II.Y.4.a.iii that corrective action is necessary to protect human health or the environment, within one hundred and eighty (180) days of the effective date of this decision, the Permittee must submit, for Ecology review and approval, a plan to conduct corrective action in accordance with Condition II.Y.1. Approved corrective action plans under this Condition will be incorporated into this Permit in accordance with the permit modification procedures of WAC 173-303-830.

II.Y.4.b **Newly Identified Solid Waste Management Units and Newly Identified Releases of Dangerous Waste or Dangerous Constituents**

The Permittee must notify Ecology of all newly-identified solid waste management units and all newly-identified significant releases of dangerous wastes or dangerous constituents at the Facility. For purposes of this Condition, a "newly-identified" solid waste management unit and a "newly-identified" significant release of dangerous waste or dangerous constituents is a unit or significant release not identified in the HFFACO, as amended, on the effective date of this Permit and not identified by Condition II.Y.4.a. Notification to Ecology must be in writing and must occur no more than thirty calendar days after the

date of discovery. At a minimum, notification must include the information listed in WAC 173-303-806(4)(a)(xxiii) and WAC 173-303-806(4)(a)(xxiv).

II.Y.5 Environmental Indicators

Within one hundred and eighty (180) days after the effective date of this Permit Condition, the Permittee must submit to Ecology for review and approval, completed "documentation of environmental indicator determination" forms in accordance with the February 5, 1999 environmental indicator guidance issued by the U.S. Environmental Protection Agency and, as requested by Ecology, any additional information or analysis necessary to support environmental indicator determinations. Following review of the Permittee's submittal, Ecology will make the final environmental indicator determination for the Facility and will notify the Permittee, in writing, of the determination and record the determination in the RCRA Information System (RCRIS) Database. Following Ecology's environmental indicator determination, the Permittee must notify Ecology, in writing, any time he / she believes the environmental indicator determination for the facility has changed (e.g., changed from an IN, insufficient information, to a YES, environmental indicator achieved) and must update the "documentation of environmental indicator determination" forms to reflect new information and cleanup progress at least once every two years.

51850

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Focus

Transferring Corrective Action Conditions from Federal to State Portion of Hanford Facility-Wide RCRA Permit

Background

The Washington State Department of Ecology (Ecology) issued a Dangerous Waste RCRA Permit (permit) for the Hanford Facility in August 1994. The permit was issued under provisions of the Federal Resource Conservation and Recovery Act (RCRA) and the Washington State Dangerous Waste Regulations. The permit outlines standard and general facility conditions, as well as unit-specific conditions for the operation, closure, and post-closure of individual mixed or dangerous waste treatment, storage, and/or disposal (TSD) units at Hanford.

Among other things, owners and operators of dangerous waste treatment, storage or disposal facilities are required to clean up releases at their facilities, including releases that have migrated beyond the facility boundary, as necessary to protect human health and the environment. At the Federal level, these cleanup requirements are commonly referred to as "corrective action" and generally flow from Federal statutory requirements at RCRA Sections 3004(u), 3004(v) and 3005(c)(3). Like most other requirements of the Federal Resource Conservation and Recovery Act, responsibility for overseeing implementation of the corrective action requirements is intended to be passed from the U.S. Environmental Protection Agency (EPA) to authorized states.

When issued in 1994, the permit contained two portions. Ecology issued the portion setting requirements for operating the facility and most standards for treating, storing and disposing dangerous waste. EPA Region 10 issued the portion setting requirements for corrective action under the Hazardous and Solid Waste Amendments (HSWA) to RCRA and for other HSWA requirements for which Ecology was not yet authorized. Since the permit was issued in 1994, Ecology has become authorized for corrective action requirements. Today's proposed modification would transfer corrective action conditions from the Federal to the State portion of the permit.

Concurrent with today's proposed modification, EPA will be processing a separate permit modification to the Federal portion of the permit. Comments on the Federal permit modification may be made as indicated in the separate EPA permit modification fact sheet and public notice. Although Ecology and EPA are administratively processing separate permit modifications, the agencies are coordinating the two actions so that both modifications will take effect on the same day, subject to public notice and comment on both proposals. In that way, there will

Ecology is an equal-opportunity employer

Focus No. 99-1454-NW

printed on recycled paper

be no lapse in corrective action requirements at Hanford, and the permittees will not be subject to two sets of corrective action requirements (i.e., one set in the Federal portion of the permit and another in the State's).

Proposed Modifications to the Hanford Facility RCRA Permit

The corrective action conditions Ecology is proposing today are consistent with the corrective action conditions that EPA issued in 1994. The permittee is required to conduct corrective action (e.g., investigation and cleanup) for all releases at and from the facility, including releases from solid waste management units. Corrective action is required regardless of when releases occur and regardless of whether a unit was intended for management of solid or dangerous waste.

Like the corrective action conditions issued by EPA in 1994, the conditions proposed today are structured around continued coordination with and reliance on the investigation and cleanup requirements established under the Tri-Party Agreement. This means, generally, decisions about investigation and cleanup made under the Tri-Party Agreement will automatically serve as corrective action decisions. The major exception to this rule is in situations where a unit is a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Past Practice Operable Unit, and EPA and Ecology cannot agree on requirements under the Tri-Party Agreement. In these types of situations, after exhausting the Tri-Party Agreement Ecology/EPA dispute resolution process, Ecology may require the permittees to take independent action, under the permit, to fulfil corrective action obligations. Other limitations on the use of the Tri-Party Agreement to satisfy corrective action requirements and reservations of Ecology's enforcement abilities are set forth in the proposed conditions.

In situations where a unit is a RCRA lead, the conditions proposed today specify that, at remedy selection, remedies will be incorporated into the permit using the permit modification procedures. This is the approach that was contemplated by the Tri-Party Agreement (see Section 7.4.3 of the TPA Action Plan) and was used by EPA in 1994.

Since 1994, two RCRA Past Practice Operable Units, 100-NR-1 and 100-NR-2, have been included in the federally issued portion of the permit. When the corrective action conditions are transferred from the Federal to the State portion of the permit, the requirements for those two units will also transfer. No changes are being proposed to the unit-specific conditions for 100-NR-1 and 100-NR-2, so they are not being re-opened for public comment.

EPA has developed two "environmental indicators" to measure progress on cleanup at high priority facilities that are subject to corrective action. The two indicators measure protection of human health, by assessing whether unacceptable exposures to humans are under control, and protection of ground water, by assessing whether migration of contaminated ground water is under control. Hanford is a high priority facility, so today's proposed permit conditions require the permittee to submit information to Ecology on the facility's status relative to the environmental indicators. This information is necessary for Ecology to accurately report the status of the facility.

Finally, the conditions proposed today emphasize that Ecology may take action to independently enforce investigation and cleanup requirements established under the Tri-Party Agreement, using the permit. To the extent the TPA requirements are also corrective action requirements under the permit, they are enforceable under the permit, independent of the Tri-Party Agreement. So, if the permittee is out of compliance with the Tri-Party Agreement, generally, Ecology will be able to take action under the permit to require compliance. This is not meant to signal in any way that Ecology is moving away from the Tri-Party Agreement; it is meant to preserve Ecology's existing enforcement capabilities.

How can you get involved?

A 60-day public comment period for the 1999 proposed modifications begins on October 18, 1999, and ends on December 20, 1999. A public meeting will be held on November 9, 1999, at 7 p.m. at Ecology's Nuclear Waste Program Office, 1315 W. 4th Avenue, in Kennewick, Wash. All comments received during the public comment period will be considered and responded to before final decisions are made on the proposed conditions.

Copies of the Dangerous Waste RCRA Permit for the Hanford Facility and the proposed 1999 modifications are available for review at the Hanford Public Information Repositories listed below. For additional information, call Hanford Cleanup toll-free at 800-321-2008.

HANFORD PUBLIC INFORMATION REPOSTIORES

Portland
Portland State University
Branford Price Millar Library
934 SW Harrison and Park
Portland, Or 97207
(503) 725-3690
Attn: Michael Bowman/Jocelyn Kramer
E-mail: bowman@lib.pdx.edu

Richland
Public Reading Room
2770 University Drive
Consolidated Information Center, Rm 101L
Richland, WA 99352
(509) 372-7443
Attn: Terri Traub
E-mail: reading_room@pnl.gov

Spokane
Gonzaga University
Foley Center
East 502 Boone
Spokane, WA 99258
(509) 323-3839
Attn: Connie Scarppelli
E-mail: carter@its.gonzaga.edu

Seattle
University of Washington Suzallo Library
Government Publication Division
Seattle, WA 98195
(206) 543-4664
Attn: Eleanor Chase
E-mail: echase@u.washington.edu
Public Service: (206) 543-1937

If you have special accommodation needs, please contact Lori Guertin, Department of Ecology, Nuclear Waste Program, at (509) 736-3007 (voice) or (360) 407-6006 (TDD).

Send written comments to:

Laura Ruud
Department of Ecology
1315 W. 4th Avenue
Kennewick, WA 99336-6018
(509) 736-5715
e-mail: lruu461@ecy.wa.gov

Environmental Fact Sheet

EPA U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 10 October 1999

Hazardous Waste Permit Modifications

United States Department of Energy- Hanford Federal Facility
Richland Operations Office
EPA/Ecology ID No. WA7 8900 8967

You are invited to comment on the U.S. Environmental Protection Agency's (EPA) proposed modification for the Department of Energy's Hanford Federal Facility Resource Conservation and Recovery Act (RCRA) permit.

EPA is proposing changes to the federal hazardous waste management permit issued to the U.S. Department of Energy for operations at the Hanford Federal Facility. The Washington State Department of Ecology (Ecology) is proposing certain corresponding changes to the state portion of the Hanford Federal Facility permit in a separate action. **EPA and Ecology invite you to comment on these permit modifications.**

EPA's proposal is detailed in a separate ***Statement of Basis.*** In general, EPA is proposing three substantive changes to the federal permit:

1) EPA proposes, in coordination with the Washington State Department of Ecology (Ecology), to transfer administrative responsibility for RCRA corrective action from EPA to Ecology by removing the existing EPA corrective action permit conditions. Ecology is adding corresponding state permit conditions in a separate permit action;

2) EPA proposes to transfer administrative responsibility of wastes regulated under the federal Toxicity Characteristic rule from EPA to Ecology authority; and

3) EPA proposes to add unit-specific organic air emission control requirements.

Public Comment Opportunity

You are encouraged to comment on this proposed RCRA permit modification. **The deadline for comments is December 20, 1999.** Comments should be submitted in writing no later than December 20 to:

Dave Bartus, U.S. EPA Region 10
1200 6th Ave., MS WCM-127
Seattle, WA 98101
E-mail: *bartus.dave@epa.gov*

Comments should include all reasonably available references, factual grounds and supporting material. Comments concerning the Ecology modifications should be submitted directly to the Washington State Department of Ecology as appropriate.

Public Hearing

Wednesday, November 9, 1999
Washington State Department of Ecology
1315 W. 4th Ave., Kennewick, Washington
7:00 pm

For further information regarding the hearing call Ecology at (800) 321-2008. For special accommodation needs, please contact Lori Guertin, at (509) 736-3007 (voice) or (360) 407-6006 (TDD).

Availability of Documents for Public Review

The administrative record, containing the ***Statement of Basis***, and other documents supporting this modification, including all data submitted by the Department of Energy, may be reviewed between the hours of 8:30 am and 4:30 pm, Monday through Friday at the following locations:

U.S. EPA Region 10
Office of Waste & and Chemicals Mgmt.
Mailstop WCM-127
1200 6th Avenue
Seattle, Washington 98101

Contact: Dave Bartus
(800) 424-4372 ext. 2804
E-mail: ***bartus.dave@epa.gov***

Lockheed Martin Services Incorporated
2440 Stevens Center
Mail Stop H6-08
Richland, WA 99352
Contact: Debra A. Isom

Contact: Debra A. Isom,
(509) 376-2530
E-Mail: ***Debra_A_Debbi_Isom@rl.gov***

Any person desiring further information, copies, or portions of the administrative record, or an appointment to review the record should contact either of the individuals listed above.

HANFORD PUBLIC INFORMATION REPOSITORIES

In addition, copies the fact sheet and the Statement of Basis for this proposed modification, the HSWA permit, and an index of the HSWA permit administrative record are available for public review at the following public information repositories:

Portland
Portland State University
Branford Price Millar Library
934 SW Harrison and Park
Portland, Oregon 97207
(503) 725-3690
Attn: Michael Bowman/Jocelyn Kramer
Email: *bowman@lib.pdx.edu*

Spokane
Gonzaga University
Foley Center
East 502 Boone
Spokane, WA 99258
(509) 323-3839
Attn: Connie Scarppelli
Email: *carter@its.gonzaga.edu*

Richland
Public Reading Room
2770 University Drive
Consolidated Information Ctr, Rm. 101L
Richland, Washington 99352
(509) 372-7443
Attention: Terri Traub
Email: *reading_room@pnl.gov*

Seattle
University of Washington Suzallo Library
Government Publication Division
Seattle, Washington 98195
(206) 543-4664
Attention: Eleanor Chase
Public Service: (206) 543-1937
Email: *echase@u.washington.edu*

Internet Access
This fact sheet and the ***Statement of Basis*** is also available on the Internet at the following address: **http://www.epa.gov/r10earth** (once there, click on "Waste and Chemicals" and then "What's New')

To ensure effective communications with everyone, additional services can be made available to persons with disabilities by contacting EPA at (800) 424-4372.

Statement of Basis

EPA U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 10 October 1999

Draft Hazardous Waste Permit Modifications

United States Department of Energy- Hanford Federal Facility
Richland Operations Office
EPA/Ecology ID No. WA7 8900 8967

This Statement of Basis, developed in consultation with the Washington State Department of Ecology (Ecology), explains the permit modification that EPA proposes to issue to the Department of Energy. EPA proposes to transfer administrative responsibility for RCRA corrective action through a coordinated action by which Ecology will add state corrective action permit conditions, and EPA will remove existing federal conditions. The EPA and Ecology components of this transfer are separate permit modification actions.

This document also describes proposed changes to transfer the adminstrative responsibility for managing wastes regulated under the Toxicity Characteristic rule from EPA to Ecology authority, and propose changes that will add emission control requirements necessary to comply with regulations applicable to organic air emissions.

Copies of material supporting each of these proposals are available for review at the locations listed on page 6 of this document.

This proposed permit modification affects only the EPA portion of the Hanford Federal Facility permit. EPA has drafted this Statement of Basis in coordination with a companion permit modification prepared and issued separately by the Washington State Department of Ecology pertaining to the state portion of the Hanford Federal Facility permit. EPA and Ecology are conducting joint public notice and comment on these two companion permit modifications.

Public Comment Opportunity

You are encouraged to comment on this proposed RCRA permit modification. **The deadline for comments is December 20, 1999**. Comments should be submitted in writing no later than December 20 to:

Dave Bartus, U.S. EPA Region 10
1200 6th Ave., MS WCM-127
Seattle, WA 98101
E-mail: *bartus.dave@epa.gov*

Comments should include all reasonably available references, factual grounds and supporting material. Comments concerning the companion Ecology permit modification should be submitted directly to the Washington State Department of Ecology as indicated in the corresponding Ecology permit modification fact sheet.

Public Hearing

Tuesday, November 9, 1999
Washington State Department of Ecology
1315 W. 4th Ave., Kennewick, Washington
7:00 pm

For further information regarding the hearing call Ecology at (800) 321-2008. For special accommodation needs, please contact Lori Guertin,at (509) 736-3007 (voice) or (360) 407-6006 (TDD).

EPA will consider all written comments received during the public comment period, comments received during the public hearing, the requirements of the hazardous waste regulations, and EPA permitting policies.

When EPA makes a final decision regarding the proposed modification, notice will be given to the Department of Energy and each person who has submitted written comments or requested notice of the final decision. The final decision shall become effective no sooner than the sixty (60) days after notice is provided unless a review is requested pursuant to 40 C.F.R. §124.19. Further, a final EPA decision on this corrective action transfer proposal will not be made until after the effective date of the corresponding Ecology modifications.

Background

EPA and Ecology issued Hazardous and Solid Waste Amendments (HSWA) and Dangerous Waste components, respectively, of the Hanford Federal Facility permit in August 1994. Together, these components constitute the RCRA permit for the Hanford Federal Facility. The RCRA permit was issued according to the federal Resource Conservation and Recovery Act, the Washington State Hazardous Waste Management Act, and respective implementing regulations.

The EPA component of the permit outlines requirements for corrective action, waste minimization, land disposal restrictions, and management of toxicity characteristic wastes, provisions for which Washington State had not yet received final authorization at the time the Dangerous Waste portion of the Hanford Federal Facility permit was initially issued. The state portion of the permit outlines standard and general facility conditions, as well as unit-specific conditions for the operation, closure, and post-closure of individual mixed or dangerous waste treatment, storage, and/or disposal units at Hanford.

Corrective Action

After the initial Hanford permit was issued, Ecology received final EPA authorization for the HSWA corrective action program (See 59 Federal Register[FR] 55322, November 4, 1994). This final authorization action, however, did not result in automatic transfer of the EPA HSWA permit to authorized state authority. Today's proposed action, in conjunction with the proposed Ecology action, is intended to accomplish this transfer of authority. These two actions will result in Ecology establishing permit conditions in the state portion of the Hanford permit corresponding to those now in effect under EPA HSWA authority, and removal of the existing EPA conditions.

Toxicity Characteristic Wastes

The EPA and Ecology hazardous waste program regulate certain wastes according to whether or not they exhibit certain hazardous waste characteristics. One of these characteristics is the toxicity characteristic, which was promulgated as part of the federal program on March 29, 1990 (See 55 FR 11798) as the Toxicity Characteristic (TC) rule.

Because the TC rule was in effect at the time the original HSWA portion of the Hanford Federal Facility permit was issued, but Ecology had not yet received final authorization for it, EPA included permit conditions in the HSWA component of the Hanford Federal Facility authorizing management of TC wastes. Subsequent to the effective date of EPA's component of the Hanford permit, Ecology received final authorization for the TC rule (See 61 FR 7736). As a result, EPA is proposing to transfer authority to regulate TC wastes to Ecology by deleting the corresponding permit conditions in the HSWA permit..

Since Ecology already regulates TC wastes through incorporation of Part A permit applications (which in turn identify each TC waste code to be managed at each regulated TSD unit), no corresponding Ecology permit modifications are necessary to effect this transfer.

Subpart AA/BB

EPA promulgated rules imposing organic air emissions control requirements on hazardous waste treatment, storage and disposal facilities with certain process vents, as well as control requirements for organic emissions from equipment leaks. (See 55 FR 25494, June 23, 1990.) These rules are promulgated under HSWA authority, and are currently in effect under both EPA and Ecology authority in Washington State, although Ecology has not yet received final authorization to implement the State rules in lieu of the federal program. The rules require that permit conditions be included in each facilities operating permit at such time as new units are incorporated into the permit, or the permit is reopened or renewed. (See 62 FR 64636.) EPA is proposing to add Subpart AA/BB permit conditions that will generally cover the Hanford federal facility. These conditions require compliance with Subparts AA and BB by reference.

Subpart CC

EPA promulgated a series of rules imposing organic air emissions control requirements on hazardous waste treatement facilities managing waste in tanks, containers and surface impoundments beginning in December, 1994. (See 59 FR 62896, December 6, 1994, 61 FR 59932, November 25, 1996, and 64 FR 3382, January 21, 1999). These rules are promulgated under HSWA authority, and are currently in effect under EPA authority in Washington State. The rules require that permit conditions be included in each facility's operating permit at such time as new units are incorporated into the permit, or the permit is reopened or renewed (see 62 FR 64636). EPA is proposing to add Subpart CC permit conditions to units being added to the Ecology portion of the Hanford Federal Facility permit, as well as to units already in the permit prior to the effective date of the Subpart CC rule.

The proposed permit conditions generally incorporate by reference the Subpart CC rules, except for the requirement that the Permittee explicitly document and claim any exclusion from the Subpart CC rule available pursuant to 40 CFR §264.1080(b).

Due to the wide variety of wastes managed by the Permittee, EPA has proposed an additional provision to require the Permittee to properly identify wastes eligible for exclusion from regulation under Subpart CC. To ensure the variety of wastes are properly managed and appropriately controlled, EPA believes that it is essential for the Permittee to properly identify which wastes are mixed wastes (for example) and thus eligible for an exclusion, and those wastes which do not qualify for an exclusion and must comply with the remaining requirements of Subpart CC. This recordkeeping requirement is being proposed pursuant to the "omnibus" authority of 40 CFR §270.32(b)(2). Omnibus authority requires that EPA include such terms and conditions in the permit as necessary to protect human health and the environment, beyond the specific requirements of Subpart CC.

Since the PUREX tunnels exclusively store mixed waste, EPA is not requiring the Permittee to document that these mixed wastes meet the Subpart exclusion for mixed waste under 40 CFR §264.1080(b)(6). See Attachment 28, Chapters 3 and 4 of the Ecology Dangerous Waste portion of the Hanford Federal Facility permit concerning waste stored in the PUREX tunnels. However, the Permittee must seek a permit modifcation to add appropriate Subpart CC requirements if the PUREX tunnels are ever used to manage

non-mixed wastes (thus making this exclusion is no longer applicable.)

Purpose of the Permitting Modification Process

The purpose of the permit modification process is to alter the specific administrative and operational requirements under which the Department of Energy must operate to comply with the hazardous waste management requirements promulgated under RCRA. In proposing modified permit conditions, EPA is reopening only those permit conditions to be modified. All other conditions remain in effect for the duration of the unmodified permit.

Similarly, Ecology authorization for the Toxicity Characteristic rule and promulgation of the subpart CC rule provide a basis for the agency initiated permit modifications under 40 CFR §270.41(a) (3).

Procedures for Reaching a Final Decision

EPA's proposed modification to the HSWA component of the Hanford Federal Facility permit is considered an Agency-initiated permit modification. EPA may initiate an agency-initiated modification when the standards or regulations on which the permit was based have been changed by statute, through promulgation of new or amended standards or regulations, or by judicial decision after the permit was issued. See 40 CFR §270.41(a) (3). EPA interprets Ecology's adoption of corrective action regulations and final authorization of the Washington State Department of Ecology for corrective action authority as sufficient grounds for an agency-initiated permit modification under this regulatory provision.

Contents of the Permit Modification

Corrective Action

EPA is proposing to remove the following definitions and conditions from the existing HSWA component of the Hanford Federal Facility Permit:

Definitions, as follows:

a.	*"Action Level"*
d.	*"Corrective Action Management Unit (CAMU)"*
k.	*"Lessee"*
m.	*"Raw Data"*
n.	*"RCRA Past Practice Units"*
p.	*"Release"*
q.	*"Remediation Waste"*
r.	*"Solid Waste Management Unit (SWMU)"*
s.	*"Temporary Unit(s)"*

Condition I.C.3

Part III, *Corrective Action*

Attachment A, *RFI Work Plan Requirements*
Attachment B, *Sampling and Analysis and Data Management Program Requirements*
Attachment C, *Scope of Work for Corrective Measure Study*
Attachment D, *Scope of Work for the Corrective Measure Implementation*
Attachment E, *Interim Measures Requirements*
Attachment G, *Corrective Action Requirements for RCRA Past Practice Units*

Each of these definitions, conditions or attachments apply only to corrective action authorities, which are being transferred to state authority.

Toxicity Characteristic

EPA is proposing to remove the following conditions from the existing permit relating to management of Toxicity Characteristic wastes:

Condition IV

Condition V

Subpart CC Air Emissions Controls

EPA is proposing to add the following conditions to the permit:

Part VI. Unit-Specific Conditions for Subpart CC Air Emissions Standards for Tanks, Surface Impoundments and Containers.

VI.A The Permittee shall comply with requirements of 40 Code of Federal Register (CFR) 264.1080 requirements in accordance with HSWA Permit Condition VI.A.2 for the following units identified in Part III of the Ecology portion of the Hanford Federal Facility Permit:

VI.A.1.a 616 Nonradioactive Dangerous Waste Storage Facility

VI.A.1.b 305-B Storage Facility

VI.A.1.c Liquid Effluent Retention Facility and 200-Area Effluent Treatment Facility

VI.A.1.c 242-A Evaporator

VI.A.1.d 325 Hazardous Waste Treatment Units

VI.A.1.e Waste Receiving and Processing (WRAP) Facility

VI.A.1.f Central Waste Complex (CWC)

VI.A.2 The Permittee shall comply with the requirements of 40 CFR Part 264 Subpart CC for all tank, container, and surface impoundment waste management units identified in Permit Condition VI.A.1.a through f, unless one of the exclusions enumerated in 40 CFR 264.1080(b) is claimed.

VI.A.2.a For any exclusion claimed under 40 CFR 264.1080(b) other than 264.1080(b)(7), the Permittee shall place in the facility operating record documentation that supports the claimed exemption. This documentation shall be updated on an annual basis, no later than the anniversary date of this permit condition. For tank or surface impoundment waste management units, documentation shall apply to each waste management unit. For container storage units, documentation shall apply to individual containers. Initial documentation required under this condition shall be placed in the operating record within sixty (60) days after the effective date of this permit condition.

VI.A.2.b For any exemption claimed under 264.1080(b)(7), the Permittee shall comply with 264.1089(j).

VI.B The Permittee shall not manage non-mixed hazardous wastes (i.e., hazardous wastes with no radioactive component regulated under the Atomic Energy Act and/or the Nuclear Waste Policy Act) in the PUREX Storage Tunnels prior to receiving a final Class III permit modification to incorporate the PUREX Storage Tunnels into HSWA Permit Condition VI.A.

Statutory Authorities

This document is being issued in accordance with the requirements of 40 CFR Section 124.8. As stated earlier, the purpose of the permit modification process is to alter the specific administrative and operational requirements under which the Permittee must operate to comply with the hazardous waste management requirements promulgated under RCRA as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), and regulations adopted thereunder by EPA in 40 CFR Parts 124 and 260 to 270. The regulatory requirements for an Agency-initiated permit modification are provided under 40 CFR Section 270.41 and 40 CFR Part 124. Section 7004(b) of RCRA and 40 CFR 124.5 require that EPA prepare draft permit conditions, and that the public be given forty-five (45) days to comment. In addition, EPA must provide public notice of a public hearing at least thirty (30) days before the hearing.

Availability of Documents for Public Review

The administrative record which supports the HSWA permit and this modification, including all data submitted by the Department of Energy and the fact sheet, may be reviewed between the hours of 8:30 am and 4:30 pm, Monday through Friday at the following locations:

U.S. EPA Region 10
Office of Waste & and Chemicals Mgmt.
MS WCM-127
1200 6th Avenue
Seattle, Washington 98101

Contact: Dave Bartus
(206) 553-2804 or toll-free at 1-800-424-4372
E-mail: ***bartus.dave@epa.gov***

Lockheed Martin Services Incorporated
2440 Stevens Center
Mail Stop H6-08
Richland, WA 99352

Contact: Debra A. Isom
(509) 376-2530
E-Mail: ***Debra_A_Debbi_Isom@rl.gov***

Any person desiring further information, copies, or portions of the administrative record, or an appointment to review the record should contact either of the individuals listed above.

HANFORD PUBLIC INFORMATION REPOSITORIES

In addition, copies of the HSWA permit, an index of the HSWA permit administrative record and fact sheets for the permit and this proposed modification are available for public review at the following public information repositories:

Portland-Portland State University
Branford Price Millar Library
934 SW Harrison and Park
Portland, Oregon 97207
(503) 725-3690
Attn: Michael Bowman/Jocelyn Kramer
Email: *bowman@lib.pdx.edu*

Spokane-Gonzaga University
East 502 Boone
Spokane, WA 99258
(509) 323-3839
Attn: Connie Scarppelli
Email: *carter@its.gonzaga.edu*

Richland-Public Reading Room
2770 University Drive
Consolidated Information Ctr, Rm. 101L
Richland, Washington 99352
(509) 372-7443
Attention: Terri Traub
Email: *reading_room@pnl.gov*

Seattle-University of Washington Suzallo Library
Government Publication Division
Seattle, Washington 98195
(206) 543-4664
Attention: Eleanor Chase
Email: *echase@u.washington.edu*
Public Service: (206) 543-1937

Internet Access

This document is also available on the Internet at the following address: **http://www.epa.gov/r10earth** (once there, click on "Waste and Chemicals") **To ensure effective communications with everyone, additional services can be made available to persons with disabilities by contacting EPA at (800) 424-4372.**

DOE/RL-90-24
Revision 4

Copy No. 01

Hanford Facility Dangerous Waste Permit Application, PUREX Storage Tunnels

United States
Department of Energy
Richland, Washington

Approved for Public Release

CONTENTS

3.0 WASTE ANALYSIS [C] 3-1

3.1 CHEMICAL, BIOLOGICAL, AND PHYSICAL ANALYSES [C-1] 3-1

3.2 WASTE ANALYSIS PLAN [C-2] 3-2

3.3 TRACKING SYSTEM [C-4] 3-2

APPENDIX

3A WASTE ANALYSIS PLAN FOR PUREX STORAGE TUNNELS . . . . . APP 3A-i

This page intentionally left blank.

3.0 WASTE ANALYSIS [C]

This chapter provides information on the chemical, biological, and physical characteristics of the dangerous waste stored in the PUREX Storage Tunnels. A waste analysis plan (Appendix 3A) describes the methodology used in the characterization of the stored waste. Knowledge of the characteristics of the dangerous waste to be stored is used to ensure that the waste is managed properly.

Waste stored in the tunnels is mixed waste as a result of radioactive contamination. Because the dangerous waste is an integral part of radioactively contaminated material, this waste is managed as a mixed waste. The PUREX Storage Tunnels provide the necessary shielding for the protection of employees and the environment.

3.1 CHEMICAL, BIOLOGICAL, AND PHYSICAL ANALYSES [C-1]

Regulated material presently stored in the PUREX Storage Tunnels contains the following dangerous waste:

- Lead
- Mercury
- Silver and silver salts
- Chromium
- Cadmium
- Barium
- Mineral oil.

In general, dangerous waste is either attached to, contained within, or actually is material removed from the PUREX Plant and other onsite sources. Changes in the amount of dangerous waste stored will be updated annually in the annual dangerous waste report submitted to Ecology. Future storage of barium and selenium may occur in Tunnel Number 2. Further discussion of waste types is included in the waste analysis plan (Appendix 3A).

The PUREX Storage Tunnels are being permitted as a miscellaneous unit under WAC 173-303-680 because the tunnels are not a typical containerized storage unit. That is, the bulk of the material stored in the tunnels is not placed in a container; rather, this material is placed on a portable device (railcar) used as a storage platform. In general, the mixed waste stored in the PUREX Storage Tunnels is encased or contained within carbon or stainless steel plate, pipe or vessels that meets the WAC 173-303-040 definition of container. Therefore, the mixed waste normally is not exposed to the tunnel environment.

The only free-liquid dangerous waste stored in the tunnels is elemental mercury. The mercury is contained within thick-walled (0.8-centimeter) thermowells. The amount of mercury per thermowell is less than 1.7 liters.

Other liquid containers, such as large discarded process tanks, are stored in the PUREX Storage Tunnels. These containers are 'empty' [per WAC 173-303-160(2)(a)]. In the future, containers will be flushed and the final rinsate sampled and analyzed to verify that the residual heel is not a dangerous waste.

The only stored mixed waste that is designated as either reactive or ignitable (D001) is silver nitrate in the silver reactors [WAC 173-303-090(5)]. There is no mixed waste designated as reactive (D003). The potential for ignition from this source is considered to be negligible because this material is dispersed on ceramic packing and is physically isolated from contact with any combustible material or ignition source.

3.2 WASTE ANALYSIS PLAN [C-2]

The *Waste Analysis Plan for the PUREX Storage Tunnels* is provided in Appendix 3A.

3.3 TRACKING SYSTEM [C-4]

Specific waste tracking forms for the movement of waste destined for the PUREX Storage Tunnels are used. These waste tracking forms effectively track waste inventories from generation through storage.

The waste tracking forms and other supporting documentation will be maintained at the Hanford Facility for a minimum of 5 years following closure of the PUREX Storage Tunnels.

CONTENTS

4.0 PROCESS INFORMATION [D] 4-1

4.1 OPERATION OF THE PUREX STORAGE TUNNELS 4-1
4.1.1 Preparation for Tunnel Activities 4-1
4.1.1.1 Storage/Removal Equipment Preparation 4-1
4.1.1.2 Water-Fillable Door Preparation 4-2
4.1.1.3 Other Preparation Tasks 4-2
4.1.2 Tunnel Storage Activities 4-2
4.1.2.1 Physical Characterization of Material to be Stored 4-2
4.1.2.2 Material Flushing 4-3
4.1.2.3 Railcar Preparation 4-3
4.1.2.4 Placement of Material into Storage Position . . 4-3
4.1.3 Removal of Stored Material 4-4
4.1.4 Filling the Water-Fillable Door (Tunnel Number 2) . . . 4-4
4.1.5 Poststorage Activities 4-5
4.1.6 Operation of the Tunnel Ventilation System 4-5
4.1.6.1 Tunnel Number 1 Ventilation 4-5
4.1.6.2 Tunnel Number 2 Ventilation 4-5

4.2 CONTAINERS [D-1] 4-6
4.2.1 Containers with Free Liquids 4-6
4.2.2 Containers Without Free Liquids That Do Not Exhibit Ignitability or Reactivity 4-7
4.2.3 Protection of Extremely Hazardous Waste in Containers 4-7
4.2.4 Prevention of Reaction of Ignitable, Reactive, and Incompatible Waste in Containers 4-8

APPENDIX

4A ENGINEERING DRAWINGS . . . . . APP 4A-i

FIGURE

4-1. Water-Fillable Door Exterior (Tunnel Number 2) F4-1

This page intentionally left blank.

4.0 PROCESS INFORMATION [D]

This chapter discusses the processes involved in the operation of the PUREX Storage Tunnels. The PUREX Storage Tunnels are used for the storage of mixed waste from the PUREX Plant and other onsite sources.

The PUREX Storage Tunnels were designed and constructed to provide a means of protecting personnel and the environment from radiation associated with stored material. This design also serves to protect personnel and the environment from the dangerous waste component of the mixed waste stored inside the tunnels. A physical description of the PUREX Storage Tunnels is provided in Chapter 2.0.

The PUREX Storage Tunnels are being permitted as a miscellaneous unit under WAC 173-303-680. The WAC regulations require that miscellaneous unit permit terms and provisions address appropriate requirements provided for other TSD units. Because the operation and construction of the PUREX Storage Tunnels most closely resemble that of a container storage unit, the appropriate requirements prescribed for a container storage unit are addressed in this chapter.

4.1 OPERATION OF THE PUREX STORAGE TUNNELS

This section describes the selection, characterization, preparation, placement, and removal activities associated with storage of mixed waste in the PUREX Storage Tunnels. Except as noted, these activities also apply to the storage of radioactive waste placed in the PUREX Storage Tunnels.

4.1.1 Preparation for Tunnel Activities

Management, with the concurrence of an appropriate cognizant engineer, determines when material is to be removed and transported to the PUREX Storage Tunnels. A job specific work plan describing the overall transfer activities is prepared.

4.1.1.1 Storage/Removal Equipment Preparation. A remotely controlled, battery-powered locomotive normally was used to move railcars into and out of the PUREX Storage Tunnels. Other mechanical means such as a standard locomotive or a winch also can be used independently or in combination with the remote locomotive should the need arise. Methods for use of the remote locomotive are described in this chapter as this represents the normal placement and removal of railcars at the PUREX Storage Tunnels. Should storage activities require the use of a mechanical means other than the remote locomotive to place or withdraw a railcar, methods for that application will be developed.

Preparatory activities associated with the remote-controlled locomotive included the following:

- Charging the batteries for both the locomotive and the radio transmitter

- Performing operational checks

- Installing a plastic shroud over the locomotive to facilitate decontamination

- Installing an anticoupling device on the south coupler of the locomotive (storage only)

- Performing physical inspections of the railroad track within the railroad tunnel to ensure that the track switches are positioned properly and the track is clear of obstructions.

4.1.1.2 Water-Fillable Door Preparation. Each PUREX Storage Tunnel has a water-fillable door that isolates the storage area from the PUREX railroad tunnel. (Chapter 2.0 provides a description of the door.)

Currently, the water-fillable door to Tunnel Number 2 is empty and is not expected to be filled. Operational checks are performed on the door hoists. Before performing operational checks on the water-fillable door, the operator confirms with a dispatcher that the railroad tunnel area is clear of personnel.

4.1.1.3 Other Preparation Tasks. Before material storage, the following preparatory tasks are completed.

- The storage tunnel exhaust fan is verified to be operating.

- Labels will be attached to the railcar in accordance with WAC 173-303-395(6) and 173-303-630(3) if the material contains dangerous waste components.

4.1.2 Tunnel Storage Activities

This section describes the placement of material within the PUREX Storage Tunnels.

4.1.2.1 Physical Characterization of Material to be Stored. Physical characterization includes an evaluation of the following physical properties:

- Length, width, and height
- Gross weight and volume
- Preferred orientation for transport and storage
- Presence of mixed waste.

Information sources used in physical characterization include equipment fabrication and installation drawings, operational records, and process knowledge. Physical characterization provides information necessary to

appropriately describe the mixed waste materials. Such information also is used to design and fabricate, if required, supports on the railcar.

Specific material known to contain constituents that would cause the equipment to be designated as mixed waste is discussed in the waste analysis plan (Appendix 3A). The material includes but is not limited to dissolvers that contain elemental mercury; silver reactors that contain silver salts; jumpers and other equipment that have elemental lead counterweights; a concentrator that contains chromium; neutron absorbing equipment containing cadmium. Characteristics of these materials when stored as mixed waste are described in Chapter 3.0. Waste transferred to the PUREX Storage Tunnels from other than PUREX Plant also would be physically characterized.

4.1.2.2 Material Flushing. Before removal from service, the material from the PUREX Plant was flushed to minimize loss of products, to reduce radioactive contamination, and to reduce to nonregulatory levels the concentration of any dangerous chemicals present in a residual heel. In the future the analysis of the rinsate will be used to determine when these goals have been achieved. The analysis of the final flush will be retained as part of the PUREX Storage Tunnel records. Material removed from other onsite units will be prepared for transfer to the tunnels in accordance with this dangerous waste permit application.

4.1.2.3 Railcar Preparation. Railcars are modified to serve as dedicated storage platforms and transporters for material placed in the PUREX Storage Tunnels. The wooden decking on the railcars is removed to minimize the amount of combustible material placed in the PUREX Storage Tunnels. The south coupler is disabled or removed to prevent the railcar from coupling to the railcar stored ahead. Brakes are disabled to ensure free wheeling of the railcar. Steel decking, catch pans filled with absorbent, and equipment cradles are provided as needed to modify the railcar for its specific task.

4.1.2.4 Placement of Material into Storage Position. With all preparations complete and with the approval of cognizant management, transferring material to the PUREX Storage Tunnels proceeds as follows.

- The water-fillable door to the storage tunnel is opened.
- The railcar is loaded as specified in the storage tunnel checklist.
- An inventory of items loaded on the railcar and a record of their location on the railcar are recorded in the storage tunnel checklist.
- A health physics technician obtains a radiation level survey of the loaded railcar at a distance commensurate with ALARA practices.
- The railcar is pushed into the storage tunnel to its storage position.
- Once the railcar is in position, the water-fillable door is closed.

4.1.3 Removal of Stored Material

Removal of material stored within the PUREX Storage Tunnels is not conducted routinely. It is planned that the material will remain in storage until a means to accommodate processing and repackaging of the material for disposal or further storage or until another final disposition option becomes available. Removal of material from storage within the PUREX Storage Tunnels would proceed after the preparation activities identified in Section 4.1.1.

With all preparations complete and approval of management, removal of material from the storage area of the PUREX Storage Tunnels would proceed as follows.

- The equipment that will be used to remove material is positioned in the PUREX railroad tunnel.
- Verification is made that the PUREX railroad tunnel is configured properly to proceed with entrance into the PUREX Storage Tunnels (i.e., tunnel ventilation system is operating, the overhead door is closed and the health physics technician has performed a radiation survey of the area.
- The water-fillable door is opened.
- The equipment that will be used to remove material is moved into the storage tunnel and connected to the railcar.
- Verification is made that the railcar is connected to the removal equipment and the railcar is extracted from the storage tunnel and positioned within the PUREX railroad tunnel.
- The water-fillable door is closed.

The loaded railcar retrieved from the tunnel would be remotely viewed and radiation measurements may be obtained to determine the possibility of mixed waste containment failure during storage in the PUREX Storage Tunnels. If evidence of containment failure is detected, the specific details (i.e., material, location on railcar, storage position) would be documented and attached to the waste tracking form. This information would be maintained in the files and would be used to establish sampling locations within the tunnels at closure. After remote viewing and radiation surveys, the railcar and associated material may be prepared as required for transfer to an appropriate onsite TSD unit for treatment or further storage.

4.1.4 Filling the Water-Fillable Door (Tunnel Number 2)

If radiation shielding beyond that provided by the empty water-fillable door becomes necessary, the door can be filled with water. In the past, this was accomplished by connecting a fire hose from the water hydrant to the wall stub on the exterior of the door housing (Figure 4-1). Once the fire hose was in place, the hydrant valve was opened and the door was filled with water.

The hydrant was closed by personnel when a high-level indicator light illuminated. Although attendance by an operator is required at all times during filling operations, should the door overfill, excess water is channeled through a vent/spill pipe to the door sump. A 15.2-centimeter drain is provided in each door sump. Water accumulated in the door sump was pumped out to the Double-Shell Tank System, and the sump and drain were made inoperable during PUREX Facility deactivation activities. The drain was sealed during PUREX Facility deactivation. In the future, a temporary source of water could be provided for filling the water-fillable door.

4.1.5 Poststorage Activities

The following poststorage activities would conclude the tunnel storage task.

- Decontamination activities, if required, are performed.
- Management is notified of any unusual conditions observed during the storage/retrieval activities.

4.1.6 Operation of the Tunnel Ventilation System

The ventilation systems for Tunnel Number 1 and Tunnel Number 2 were designed to ventilate air from within the tunnels so the airborne radioactive contamination is vented through a HEPA filtered exhaust system.

4.1.6.1 Tunnel Number 1 Ventilation. Active ventilation of Tunnel Number 1 presently is not provided. After placement of the last railcar into Tunnel Number 1, the tunnel was sealed (Chapter 2.0). As part of the sealing activities, the ventilation fan was deactivated electrically and the exhaust stack and filter were isolated from the system by installing blanks upstream and downstream of both the exhaust fan and filter and the stack was removed. In the event railcar removal activities are initiated, it is planned that the ventilation system would be reactivated. Operation of the ventilation system would be similar to that for Tunnel Number 2.

4.1.6.2 Tunnel Number 2 Ventilation. The Tunnel Number 2 ventilation system presently is inactive. As part of PUREX Facility deactivation, the water-fillable door and outer PUREX railroad tunnel door were sealed. The seal may be temporary or permanent depending on the future need for storing waste in the tunnel. The ventilation system may be operated continuously, or de-energized and reactivated during waste placement activities. During deactivation, a blank was installed on the downstream side of the filter and the stack was capped. When the determination has been made that Tunnel Number 2 will no longer receive waste, the ventilation system will be blanked and deactivated electrically similar to the Tunnel Number 1 ventilation system. While the Tunnel Number 2 ventilation system is operating and the water-fillable door is closed, the exhaust system, which discharges approximately 100 cubic meters per minute, maintains a slightly negative pressure in the tunnel. The exhaust air is replaced by infiltration around

the water-fillable door and through the porosity of the tunnel structure (e.g., the rail-bed ballast). When the water-fillable door is open (during transfer activities), inward airflow is maintained through the open doorway. This inward airflow channels airborne radioactive contamination away from both the railroad tunnel and personnel following railcars (if allowed) into the storage tunnel. A HEPA filter provides filtration of all exhaust air before release to the atmosphere. When the ventilation system is operating, the HEPA filter is tested in place at least annually to ensure radioactive particulate removal efficiency. Exhausted air is sampled periodically and analyzed for airborne radionuclides.

4.2 CONTAINERS [D-1]

This section describes the various types of containment used to isolate mixed waste stored in the PUREX Storage Tunnels. The PUREX Storage Tunnels are considered to be a miscellaneous unit most closely resembling that of a container storage unit. The mixed waste stored in the PUREX Storage Tunnels is contained and is not considered a risk to human health or to the environment.

4.2.1 Containers with Free Liquids

The only mixed waste stored as a free liquid is elemental mercury. A small quantity, less than 1.7 liters, of mercury is contained in each of the two thermowells attached to and contained within each dissolver (Chapter 3.0). Primary containment of the mercury is provided by the all-welded construction of the thermowell itself, which is fabricated from 7.6-centimeter, Schedule 80, 304L stainless steel pipe. The open upper end of the thermowell was plugged with a 304L stainless steel nozzle plug in preparation for storage. The dissolver rests on a cradle on its railcar in an inclined position. This ensures that the mercury remains in the lower portion of the thermowell and is not in contact with the mechanical closure on the nozzle end of the thermowell.

A secondary containment barrier for mercury, should it leak from the thermowell, is provided by the dissolver itself. The dissolver is a 304L stainless steel process vessel constructed from 1-centimeter-thick plate and is approximately 2.7 meters in diameter. The dissolver is of all-welded construction and contains no drains or nozzle outlets in the bottom several feet of its lower section, which contains both thermowells.

The 304L stainless steel used to contain the elemental mercury is both compatible with the waste itself and the storage environment. The potential for significant deterioration of either the primary or secondary containment barrier material before closure is considered to be negligible.

The dissolvers stored within the PUREX Storage Tunnels are not labeled as containing characteristic toxic mercury (D009) [WAC 173-303-090(8)(c)]. Procedures for labeling were not in place at the time of storage. Personnel access into the storage area for purposes such as labeling is not feasible

because of the radiation levels and cannot be justified under ALARA guidelines. Based on ALARA, mixed waste presently within the PUREX Storage Tunnels will remain unlabeled. However, during future transfers of mixed waste into the PUREX Storage Tunnels the railcars will be labeled as specified by WAC 173-303-395(6) and WAC 173-303-630(3).

4.2.2 Containers Without Free Liquids That Do Not Exhibit Ignitability or Reactivity

Most lead is fully contained in all-welded encasements of either carbon steel or 304L stainless steel (refer to Table 1 in Appendix 3A). The encasement serves as support, protection against mechanical damage, and protection of the lead from exposure to the environment. Also, lead has been placed in burial boxes of appropriate size. The boxes provide secondary containment for the lead in the unlikely event the primary encasement should fail. Although boxes may be open on the top, the PUREX Storage Tunnels are enclosed; therefore, the containers are protected from the elements.

Both carbon steel and 304L stainless steel used to encase the lead are compatible with the waste and the storage environment. Significant deterioration of either the primary or secondary containment barrier materials before closure is not considered to be credible.

In the past, material that contains lead or that has encased lead attached was not labeled as containing characteristic toxic lead (D008) [WAC 173-303-090(8)], because the requirements were not yet on line. As stated in Section 4.2.1, personnel entry into the tunnel storage area for purposes of labeling would be inconsistent with ALARA guidelines. However, during future storage of material containing lead the railcars will be labeled in accordance with WAC 173-303-395(6) and WAC 173-303-630(3).

4.2.3 Protection of Extremely Hazardous Waste in Containers

The present amount of mixed waste stored in the PUREX Storage Tunnels is sufficient to characterize this material as extremely hazardous waste. Because the PUREX Storage Tunnels are enclosed totally, protective covering from the elements and from run-on is provided for the storage of extremely hazardous waste. Periodic inspection of the equipment stored in the PUREX Storage Tunnels is not feasible because of radiation levels in excess of 5 roentgen per hour. Safe management of this waste is based on the following considerations.

- The operation of the PUREX Storage Tunnels is passive, i.e., once a storage position is filled, the storage position remains undisturbed until closure.

- The extremely hazardous waste is compatible with its storage container and the storage environment.

4.2.4 Prevention of Reaction of Ignitable, Reactive, and Incompatible Waste in Containers

There is no reactive or incompatible waste known to be stored in the PUREX Storage Tunnels. The only mixed waste stored in the PUREX Storage Tunnels considered an ignitable waste is the silver nitrate in Tunnel Number 2. The silver nitrate fraction of the silver salts, within the silver reactors, exhibits the characteristic of ignitability as defined in 49 CFR 173.127(a). Therefore, the silver salts are managed as an ignitable dangerous waste in accordance with WAC 173-303-395.

The risk of fire associated with the storage of silver nitrate in the PUREX Storage Tunnels is considered to be extremely low. This conclusion is based on the following considerations.

- The operation of the PUREX Storage Tunnels is passive; i.e., once a storage position is filled, the storage position remains undisturbed until closure.
- The silver nitrate is contained within large, heavy-walled stainless steel vessels that isolate the silver nitrate from contact with any combustibles that might be in the tunnels.
- The silver nitrate is dispersed over a large surface area on a ceramic packing substraight and is not conducive to build-up of heat that could lead to spontaneous combustion.
- Personnel access to the occupied areas of the tunnels is not permitted, thereby precluding activities that could present a fire hazard (e.g., smoking, flame cutting, welding, grinding, and other electrical activities).

Although ignitable waste storage units are required by WAC 173-303-395(1)(d) to have inspections conducted at least yearly by a fire marshall or professional fire inspector familiar with the requirements of the uniform fire code, the radiation levels within the PUREX Storage Tunnels make such inspections impractical. These inspections are not considered appropriate or necessary for the safe operation of the unit because of the nature of the ignitable waste, the means of storage, and ALARA concerns (Chapter 6.0, Section 6.2).

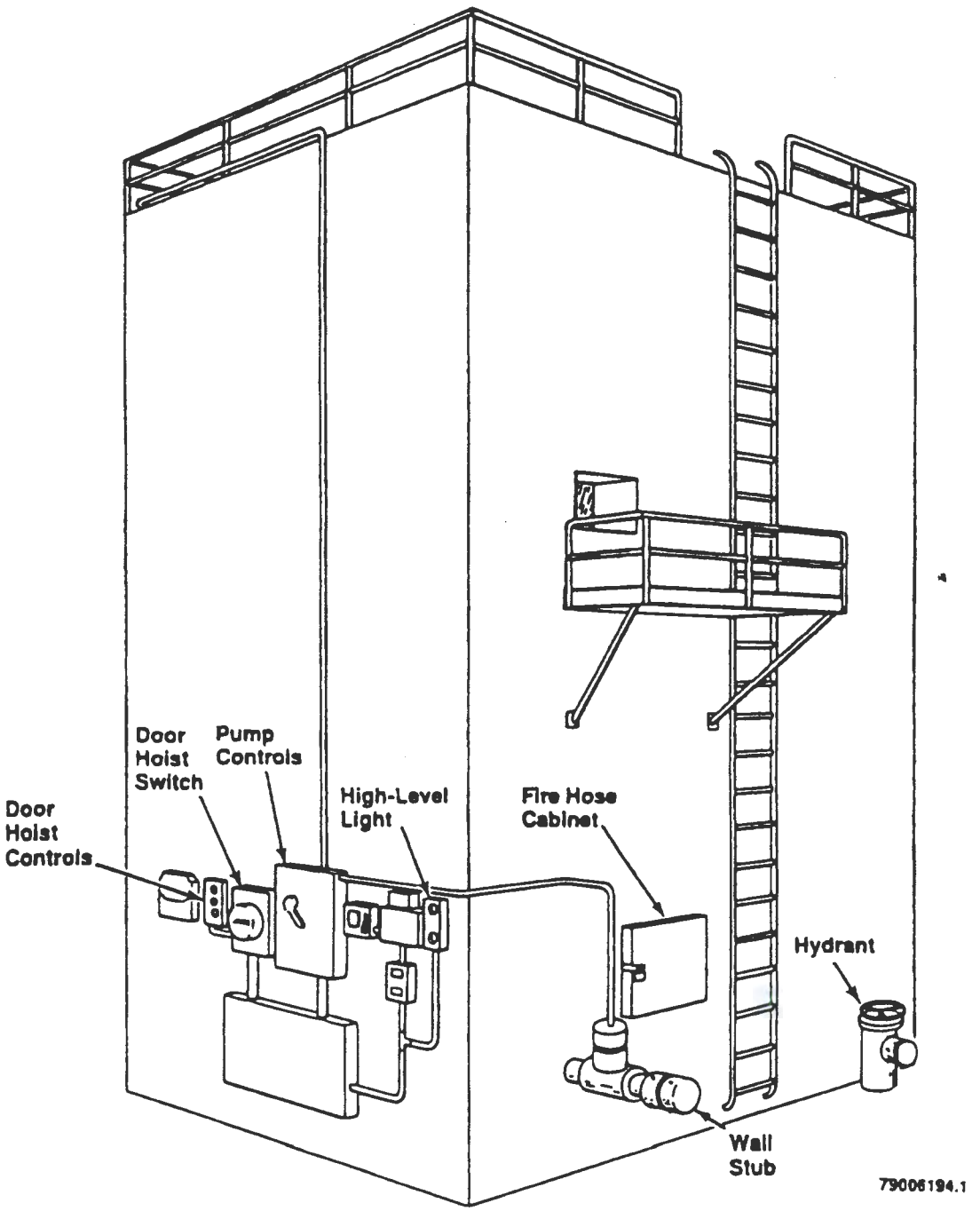

Figure 4-1. Water-Fillable Door Exterior (Tunnel Number 2).