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7. Abstract

This document describes the regulatory requirements and describes alternative strategies for obtaining permits and approvals for the High Level Waste Vitrification Plant.

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BY WHC

DATE Sept. 27, 1995

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PERMITTING PLAN
FOR
THE HIGH LEVEL WASTE VITRIFICATION PLANT

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GLOSSARY

ABBREVIATIONS AND ACRONYMS

ADM	Action Description Memorandum
APCA	Air Pollution Control Authority
BARCT	Best Available Radionuclide Control Technology
CAA	Clean Air Act
CDR	Conceptual Design Report
CFR	Code of Federal Regulations
CX	Categorical Exclusion
DOE-HQ	U.S. Department of Energy-Headquarters
DOH	State of Washington Department of Health
DS	Determination of Significance
DNS	Determination of Nonsignificance
DST	Double-Shell Tanks
EA	Environmental Assessment
Ecology	State of Washington Department of Ecology
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
FONSI	Finding of No Significant Impact
IB	Information Bulletin
IPM	Initial Pretreatment Module
NAAQS	National Ambient Air Quality Standards
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NEPA	National Environmental Policy Act
NOC	Notice of Construction
NOD	Notice of Deficiency
NOI	Notice of Intent - one for RCRA and one for NEPA
PNL	Pacific Northwest Laboratories
PSD	Prevention of Significant Deterioration
PSE	Preliminary Safety Evaluation
RCRA	Resource Conservation and Recovery Act
RD&D	Research, Development, and Demonstration
RL	Department of Energy, Richland Field Office
SEPA	State Environmental Policy Act
SEIS	State Environmental Impact Statement
SQE	Small Quantity Exemption
TAPs	Toxic Air Pollutants
T-BACT	Best Available Control Technology for Toxics
TSD	Treatment, Storage, and Disposal
VOCs	Volatile Organic Compounds
WAC	Washington Administrative Code

EXECUTIVE SUMMARY

This document describes the permitting plan for the High Level Waste Vitrification Plant.

A comprehensive review of environmental regulations has indicated that several environmental reviews (e.g., National Environmental Policy Act, State Environmental Policy Act), permits, and approvals are required prior to design, construction, and operation of the facility. A summary table of potentially applicable permits and approvals for the High Level Vitrification Plant is included as Appendix B for information. The environmental reviews, permits, and approvals, as well the regulatory authority potentially applicable to the Tank Waste Remediation System High Level Waste Vitrification Project (HLWVP), include the following:

National Environmental Policy Act - U.S. Department of Energy-RL and Headquarters

- Categorical Exclusion*
- Environmental Assessment*
- Environmental Impact Statement*

State Environmental Policy Act - State of Washington Department of Ecology

- State Environmental Policy Act Environmental Checklist*
- Mitigated Determination of Nonsignificance*
- Determination of Significance*

Air Permitting (see each Air Program)

- *National Emission Standards for Hazardous Air Pollutants; Radionuclides - Approval to Construct and Notification of Startup - U.S. Environmental Protection Agency*
- *Prevention of Significant Deterioration - State of Washington Department of Ecology*
- *Radiation Protection - Air Emissions - State of Washington Department of Health*
- *New Sources of Toxic Air Pollutants - State of Washington Department of Ecology*
- *Air Operating Permit Program - State of Washington Department of Ecology and State of Washington Department of Health*

Dangerous Waste Permitting (see each Program)

- *Dangerous Waste Permit - State of Washington Department of Ecology*
- *Research Development, and Demonstration Permit - U. S. Environmental Protection Agency*

Water Permitting

- *State Waste Discharge Permit Program - State of Washington Department of Ecology*
- *Underground Injection Control Program - State of Washington Department of Ecology*
- *Public Water Supplies - State of Washington Department of Health*
- *Onsite Sewage System - State of Washington Department of Health*

Miscellaneous Reviews/Permits/Approvals

- *Excavation Permit - U.S. Department of Energy, Richland Operations Office*
- *Endangered Species Approval - U.S. Department of Energy, Richland Operations Office.*
- *Preoperation Monitoring of Facilities, Sites, and Operations - U.S. Department of Energy, Richland Operations Office*
- *Cultural Resource Review Clearance - U.S. Department of Energy, Richland Operations Office*

This document describes the environmental reviews (e.g., National Environmental Policy Act, State Environmental Policy Act), permits, and approval requirements for the project. It provides a summary of permit application data requirements, alternative strategies for permit completion and approval, as well as the estimated probability of success for each alternative strategy. The probability of success is based on previous experience and current regulatory trends. The information presented in this plan is preliminary and is subject to change. The permitting plan will be revised, as required, as additional information becomes available.

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PERMITTING PLAN FOR THE HIGH LEVEL WASTE VITRIFICATION PLANT

1.0 INTRODUCTION

This document describes permitting requirements for the Tank Waste Remediation System (TWRS) High-Level Waste Vitrification Plant (HLWVP). The primary objective of the TWRS High-Level Waste (HLW) Program is to immobilize the high-level and transuranic (TRU) waste fractions of the pretreated tank waste into a vitrified product in canisters, suitable for interim onsite storage and eventual offsite disposal in a geologic repository. Preparation of the encapsulated Cs and Sr isotopic sources for final disposal is also included in the HLW Program scope.

Several assumptions pertaining to the project and outlined in the document entitled "High-Level Waste Vitrification Program Definition and Implementation Strategy," WHC-IP-1061, Revision 1 are the basis for preparation of this permitting plan. It should be noted that the assumptions are subject to change, and the permitting plan will be revised accordingly.

- The HLWVP will start up in 2009 and will be a government-designed, -constructed, and -operated facility.
- The Civilian Radioactive Waste Management (CRWM) Project will accept canisters of the Hanford Site's HLW, starting in 2035 through 2040, for shipment and disposal at a geologic repository. This assumes that the HLW from all the other DOE sites, including Idaho, is shipped to the repository before any HLW is shipped from the Hanford Site.
- The HLW reference canister is a stainless steel cylinder that is nominally 68 cm in diameter and 457 cm long with a nominal glass volume of 1.26 m³. Four of these canisters will be placed in a container that is slightly larger in diameter than the multipurpose canister which the CRWM Project is considering for disposal of commercial spent nuclear fuel.
- Transuranic wastes will be blended with other HLWs to optimize the waste oxide loading of the glass.
- Based on the current reference flowsheet (which assumes that the caustic sludge wash process will produce approximately 12,000 MT of sludge, 45% waste oxide loading of the glass can be achieved, and a total operating efficiency of 60%), a vitrification facility with a nominal 8 MT/day throughput will have adequate capacity to complete its vitrification mission by 2023.
- If the processing targets listed above cannot be fully achieved, the HLWVP may need to operate through 2028 and may produce as much as 28,000 m³ of glass.

- The HLWVP will be a stand-alone facility. However, it will be located near the other disposal functions and will be serviced by many of the same support services and utilities.
- The HLW program will build and operate an interim storage facility for the canistered waste that has sufficient capacity to store the entire volume of glass, plus overpacked capsules, produced by the HLWVP until the canisters are shipped to a geologic repository.
- Because of tank space limitations and other technical considerations, several unique feed stream types will be created as a result of the retrieval sequence and subsequent blending and pretreatment. The degree of variability of these feed streams from the "master" blend will determine the extent of additional waste form qualification required.
- On a case-by-case basis the canistered HLW will either be reworked or overpacked, or a waiver for out-of-specification product will be sought, depending on which course of action is deemed most cost-effective. Minimal recycle of the HLW product is anticipated.
- The capsules will remain in the Waste Encapsulation and Storage Facility (or other temporary storage outside the scope of the TWRS Program) until processed for disposal, but not later than 2028. The capsules will be retrieved, inspected, repaired as required, and transported to the HLWVP before acceptance by the TWRS program.
- Capsule processing will be performed in the HLWVP concurrent with high-level tank waste vitrification.
- In addition to special capsule handling equipment and hardware, the capsule overpacking will employ the same canister, canister handling equipment, closure weld, decontamination process, multipurpose canister overpacking equipment (if used), transport, and interim storage facility as that used for the vitrified HLW.
- The high-temperature, joule-heated and the high-frequency, induction-heated melter systems will be tested and evaluated through FY 1997 as potential replacements for the low-temperature, liquid-fed ceramic melter. If test results are promising, one will be recommended for inclusion in the conceptual design. The second one will be maintained as a backup until the final selection of a reference melter is made in September 1998 (Tri-Party Agreement Milestone M-51-02).
- The majority of the nonradioactive melter testing will be performed using bench- and small-scale melters. Nonradioactive pilot-scale testing will be used to confirm anticipated scaleup performance, and test full-scale equipment features as required for design verification.
- Representative waste simulants will be developed for nonradioactive melter testing and evaluation studies.

- Limited laboratory- and bench-scale melter testing will be performed using pretreated radioactive waste to the extent required to confirm the results of testing performed with simulants.
- The HLWVP will be constructed in the 200 East Area of the Hanford Site in close proximity to existing facilities.
- The projected TWRS-EIS Record of Decision (ROD) will stay on schedule (11/96), with a possible 6 month float.

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2.0 NATIONAL ENVIRONMENTAL POLICY ACT

The NEPA 42 U.S.C. 4321 et seq, was enacted to ensure that environmental matters are considered prior to initiation of federal actions which may affect the quality of the human environment. The DOE regulations (10 CFR 1021) promulgated under NEPA were developed to assess the environmental impacts associated with specific DOE proposals or actions.

2.1 INTRODUCTION

If a proposed action appears to be covered under an existing approved environmental impact statement (EIS) or environmental assessment (EA), the relevant Record of Decision (ROD) or Finding of No Significant Impact (FONSI) should be examined to ensure the proposed action is adequately bounded by existing documentation. The DOE determines if existing documentation covers the action. Preparation of a Supplement Analysis (SA) may be required for evaluation of EIS coverage.

If a proposed action is not covered by existing environmental documentation, an evaluation should be conducted to determine if the proposed action falls within DOE's NEPA categorical exclusions (CX). If the proposed action appears to be categorically excluded, then an information bulletin (IB) is prepared that summarizes the proposed action and its background. In addition, an explanation of how the action meets the minimum requirements of a CX is needed. Based on this information, RL determines if the CX applies.

If the proposed action is not covered by a CX, then an action description memorandum (ADM) may be developed. The ADM provides a brief but concise description of the proposed action, the potentially affected environment, and possible environmental impacts. All ADMs are sent to RL to assist in determining if an EA or an EIS must be prepared. This determination is based on guidance contained in 10 CFR 1021. RL may determine preparation of an EA or an EIS for a proposed activity without preparation of an ADM.

An EA is developed to discuss the environmental consequences of the proposed action and the alternatives to that action, including: the consequences of accidents and routine operations, and the cumulative and long term impacts. A discussion of the relationship of the proposed action to appropriate federal, state, and local land use plans, policies, and regulations is also discussed in the EA. DOE-RL has delegated authority to make NEPA determinations on EAs. The NEPA determination will result in a decision that the proposed action is a major action significantly affecting the environment, requiring an EIS, or issuance of a FONSI. If a proposed action appears to be covered under an existing approved environmental impact statement (EIS) or environmental assessment (EA), the relevant Record of Decision (ROD) or Finding of No Significant Impact (FONSI) should be examined to ensure the proposed action is adequately bounded by existing documentation.

2.2 ANALYSIS OF ALTERNATIVES

Various NEPA compliance alternatives may be available in an effort to support the HLWVP and associated testing activities. The probability of success (high, medium, low) will follow each listed alternative. See Appendix A for the HLWVP permitting schedule.

1. The proposed nonradioactive melter testing using bench- and small-scale melters and nonradioactive pilot-scale testing would be covered under an existing, approved Hanford sitewide CX. Coverage for limited laboratory- and bench-scale melter testing using pretreated radioactive waste to confirm results of testing performed with simulants would be provided by a separate CX determination. Coverage for the HLWVP would be provided by the TWRS-EIS. As the HLWVP moves through the design process, significant new information may become available that may require the preparation of a Supplement Analysis. (High)
2. Same as alternative one except that no Supplement Analyses will be required to the TWRS-EIS. Coverage for all melter testing and HLWVP would be under the TWRS-EIS. (Med)
3. Same as alternative one except that an EA would be required for melter testing for nonradioactive and/or radioactive pilot-scale testing depending on complexity and cost of effort. (Med)
4. Coverage for melter testing and HLWVP under the TWRS EIS. (Low)

2.3 UNCERTAINTIES

The projected TWRS-EIS ROD must stay on schedule (11/96). There may be delays in this projection. Any delays greater than 6 months may require additional NEPA coverage of interim actions for nonradioactive and/or radioactive melter testing.

2.4 PERMITTING STRATEGY SCHEDULE

For some non-radioactive and radioactive pilot-scale melter testing, it is assumed that a CX will be prepared for those testing activities not covered by a sitewide CX. A CX takes an estimated three months to complete. For design, construction, and demonstration of the HLWVP and associated facilities, coverage will be provided under the TWRS-EIS. If significant new circumstances or information arises after issuance of the TWRS-EIS ROD, A Supplement Analysis may be required for the HLWVP. A Supplement Analyses would take approximately one year to complete.

3.0 STATE ENVIRONMENTAL POLICY ACT

The SEPA, Chapter 43.21C Revised Code of Washington legislation which requires evaluation of environmental impacts associated with a project or an agency action prior to approval. The SEPA Rules, Chapter 197-11 Washington Administrative Code (WAC), are the implementing regulations.

3.1 INTRODUCTION

One agency is identified as lead agency for each project. The lead agency is responsible for assuring that SEPA compliance is completed prior to approving the proposed project. SEPA compliance is required for any project or proposal which meets the definitions of "action" in the SEPA Rules. See WAC 197-11-704. This includes projects which require a permit (e.g., Hazardous Waste Permit, Building Permit) or other approval from a governmental agency prior to operation. At the Hanford Site, Ecology is the lead agency for projects ("Actions") involving permitting of hazardous waste treatment, storage, or disposal facilities.

The SEPA compliance for a given project is completed prior to the lead agency making a decision to approve the project. At the Hanford Site, a SEPA environmental checklist is normally prepared prior to submittal of the first permit application to Ecology. The SEPA environmental checklist accompanies the permit application. The permit/approval may be conditioned or denied based on information in the SEPA environmental checklist. The requirement to submit a SEPA checklist may be waived by the Lead Agency if an approved NEPA EA or EIS addresses the proposed action. SEPA compliance is required, in addition to the normal permits or approvals, for a project.

When SEPA compliance is required for a project, the responsible official of the lead agency must make a threshold determination by deciding if a project is likely to have probable significant adverse impacts on the environment. If a project may have significant adverse impacts, a Determination of Significance (DS) will be issued and a State Environmental Impact Statement (SEIS) may be required. If the project will not have significant adverse impacts, or if the impacts can be mitigated, a determination of nonsignificance (DNS) or mitigated DNS will be issued. The threshold determination is normally based on the environmental checklist completed for the project and any information which the lead agency has on file.

The SEPA allows the lead agency to adopt a NEPA EA or EIS in lieu of doing additional review under SEPA (WAC 197-11-610). See Appendix A for the HLWVP permitting schedule.

3.2 ANALYSIS OF ALTERNATIVES

Various SEPA avenues may be evaluated in an effort to support the HLWVP. The alternatives open for consideration are discussed below. The probability of success (high, medium, low) will follow each listed alternative.

1. DS by the State. The State has a co-lead agency responsibility for preparation of the TWRS-EIS, which includes the HLWVP. (High)
2. A DNS from the State for the HLWVP. (Low)
3. A mitigated DNS from the State. (Low)

3.3 UNCERTAINTIES

The projected TWRS-EIS ROD must stay on schedule (11/96). There may be delays in this projection. Any delays greater than 6 months may require a separate SEPA checklist in lieu of NEPA coverage under the TWRS EIS.

3.4 PERMITTING STRATEGY SCHEDULE

A SEPA environmental checklist may be requested for the HLWVP by Ecology. This checklist may accompany the first permit application to be submitted to Ecology for approval, if requested. The state will likely issue a DS for the HLWVP. They are the co-lead for the TWRS-EIS. Additional Supplement Analyses may be required to address significant new circumstances or information relevant to environmental concerns (See Section 2.0).

4.0 RESOURCE CONSERVATION AND RECOVERY ACT

The RCRA, 42 U.S.C. 6901 et seq. was enacted as a comprehensive national program to mandate that hazardous waste will be treated, stored and disposed of so as to minimize the present and future threat to human health and the environment. In the State of Washington, the Dangerous Waste Regulations, WAC 173-303, are the implementing regulations.

4.1 INTRODUCTION

The Dangerous Waste Regulations apply to all facilities within Washington State that are used for treatment, storage and/or disposal (TSD) of dangerous waste. These regulations are equivalent to, or more stringent than, the federal hazardous waste regulations. Under the dangerous waste program all TSD facilities must obtain a permit.

The permitting framework for the Hanford Facility was established in the original Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) forged in 1989 (Ecology et al. 1989). The original document addressed the Hanford Facility as a single RCRA facility (U.S. Environmental Protection Agency/State Identification Number WA7890008967) consisting of over 60 TSD units. The original Tri-Party Agreement also established a stepwise permitting process that provided for the issuance of an initial RCRA permit for less than the entire Hanford Facility. The initial Hanford Facility RCRA Permit became effective in September 1994. Any TSD units not included in the initial permit will be incorporated through a permit modification. The TSD units not yet incorporated into the Hanford Facility RCRA Permit will continue to operate under interim status.

Expansion of Hanford Facility interim status TSD capacity can be carried out in accordance with WAC 173-303-281. Once a TSD unit on the Hanford Facility has been incorporated into the Hanford Facility RCRA Permit, expansion or modification to that unit requires a modification of the Hanford Facility RCRA Permit in accordance with WAC 173-303-830. Pilot plants used to provide research or demonstrate treatment technologies could require a Research, Development, and Demonstration (RD&D) permit in accordance with 40 CFR 270. The RD&D permit is administered by the EPA and must be obtained before initiating construction of the pilot plant.

An application for a RCRA permit for a proposed TSD unit consists of three collective submittals. Each submittal consists of various levels of detailed information concerning the unit. The three submittals are the NOI, the Part A permit application Form 3 (Part A), and the Part B permit application documentation.

Notice of Intent

The NOI identifies an applicant's intent to expand the interim status TSD capacity of the Hanford Facility. The requirements for developing a NOI are found in WAC 173-303-281. The NOI contains preliminary information concerning the proposed expansion. The NOI requires a general process description, operating capacities, waste type, development and submittal of a SEPA

Checklist, a topographic map, and a statement of existing environmental conditions.

In accordance with WAC 173-303-281, the NOI must be submitted to Ecology and the public reading rooms, and a public notification published in a local daily newspaper, at least 150 days prior to submittal of the Part A permit application. The NOI process normally requires approximately 11 months to complete, which at the completion of the Public Review period, the Part A permit application is submitted. Due to the public involvement, associated with the TPA milestones and EIS, Ecology may be willing to forgo the formal NOI process.

Part A

The current *Hanford Facility Dangerous Waste Part A Permit Application* (DOE/RL-88-21) consists of three "Dangerous Waste Permit General Information, Form 1s" and over 60 "Dangerous Waste Permit Application, Form 3s" (submitted at the unit level).

A Part A Form 3 that is prepared in support of an effort to expand the interim status TSD capacity of the Hanford Facility can be submitted no earlier than 150 days after the NOI is published. The Part A Form 3 can be submitted concurrently with the Part B; however, in most instance the Part A is filed in advance of the Part B. The Part A preparation process (following the submittal of the NOI) requires approximately 5 months to complete, including the WHC/RL review and certification requirements and receipt of Ecology approval.

Part B

As discussed in the Introduction, one RCRA Dangerous Waste Permit (#WA7890008967) has been issued for the Hanford Facility. Upon completion of the unit specific Part B process, each unit will be incorporated into the Hanford Facility RCRA Permit in accordance with a schedule contained in the Dangerous Waste Portion of the Hanford Facility RCRA Permit. Generally, preparation of a Part B application requires approximately 14 months, through the first certification cycle, and the total duration may last approximately 3 years.

The Part B consists of detailed design, technical, operation, maintenance, engineering, training, closure, and other relevant information concerning the waste management unit, in accordance with the Part B checklist provided by Ecology. The information is presented in a narrative format, often utilizing extensive figures, tables, and design media.

Upon submittal to Ecology, the Part B is evaluated for completeness and technical adequacy. The latter includes plausibility, general detail of plans and procedures, and protection of the environment. For any item deemed incomplete or technically inadequate, Ecology issues a Notice of Deficiency (NOD) to the applicant. The applicant responds to the NOD and if accepted by Ecology, modifications are made to the Part B as necessary. Modifications made to the Part B are reviewed by Ecology as a Working Draft Copy. The Working Draft Copy is discussed in workshops, where final text is negotiated. The final text is submitted to Ecology following a formal review and certification by WHC and RL. The "NOD/workshop/Part B revision" iterative

phase takes about 9 months and often longer depending on Ecology's manpower resources, acceptance of the application concept, complexity of the process, or changes to regulatory requirements in the interim.

Once the text has been finalized and submitted to Ecology, a formal request to modify the existing Hanford Facility RCRA Permit, for inclusion of the unit identified in the Part B, is requested by Ecology. Ecology prepares draft language for the modified permit. The draft language enforces proposed permit provisions and may reference sections of the final Part B permit application. This draft language is published for public and interagency review. Upon completion of the public review period, significant public comments are factored into the final status permit issued by Ecology.

Research, Development, and Demonstration Permit

A RD&D permit is intended for innovative and experimental dangerous waste treatment technologies or process for which permit standards have not been promulgated. The RD&D permit requirements are presented in 40 CFR 270, and generally the regulators are given wide latitude in applying RCRA requirements. Normally, RD&D permits have less stringent requirements than found in a Part B permit. This is primarily due to a limited threat posed by small-scale research projects. This permit could be required for melter testing if pretreated radioactive samples utilized for melter testing include dangerous waste constituents and are above the threshold quantities specified in WAC 173-303-071 for treatability studies.

In general, the RD&D permitting requirements are as follows:

- The permit is good for 365 operating days, at which time the permit may be renewed by EPA. A maximum of three renewals may be granted.
- The melter testing facility shall receive and treat only the types and quantities of waste the agency deems necessary for purposes of determining the efficiency and performance capabilities of the technology or process and their effects on human health and the environment.
- The permit shall contain conditions which the agency deems necessary to protect human health and the environment, including but not limited to, requirements pertaining to monitoring, operation, analysis, reporting, financial responsibility, closure, remedial action once the term of the permit has expired, and any other information and agency deems necessary.

Typically, a letter is developed by the proponent and submitted to the regulatory agency. The content of the letter generally describes the purpose of the research and why the activity is innovative or experimental, provides a description of the proposed activity, describes types and quantities of waste to be treated, estimates duration of operation, characterizes and residues or emissions expected from the process, and provides and performance data previously gathered on the operation.

Following the letter submittal, EPA will review the proposal, and if eligible to receive a permit, an application will be requested of the proponent. The level of detail required in the application will vary because

each proposal is unique. Established permit standards, as established in 40 CFR 270, may be used as a general guide by EPA in defining informational needs. Communication with EPA is imperative at this stage of the permitting process to ascertain what specific information will be required in the application, and subsequently incorporated in the permit language.

Following application submittal, EPA will review the application for completeness. Any deficiencies identified by EPA follow the same NOD procedure as a Part B permit application. When the application is deemed to be complete, EPA will issue a draft permit for public review and comment. The public review and comment period for an RD&D permit is the same as that required of a Part B permit. Construction cannot begin until the RD&D permit has been issued (procuring materials, manufacture, and assembly of portable units can be done before approval of the RD&D).

4.2 ANALYSIS OF ALTERNATIVES

Various avenues may be evaluated in an effort to support the melter testing and the HLWVP. The alternatives open for consideration are discussed below. The probability of success (high, medium, low) will follow each listed alternative.

Laboratory and Bench-scale Melter Testing Using Pretreated Radioactive Mixed Waste

1. As long as samples utilized for melter testing are below the quantities specified in WAC 173-303-071 for treatability studies, Ecology is notified forty-five days in advance that treatability studies will be taking place. No other permitting is required. (High)
2. If samples utilized for melter testing are above the quantities specified in WAC 173-303-071 for treatability studies, an RD&D permit may be required. (Low)
3. If samples utilized for melter testing are above the quantities specified in WAC 173-303-071, prepare a Part A permit application and request expansion under interim status. (Low)

Design, Construction and Operation of the HLWVP

1. Negotiate with Ecology to eliminate the NOI. Revise the Part A permit application for the HWVP. Negotiate interim status for construction and final status for hot operation, similar to LLWVP. Prepare a Part B permit application for the HLWVP. (High)
2. Prepare and submit an NOI and revise the Part A permit application for the HWVP. Prepare a Part B permit application for the HLWVP. (Med)

4.3 UNCERTAINTIES

The following uncertainties will require resolution:

1. Permitting classification of the melter. The HWVP melter was considered a Miscellaneous Unit, subject to applicable standards from all other classifications, namely tank standards and incinerator standards. Depending on the final melter design the HLWVP melter will require a similar approach.
2. Interim Status for construction. If interim status is not granted for construction, final design and permitting will be required before construction can commence. This will impact the ability to fast track design and construction and will hamper clean up efforts. The probability is high that Ecology will grant interim status for construction, however it is an issue which must be negotiated with Ecology.
3. Acceptance of the glass waste form to meet dangerous waste requirements. The glass waste form could be demonstrated to achieve performance standards to provide relief from certain standards pertaining to LDR issues, along with possibly delisting as a dangerous waste. This could reduce or eliminate the canister storage building from the scope of RCRA.

4.4 PERMITTING STRATEGY SCHEDULE

It is assumed that the radioactive waste being utilized for the melter testing to confirm results of simulant testing will contain dangerous waste constituents. It is also assumed that the amounts of waste utilized for melter testing will be below the quantities specified in WAC 173-303-071 for treatability studies. Ecology will be notified forty-five days in advance that treatability studies will be taking place. Based on this assumption, no other RCRA permitting will be required for the melter testing.

For design, construction and operation of the HLWVP, it is expected that an agreement will be negotiated with Ecology, waiving the requirement to prepare an NOI because of adequate public involvement with the Tri-Party Agreement. The Part A permit application for the HWVP will be modified. Preparation will take approximately 5 months. A new Part B permit application will be prepared. This will take approximately 14 months through the first certification cycle, and total duration may last approximately 6 years.

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5.0 THE CLEAN AIR ACT

The Federal Clean Air Act (CAA), 42 U.S.C. 7401 et seq. was enacted in 1970, amended in 1977, and overhauled and expanded in 1990.

5.1 INTRODUCTION

The melter testing, design, construction and operation of the HLWVP will require several permits and approvals prior to construction of the facility, and treatment and disposal of the influent waste stream. These permits and approvals will be issued by several regulatory agencies, including the EPA, Ecology, and the DOH. See Appendix A for the HLWVP schedule.

Permitting and emission standards administered by these agencies are contained in the following regulations:

- NESHAPs (40 Code of Federal Regulations [CFR] 61 Subpart H)
- Prevention of Significant Deterioration (PSD) standards (40 CFR 52.21) and (WAC 173-400)
- New Source Performance Standards (WAC 173-400-110)
- Ambient Air Quality Standards for Radionuclides (WAC 173-480)
- Radiation Protection - Air Emissions (WAC 246-247)
- Controls for New Sources of Toxic Air Pollutants (TAPs) (WAC 173-460).
- Operating Permit Regulation (WAC 173-401).

Radioactive Emissions

Radioactive air emissions are currently regulated by both the EPA, pursuant to 40 CFR 61 Subpart H, and the DOH, pursuant to WAC 246-247. Both regulations require preconstruction approval from the respective agencies. Additionally, the DOH requires descriptive information on the technologies chosen to control radioactive air emissions, including an assessment of all known control technologies. This assessment, referred to as a Best Available Radionuclide Control Technology (BARCT) assessment, evaluates the universe of currently available and economically achievable control technologies. For the HLWVP, the project must install the "Best" technology, as determined by the BARCT assessment. The EPA also requires the sampling and monitoring system to meet specific criteria. This criteria, including requirements on the placement and number of sample probes, is applicable if the estimated dose equivalent from the facility to the maximally exposed offsite individual is greater than 0.1 mrem per year assuming no emissions control equipment is in place but operations are otherwise routine.

WAC 246-247 requires varying degrees of information dependent on the quantity of emissions. It is expected that the HLWVP will require a minimum amount of information for obtaining the radioactive samples utilized to confirm simulant results for the melter testing. It is anticipated that the highest level of information will be required for the HLWVP WAC 246-247 application, and preconstruction approval will be required under the NESHAPs regulations.

Prior to starting the BARCT assessment, extensive information on the processes and expected emissions from those processes must be developed. This information is required to perform an adequate BARCT assessment.

Information not normally available until definitive design (particularly concerning sampling equipment and expected emissions) is crucial to the preparation of the permit applications.

Criteria Pollutants

Criteria pollutants are those pollutants subject to the PSD program, enforced in the State of Washington by Ecology and regulated pursuant to WAC 173-400. Ecology has incorporated by reference most of the Federal PSD requirements. If any Criteria pollutant approaches its trigger level, the information required by the PSD process might be included in the application to Ecology. Ecology refers to this air permit application as a Notice of Construction (NOC).

Toxic Air Pollutants

TAPs are a separate class of emissions, regulated pursuant to WAC 173-460 by Ecology. Over 500 carcinogenic and toxic pollutants are included in this regulation. TAPs emissions will occur during both the melter testing and operation of the HLWVP, so the applicability of WAC 173-460 will be assumed. Just as WAC 246-247 requires installation of BARCT, the TAPs regulations require the installation of Best Available Control Technology for Toxics (T-BACT). Additionally, if emissions of pollutants (after controls) exceed the small quantity emission (SQE) rates included in the regulations, dispersion modeling must be performed to demonstrate that the offsite concentration of each pollutant of concern does not exceed the Acceptable Source Impact Levels under WAC 173-460. Some pollutants do not have SQE rates, and modeling may be required.

Miscellaneous Ecology Regulations

Hazardous Air Pollutant (HAP) Requirements

The WAC 173-400-075 provides requirements for sources emitting hazardous air pollutants (in addition to radionuclides). By the time the HLWVP is constructed, a considerable number of additional HAPs may have NESHAPs assigned to them. These additional HAPs will need to be considered for applicability to HLWVP operations.

Special Requirements For Attainment or Unclassifiable Areas

Special requirements are specified by Ecology for sources located in attainment or unclassifiable areas. The Hanford Site is located in such an area. The WAC 173-400-113 specifies specific ambient impact limits for several pollutants from new sources in such areas. For example, the NO₂ annual average limit "at any location within an attainment area" is not to exceed 1.0 microgram/cubic meter; carbon monoxide is not to exceed 2 milligrams/cubic meter over any 1-hour average, etc.

Process Unit Requirements

General process units (defined in WAC 173-400-030 [32] as an emission unit using a procedure or a combination of procedures for the purpose of causing a change in material by either chemical or physical means, excluding combustion) are required in WAC 173-400-060 to maintain particulate emissions below 0.23 grams per dry cubic meter at standard conditions (0.1 grain/dscf). Concrete batch plants or other associated processes, employed, used, etc., during construction or operation of the HLWVP would be subject to this limitation.

Air Operating Permit

The air operating permit program for the state of Washington was approved on November 9, 1994 and requires all major sources to have air operating permits for their facilities. These permits will address air emissions from all units that emit any of the criteria pollutants listed in the Federal Clean Air Act (e.g., NO_x, SO_x) or any of the 189 Hazardous Air Pollutants listed in the federal Clean Air Act (including radionuclides). The permit will establish emission limits and operational restrictions for the Hanford Site and all operational units located on the Site. If a unit is proposed for operation after the permit is issued by the state, an NOC application can be submitted for approval of the activity and modification of the permit.

5.2 ANALYSIS OF ALTERNATIVES

Various avenues may be evaluated in an effort to support the air permitting for the melter testing and the HLWVP. Melter testing using pretreated radioactive samples and operation of the HLWVP may require submittal of all of the above listed applications. The length of the permitting process is dependant on the complexity of the activity, the adequacy of the detailed description submitted to the regulator and the current backlog of applications being reviewed by the regulators. The alternatives open for consideration are discussed below. The probability of success (high, medium, low) will follow each listed alternative. The permitting process can be shortened by providing the necessary information as soon as it is available. See Appendix A for the HLWVP permitting schedule.

1. Obtain WAC 246-247, 40 CFR 61 Subpart H (NESHAPs), WAC 173-400-110, WAC 173-460 (TAPs) approvals, update the air emissions inventory (AEI) for the Hanford Site emissions baseline, and revise the WAC 173-401 Air Operating Permit when all information necessary to complete the applications, is available. (High)

2. Obtain WAC 246-247, 40 CFR 61 Subpart H (NESHAPs), WAC 173-400-110, and WAC 173-460 (TAPs) approvals in a phased approach. The first phase would include obtaining approval for melter testing using pretreated radioactive samples. The next phase would include approval for the HLWVP. It is also possible that approval to begin construction of those buildings not directly related to the emission unit(s) could be pursued separate from the emission unit approvals. This might include such support facilities as office buildings. Due to the possible view of project segmentation by the regulator, this alternative may have a medium probability of success. (Med)

5.3 UNCERTAINTIES

Incinerator Standards

The HLWVP may fit within the category of an incinerator as defined in the WAC 173-400. If so, it will be subject to the WAC 173-400-050, "Emission Standards for combustion and incineration units."

There are also New Source Performance Standards (NSPS) for Incinerators in Subpart E of the 40 CFR 60 (also referenced for compliance by WAC 173-400-115).

Bubble Option

There may be an option to utilize the allowance specified, called out, discussed, etc. under WAC 173-400-120 to apply for authorization of a "bubble." A bubble means a set of emission limits which allows an increase in emissions from a given emission unit(s) in exchange for a decrease in emissions from another emission unit(s), pursuant to RCW 70.94.155 and WAC 173-400-120. By documenting the decrease in emissions due to shutdown of the old boiler units from the steam plants in the 200 East Area, considerable latitude to install the new HLWVP without NOC approval could be available through this bubble approach. One potential complication: Ecology will not authorize a bubble in a clean air ("attainment") area such as Hanford unless EPA has formally recognized attainment for each pollutant involved. EPA has not done so. EPA would need to be petitioned to formally issue such recognition, and publish such recognition in the Federal Register. If the existing steam plants are shut down and a new baseline established utilizing package boilers by the time the HLWVP is ready to begin operation, the Hanford Site would not be recognized as a major source for NOx, therefore, PSD would not be applicable. This statement is based on the assumption that the emissions for NOx from the package boilers and other NOx sources onsite (eg., Low Level Waste Vitrifaction Plant), added to the NOx emissions from the HLWVP do not exceed 250 tons per year or more of any air pollutant subject to regulation in accordance with 40 CFR 52.21.

Emission Reduction Credits

The WAC 173-400-131 and -136 allow Ecology to issue Emission Reduction Credits (ERC). The credits must be applied for prior to or within 180 days after the ERC has been accomplished, and are based upon the reduction of emissions, expressed as weight of contaminant per unit time, for each unit. The credits can then be used for a period of up to 10 years to offset other increased emissions, or be sold to other new or expanding industries locating in the area. The relative value of the credits may be questionable in light of the reduced demand for emission allowances in the Tri-Cities/Hanford locale over the next ten years.

Air Operating Permit - Title I Modification

There is some uncertainty at this time regarding the definition of a "Title I modification" which would require reopening of the Air Operating Permit to include a public review period prior to approval of the application and start of construction of the HLWVP.

5.4 PERMITTING STRATEGY SCHEDULE

The phased approach is the recommended strategy. It has been assigned a medium probability of success due to the possibility that it could be viewed as "project segmentation" by the regulatory agencies. Despite this possibility, the savings in time is worth the risk. This risk can be greatly minimized by negotiating a written agreement early in the permitting process with the regulatory agencies, including a definition of "start of construction."

It is assumed that an application for approval to construct will be submitted for WAC 246-247, 40 CFR 61 Subpart H (NESHAPs), WAC 173-400-110 (NSR) and WAC 173-460 (TAPS). The WAC 246-247 and NESHAPS approvals could take from one to two years to complete. The TAPS approval could take from one to three years to complete. These generic timelines are based on adequate information being available at the time the permit applications are being prepared.

It is assumed that PSD will not be applicable for any of the criteria pollutants under the PSD program due to a projected decrease in emissions of criteria pollutants from the Hanford Site. (i.e., total Site emissions of less than 250 tons per year). If the Hanford Site is not considered a major source under PSD, then PSD will not be applicable. This assumption is based on shutdown of the steamplants at the Hanford Site. We believe that this assumption is valid even though it is expected that the Low Level Waste Vittrification plant will be generating criteria pollutants prior to operation of the HLWVP.

Installation of BARCT will be required by WAC 246-247 and T-BACT will be required by the TAPS program.

At this time it has to be assumed that the definition of Title I modification would be applicable for this activity, requiring public review and possibly opening of the Air Operating Permit. This process could take from one to two years to complete.

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6.0 THE CLEAN WATER ACT

The Federal Water Pollution Control Act, Public Law 92-500, 33 USC 1251-1376, 86 Stat 816, was enacted in 1972. The Federal Clean Water Act (CWA), 33 U.S.C. 1241 et seq. was amended in 1977.

6.1 INTRODUCTION

The melter testing, design, construction and operation of the HLWVP will require several permits and approvals prior to construction of the facility, and treatment and disposal of the influent waste stream. These permits and approvals may be issued by several regulatory agencies, including Ecology, the EPA, and the DOH, See Appendix A for the HLWVP schedule.

Permitting and emission standards administered by these agencies are contained in the following regulations:

- State Waste Discharge Permit Program - State of Washington Department of Ecology - WAC 173-216
- Underground Injection Control Program - State of Washington Department of Ecology - WAC 173-218
- Public Water Supplies - State of Washington Department of Health - WAC 246-290

State Waste Discharge Permit Program

Treatment and disposal of wastewater to be discharged to the groundwater from the HLWVP would be regulated in accordance with WAC 173-216. A State Waste Discharge Permit (SWDP) would be required from Ecology before waste materials from industrial, commercial, and municipal operations are discharged into ground and surface waters of the state and into municipal sewerage systems.

Before construction or modification of those domestic or industrial wastewater facilities requiring Ecology wastewater discharge permits, engineering reports, plans, and specifications for the project must be submitted to and approved by Ecology. Operation and maintenance manuals must be submitted before construction is completed.

Underground Injection Control Program

Disposal of fluids injected through wells is regulated in accordance WAC 173-218. Authorization by Ecology of fluids injected through wells has been restricted to wells operational before February 29, 1984. New discharges of uncontaminated storm water and groundwater return flow, unaltered except for temperature from a ground water heat pump used for heating or cooling, are the only discharges that are not prohibited. These discharges must be registered with Ecology before construction. This requirement applies only to stormwater discharges from the HLWVP that are designed to be discharged to

shaft, or dug hole whose depth is greater than the largest surface dimension. If the discharge is a waste fluid, WAC 173-218 defers to WAC 173-216 requirements for obtaining a SWDP.

Public Water Supplies

The regulatory requirements defined in WAC 246-290 are designed to protect the health of consumers using public drinking water supplies. The responsible regulatory agency is the State of Washington Department of Health. The Hanford Site water purveyor is responsible for assuring that the requirements of this chapter are met. Approval of engineering reports, plans, and specifications for a drinking water supply system is required before construction.

6.2 ANALYSIS OF ALTERNATIVES

Various avenues may be evaluated in an effort to support the water permitting for the HLWVP. The alternatives open for consideration are discussed below. The probability of success (high, medium, low) will follow each listed alternative. The permitting process can be shortened by providing the necessary information as soon as it is available. See Appendix A for the HLWVP permitting schedule.

1. The existing WAC 173-216 permits for the 200 Area TEDF and/or the 200 Area Effluent Treatment Facility for treatment and disposal of industrial wastewater discharges would be modified. Injection wells would be installed for stormwater collection. The existing water supply lines within the 200 Areas would be extended to supply raw water for industrial uses such as cooling and fire protection. The existing potable water treatment system would be used and existing potable water lines in the 200 Area would be extended to supply drinking water for the HLWVP. (High)
2. Prepare a new WAC 173-216 permit for transfer to a new disposal site located adjacent to the HLWVP. Extend existing raw water lines in the 200 Area to the HLWVP site. Install a packaged water treatment plant at the site. (Low)

6.3 UNCERTAINTIES

It is possible that the 200 Area ETF could be in standby mode when the HLWVP is scheduled to be operational. It will be important to interface closely with the ETF facility to assure that all required steps necessary to provide feed to the ETF be completed so that there is no delay in start of operation.

6.4 PERMITTING STRATEGY SCHEDULE

The schedule permitting strategy is to modify both the 200 Area TEF and 200 Area ETF WAC 173-216 SWDPs to accept the discharges from the HLWVP. Approximately one year will be required to modify the permits. A wastewater stream characterization must be performed in accordance with the "Acceptance of Feed Streams for Storage and Treatment at the LERF/ETF Complex," document number WHC-SD-ERF-WAC-001, for the 200 Area ETF. Both analytical data and engineering calculations will be required to complete the wastewater stream characterization. Waste stream constituents and their concentrations will have to be within the known envelope of the ETF's treatment capability. Interface with the 200 Area ETF should begin early in the design process. Existing raw and potable water lines in the 200 Area will be extended to the HLWVP site.

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7.0 SANITARY WASTEWATER PERMITTING

The domestic wastewater generated at the HLWVP will either be discharged to the proposed 200 Area Sanitary Sewer System or disposed in a permitted septic system. Although domestic wastewater from the HLWVP is planned to be discharged to the 200 Area Sanitary Sewer System, it may be necessary to provide interim domestic wastewater disposal. The permitting requirements for septic systems with a design capacity of less than 14,500 gallons per day are found in WAC 246-272.

7.1 INTRODUCTION

The regulations require that plans and specifications for the sanitary sewer system are submitted to DOH for approval before construction. After installation, a professional engineer registered in the State of Washington must certify that the sewer system has been installed in accordance with the plans and specifications approved by DOH. In addition an operation and maintenance manual must be submitted to DOH.

7.2 ANALYSIS OF ALTERNATIVES

There are three basic alternatives for the HLWVP sanitary wastewater system. See Appendix A for the HLWVP project schedule. The alternatives and probability of success include;

- Construction of a new septic system sized to accommodate the facilities supporting the HLWVP. (High)
- Tying into an existing sanitary wastewater system, if one is close by and if there is additional permitted capacity. (Med)
- Providing piping to tie into the collection system supporting the 200 Area Sanitary Waste Water System, if constructed. This project is currently in the developmental stage and has not been validated yet. (Med)

7.3 UNCERTAINTIES

Funding for the 200 Area Sanitary Sewer System is not certain at this time. It may be necessary to construct a dedicated sanitary sewer system for the HLWVP.

7.4 PERMITTING STRATEGY SCHEDULE

The alternative for disposal of sanitary wastewater for the HLWVP with the highest probability of success is to construct a new system sized at less than 14,500 gallons per day. The reason for this is due to the uncertainty of funding for the 200 Area Sanitary Sewer System. The permitting process will take approximately six months. The decision on whether to construct the 200 Area Sanitary Wastewater System should have been made by the time the Title II design is ready to begin.

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8.0 MISCELLANEOUS ASSESSMENTS, PERMITS, AND APPROVALS

In addition to the major regulatory programs discussed in this permitting plan, several miscellaneous assessments, permits, and approvals need to be addressed.

8.1 CULTURAL RESOURCE REVIEW

A Cultural Resource Review shall be performed prior to initiating the any potential surface disturbing activities onsite (36 CFR 800). The regulatory agency is RL. This review takes approximately three months to complete.

8.2 EXCAVATION PERMIT

An excavation permit is required prior to initiating any potential surface disturbing activities onsite (36 CFR 800). The regulatory agency is RL. This permit will be prepared prior to construction which includes surface disturbance. The project should allow one week to obtain each excavation permit.

8.3 ENDANGERED SPECIES ACT COMPLIANCE

A site assessment should be made to determine whether any planned activities have the potential to disturb any habitat used by wildlife prior to construction or habitat modification (50 CFR 402). The regulatory agency is the Fish and Wildlife Service. For onsite construction, a biological survey is performed by WHC. The survey report must be completed prior to start of construction activities and takes approximately two months to complete.

8.4 PREOPERATION MONITORING OF FACILITIES, SITES, AND OPERATIONS

An environmental study must be conducted prior to start up of a new site, facility, or process which has the potential for significant adverse environmental impact (DOE Order 5400.1). The regulatory agency is RL. This monitoring shall be started at least one year prior to startup of the HLWVP.

8.5 STORM WATER DISCHARGE UNDER EPA NPDES GENERAL PERMIT (57 Federal Register 175, September 9, 1992)

The Hanford Site is covered under two storm water permits. Permit WA-R-00-000F covers storm water runoff for the Hanford Site as a whole. Permit WA-R-10-000F covers storm water runoff from construction projects. If there is a potential for storm water to reach the river from construction activities, an NOI for authorization under the EPA general permit and a Storm Water Pollution Prevention Plan must be in place at least two days before discharge from new construction sites (those begun after October 1, 1992).

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9.0 REFERENCES

CODE OF FEDERAL REGULATIONS

- 36 CFR 800, "Protection of Historical and Cultural Properties," *Code of Federal Regulations*, as amended.
- 40 CFR 52.21, "Prevention of Significant Deterioration Standards," *Code of Federal Regulations*.
- 40 CFR 60, "Standards of Performance for New Stationary Sources," *Code of Federal Regulations*.
- 40 CFR 61, "National Emission Standards for Hazardous Air Pollutants," *Code of Federal Regulations*.
- 40 CFR 270, "EPA Administered Permit Programs: The Hazardous Waste Permit Program," *Code of Federal Regulations*.
- 50 CFR 402, "Interagency Cooperation - Endangered Species Act," *Code of Federal Regulations*, as amended.

FEDERAL REGISTER

- 57 FR 175, "Storm Water Discharge Under EPA NPDES General Permit," *Federal Register*, September 9, 1992.

PUBLIC LAW

- PL 92-500, *The Federal Water Pollution Control Act*, Public Law.

REVISED CODE OF WASHINGTON

- RCW 43.21C, "State Environmental Policy," *Revised Code of Washington*, as amended.
- RCW 70.94, "Washington Clean Air Act," *Revised Code of Washington*.

UNITED STATES CODE

- 42 USC 4321, "National Environmental Policy Act," *United States Code*, as amended.
- 42 USC 6901, "Resource Conservation and Recovery Act," *United States Code*, as amended.
- 42 USC 7401, "Clean Air Act," *United States Code*.
- 33 USC 1251-1376, "Clean Water Act," *United States Code*.
- 33 USC 1241, "Federal Clean Water Act," *United States Code*, as amended.

WASHINGTON ADMINISTRATIVE CODE

- WAC 197-11, "State Environmental Policy Act Rules," *Washington Administrative Code*, as amended.
- WAC 173-216, "State Waste Discharge Permit Program," *Washington Administrative Code*, as amended.
- WAC 173-218, "Underground Injection Control Program," *Washington Administrative Code*, as amended.
- WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.
- WAC 173-400, "General Regulations for Air Pollution Sources," *Washington Administrative Code*, as amended.
- WAC 173-401, "Operating Permit Regulation," *Washington Administrative Code*, as amended.
- WAC 173-460, "Controls for New Sources of Toxic Air Pollutants," *Washington Administrative Code*, as amended.
- WAC 173-480, "Ambient Air Quality Standards and Emissions Limits for Radionuclides," *Washington Administrative Code*, as amended.
- WAC 246-247, "Radiation Protection - Air Emissions," *Washington Administrative Code*, as amended.
- WAC 246-272, "On-Site Sewage Systems," *Washington Administrative Code*, as amended.
- WAC 246-290, "Public Water Supplies," *Washington Administrative Code*, as amended.

STATE PERMITS

- Ecology, 1994, *Hanford Facility Dangerous Waste Permit*, WA7890008967, Washington State Department of Ecology, Olympia, Washington.
- Ecology, 1995a, *State Waste Discharge Permit For the Effluent Treatment Facility*, No. ST 4500, Washington State Department of Ecology, Olympia, Washington.
- Ecology, 1995b, *State Waste Discharge Permit For the 200 Area Treated Effluent Disposal Facility*, ST 4502, Washington State Department of Ecology, Olympia, Washington.

WESTINGHOUSE HANFORD COMPANY ACCEPTANCE CRITERIA

McDonald, F. N., *Acceptance of Feed Streams for Treatment at the LERF/ETF Complex*, WHC-SD-ETF-WAC-001, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

Powell, R. W., *High Level Waste Vitrification Program Definition and Implementation Strategy*, WHC-IP-1061, Rev. 1.

DOE ORDER

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

APPENDIX A
HIGH LEVEL WASTE VITRIFICATION
PLANT SCHEDULE

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Figure A-1. High Level Waste Vitrification Plant Schedule. (sheet 1 of 7)

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Figure A-1. High Level Waste Vittrification Plant Schedule. (sheet 2 of 7)

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Figure A-1. High Level Waste Vittrification Plant Schedule. (sheet 3 of 7)

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Figure A-1. High Level Waste Vitrification Plant Schedule. (sheet 4 of 7)

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Figure A-1. High Level Waste Vitrification Plant Schedule. (sheet 5 of 7)

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Figure A-1. High Level Waste Vitrification Plant Schedule. (sheet 6 of 7)

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Figure A-1. High Level Waste Vitrification Plant Schedule. (Sheet 7 of 7)

Sheet 7 of 7

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APPENDIX B

LIST OF POTENTIALLY APPLICABLE PERMITS AND APPROVALS
FOR THE HIGH LEVEL WASTE VITRIFICATION PLANT

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Figure B-1. List of Potentially App Permits and Approvals. (sheet 1 of 2)

LIST OF POTENTIALLY APPLICABLE PERMITS AND APPROVALS FOR THE HIGH LEVEL WASTE VITRIFICATION PLANT

Environmental media	Permit, approval, or requirement	Regulation	Regulatory agency	Restriction	Approximate time to Obtain
NEPA	NEPA documentation (TWRS EIS)	10 CFR 1021	DOE	Title II design (projects), procurement	2 yrs
SEPA	SEPA documentation	WAC 197-11	State agency	Checklist	1-2 mos
Air Emissions	WESHAPS	40 CFR 61, Subpart H	EPA	Construction, operation, procurement, modification, emissions measurement, emissions reporting	1 1/2 yrs
	Radiation Protection - Air Emissions	WAC 246-247	DOH	Construction, operation, procurement, modification, emissions measurement, emissions reporting	
	NOC	WAC 173-400 WAC 173-460	Ecology	Construction, operation, procurement, modification, emissions measurement, emissions reporting	
	PSD	WAC 173-400	Ecology	Construction	
	PM-10 / dust	WAC 173-400	Ecology	Construction, operation, procurement, modification, emissions measurement, emissions reporting	
	Ozone-depleting substances	40 CFR 82	EPA	Servicing, using, or disposing of ODS	
	Air Operating Permit	WAC 173-401	Ecology	Operation, emissions measurement, emissions reporting	
Soil Column Wastewater Disposal	SWDP	WAC 173-216	Ecology	Construction, operation	6 mos-1 yr
	Approval of engineering report, plans and specs., and O&M Manual	WAC 173-240	Ecology	Construction	

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Figure B-2. List of Potentially App Permits and Approvals. (sheet 2 of 2)

Environmental media	Permit, approval, or requirement	Regulation	Regulatory agency	Restriction	Approximate time to obtain
Domestic wastewater disposal	UIC Permit/Registration	WAC 173-218	Ecology	Operation	
	Septic systems <54,888-L/day (<14,500-gal/day) capacity design approval	WAC 246-272	DOH	Construction, operation	6 mos-1 yr
	Septic systems >54,888-L/day (>14,500-gal/day) capacity design approval	WAC 173-216	Ecology	Construction, operation	
	Discharge standards	WAC 173-221	Ecology	Discharge	
Drinking Water Supply	Approval of engr. rpt., plans, and spec.	WAC 246-290	DOH	Construction	6 mos
Dangerous Waste	Notice of Intent	WAC 173-303-281	Ecology	Facility siting	150 days before Part A submitted
	Dangerous Waste Permit (RCRA Part A)	WAC 173-303 and 40 CFR 264, 265, 270	Ecology	Construction of new facilities or expansion of existing facilities	3 mos-1 yr
	Dangerous Waste Permit (RCRA Part B)	WAC 173-303 and 40 CFR 264, 265, 270	Ecology	Operation of Hanford interim status facility or construction of non-interim status facility.	2-5 yrs
	Tank permit	WAC 173-360	Ecology	Operation	6 mos
Underground Storage Tanks	Cultural Resource Review Clearance	36 CFR 800	DOE	Potential surface disturbing activities	1-2 mos
	Excavation Permit	36 CFR 800	DOE	Excavation project	1-2 mos
	Endangered species approval	50 CFR 402.6	Fish and Wildlife Service	Construction habitat modification	< 6 mos
	Preoperation monitoring of facilities, sites, and operations	DOE Order 5400.1	DOE	Operation	1-2 yrs
	Radiation protection standards	DOE Order 5400.5	DOE	Construction	Ongoing
	Facility fire protection standards	DOE Order 5480.7A	DOE	Construction	Ongoing

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