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FINAL JOINT PERMIT

FOR DANGEROUS WASTE
RESEARCH, DEVELOPMENT
AND DEMONSTRATION
TREATMENT & STORAGE
FACILITY



ISSUED TO:

**U.S. DEPT OF ENERGY
OPERATIONS OFFICE**

AND

**WESTINGHOUSE
HANFORD COMPANY**

WA7 89000 8967



JOINTLY ISSUED BY:

**U.S.
ENVIRONMENTAL
PROTECTION
AGENCY**

AND

**WASHINGTON
DEPARTMENT OF
ECOLOGY**

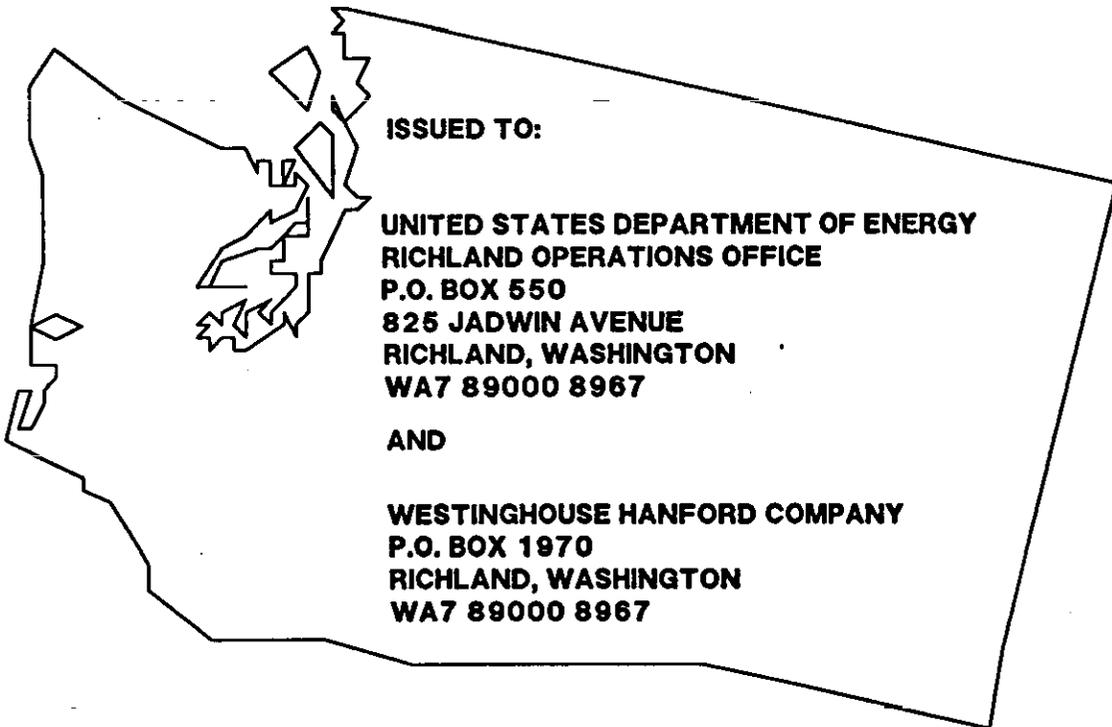
FINAL RD&D PERMIT ASSEMBLY INSTRUCTIONS

1. Replace existing Draft RD&D Permit cover page with the enclosed Final RD&D Permit cover page;
2. Replace the Draft RD&D Permit with the enclosed Final RD&D Permit pages;

- Pages 1 of 52 through 52 of 52

FINAL JOINT PERMIT

FOR DANGEROUS WASTE RESEARCH, DEVELOPMENT, & DEMONSTRATION
TREATMENT AND STORAGE FACILITY



JOINTLY ISSUED BY:

**U. S. ENVIRONMENTAL PROTECTION AGENCY
REGION 10**

AND

WASHINGTON STATE DEPARTMENT OF ECOLOGY

FINAL JOINT PERMIT

**FOR DANGEROUS WASTE
RESEARCH, DEVELOPMENT
AND DEMONSTRATION
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WASHINGTON STATE DEPARTMENT OF ECOLOGY
AND
U.S. ENVIRONMENTAL PROTECTION AGENCY

JOINT RESPONSIVENESS SUMMARY AND RESPONSE TO PUBLIC COMMENTS

ON

U.S. DEPARTMENT OF ENERGY
DRAFT HANFORD FACILITY WASTE WATER PILOT PLANT
RESEARCH, DEVELOPMENT AND DEMONSTRATION PERMIT

MAY 6, 1994

INTRODUCTION

The United States Environmental Protection Agency (EPA), Region 10 and the Washington State Department of Ecology (Ecology) are issuing the Hanford Facility Waste Water Pilot Plant Research, Development, and Demonstration Permit for the treatment, storage and disposal of hazardous and dangerous waste at the Hanford Federal Facility. EPA and Ecology received comments on the Draft Research, Development, and Demonstration Permit which was previously issued for public comment in October 1993. Based on these comments, EPA and Ecology have revised the draft permit.

This Responsiveness Summary and Response to Comments (RS/RTC) is being presented jointly by EPA and Ecology. The purpose of this RS/RTC is to present concerns and issues raised during the public comment period, and to provide responses and corresponding revisions to the draft RD&D permit.

PUBLIC PARTICIPATION ACTIVITIES

A public comment period was held from October 15, 1993 through November 29, 1993. A public meeting and hearing was held by EPA and Ecology on November 3, 1993, at the Columbia Basin Community College, 2525 N. 20th, Pasco, Washington. The meetings were attended by the public, representatives of EPA, Ecology, the United States Department of Energy (Energy), Westinghouse Hanford Company, and Pacific Northwest Laboratories.

COMMENTS RAISED AND EPA/ECOLOGY RESPONSE

EPA and Ecology received substantive written comments from the United States Department of Energy-Richland Operations Office, and from Mr. F. Robert Cook, Technical Analyst, Environmental Restoration/Waste Management Program (representing the Confederated Tribes and Bands of the Yakama Indian Nation), concerning the Draft Waste Water Pilot Plant Research, Development and Demonstration Permit. EPA and Ecology also considered comments received during the November 3, 1993 public hearing. These comments are paraphrased in the RS/RTC and have

been enumerated for subsequent reference. The full set of original comments is included in the Administrative Record for this draft RD&D permit, which is available for review at Hanford Public Information Repositories.

In addition to changes in response to comments, some minor changes and corrections to the draft RD&D permit have been made. These changes have resulted in a RD&D permit which EPA and Ecology believe is more enforceable and easier to understand. Energy proposed modified language for certain specific RD&D permit conditions and, where appropriate, EPA and Ecology accepted that language.

EPA and Ecology do not believe that the changes which were made to the draft RD&D permit were substantive enough to require a second public comment period for a revised draft RD&D permit. The changes meet the regulatory requirements and the revised language is as accurate and enforceable as the language contained in the draft RD&D permit. Therefore, the final RD&D permit is being issued concurrently with this responsiveness summary and response to comments.

This RD&D permit shall become effective 30 days after notification to interested parties of the final RD&D permit decision (40 CFR § 124.15). However, if a petition for review is filed in accordance with 40 CFR § 124.19, then the Administrator may stay the effectiveness of this permit under federal law. Similarly, if an appeal is filed in accordance with Chapter 43.21B RCW, then the Pollution Control Hearings Board or the Director may stay the effectiveness of the permit under state law. However, a stay issued pursuant to state law shall not affect the effectiveness of this permit under federal law. A petition for review or appeal must be filed within 30 days after receipt of the final RD&D permit decision.

A copy of the final permit, and any future modifications to the permit will be maintained at the EPA's Office in Seattle, Ecology's Office in Lacey, and will be provided to Energy's Richland Operations Office.

RESPONSIVENESS SUMMARY AND RESPONSE TO COMMENTS**COMMENTS BY UNITED STATES DEPARTMENT OF ENERGY - RICHLAND OPERATIONS OFFICE (DOE-RL)**

Comment #1: Draft Waste Water Pilot Plant RD&D Permit; Page 1.

The United States Department of Energy - Richland Operations Office (Energy) provided a specific comment on the Title Page of the RD&D Permit. Specifically, Energy recommended insertion of (Owner/Operator) in the 'ISSUED TO' section, after the United States Department of Energy on page 1 of the RD&D permit.

Response #1:

EPA and Ecology agree with this comment. The change improves the accuracy of the permit.

Permit Change:

The Draft RD&D Permit for the Waste Water Pilot Plant has been revised, on page one, to reflect that the United States Department of Energy-Richland Operations Office (Energy) is the owner and operator (Owner/Operator) of the Hanford Federal Facility.

Comment #2: INTRODUCTION. Page 3, paragraph 1, line 14.

Energy provided an editorial comment recommending that (owner and operator) be changed to (Owner/Operator) and to capitalize Co-operator.

Response #2:

EPA and Ecology agree with this comment.

Permit Change:

EPA and Ecology have revised the Introduction, on page 3, of the final RD&D permit to read Owner/Operator and Co-operator.

Comment #3 INTRODUCTION. Pages 4 and 5

Energy provided a comment regarding the discussion of Permit Challenge Procedures and Stays. Energy proposed that the following words be substituted for the last three sentences

of the last paragraph on page 4 of the draft RD&D permit regarding challenge procedures and stays:

"In the event a decision of the Department is challenged by the Department of Energy under the FFACO and/or by Westinghouse Hanford Company under WAC 173-303-845, the Department shall stay the decision as it pertains to the Permittees pending the resolution of the matter. Such a stay constitutes a 'stay by the issuing agency' within the meaning of RCW 43.21B.320(1). In the event of a challenge by any Permittee, as specified above, the decision of the Department shall be stayed as to all Permittees pending resolution of the challenge under the applicable procedure referenced above."

Energy stated "the procedures for challenges and stays in the Draft RD&D Permit are overly cumbersome and create situations wherein challenged permit conditions would be stayed as to one Permittee, but not the other. As the Permittees are managing the same facility and the same waste, the procedures make no practical sense."

Response #3:

EPA and Ecology disagree with this comment. The draft RD&D permit contained complicated provisions describing how the permittees could appeal or challenge the permit. The provisions were different for each of the two permittees since Energy, but not Westinghouse, is party to an agreement with EPA and Ecology, the Federal Facility Agreement and Consent Order (FFACO), that allowed Energy to invoke a dispute resolution process if it was dissatisfied with a permit issued by the two regulatory agencies. Energy had the right to use this process before bringing other administrative appeals. Westinghouse, on the other hand, had only those appeal rights provided by law.

Since the draft RD&D permit was issued, Energy, EPA, and Ecology have amended the FFACO. It now expressly provides that its dispute resolution procedures do not apply to RCRA permit actions that are otherwise subject to administrative or judicial appeal. This permit may be appealed, both at the state and federal levels. Consequently, Energy may not invoke dispute resolution if it objects to any terms of this permit.

For this reason, the permit language describing Energy's rights regarding dispute resolution under the FFACO, as well as the effect Energy's exercise of these rights would have

on the permit issued to Westinghouse, have been deleted from the final permit.

Permit Change:

The RD&D permit language describing Energy's rights regarding dispute resolution under the FFACO, as well as the effect Energy's exercise of these rights would have on the permit issued to Westinghouse, have been deleted from the introduction of the final permit.

Comment #4 . LIST OF ATTACHMENTS, Page 6, paragraph 1

Energy provided a comment to change the word documents to documentation since the attachment excerpts are for the most part portions of a document. Energy considers that the word documentation is more appropriate.

Response #4:

EPA and Ecology agree with this comment since the attachments include only portions of the documents and not entire documents. This is consistent with the "List of Attachments", on pages six through eleven of the draft RD&D permit.

Permit Change:

EPA and Ecology have revised the word documents, on page 6, to read documentation.

Comment #5: LIST OF ATTACHMENTS, Pages 6 through 11

Energy proposed to substitute the following text regarding the inclusion of the RD&D permit application in the RD&D permit:

"The Permittees' Waste Water Pilot Plant Research, Development and Demonstration Permit Application is attached in its entirety. However, only those Excerpts from the permit application listed below are incorporated into the Permit. Also, information included in the Excerpts which is referred to as illustrative or for information purposes is not incorporated into this Permit. The Department and the Agency have, as deemed necessary, modified specific language in the Excerpts. These modifications are described in the Permit conditions (Parts I. through V.), and thereby supersede the language of the original Excerpt. These incorporated Excerpts are enforceable conditions of this Permit, as modified by the specific Permit condition."

Energy also commented that on pages 6 through 11, the titles of the Attachment 1 through 11 should be changed to Excerpts 1 through 11. Energy also commented that for consistency the word Attachment should be changed to Excerpt throughout the entire document.

Energy stated "Because portions of the attachments to the Draft RD&D Permit have been removed, the resultant text lacks the flow and continuity of the original permit application. Inclusion of the entire permit application for 'Information Only' would serve to provide this continuity. The change will provide consistency with the current approach used in the Draft Hanford Facility RCRA Permit."

Response #5:

EPA and Ecology disagree that the entire Research, Development and Demonstration Permit Application needs to be attached to the RD&D permit and information "excerpted". In attachments 1 through 11, EPA has listed specific portions of the Permittees' Waste Water Pilot Plant Research, Development and Demonstration Permit Application submitted to EPA and Ecology on October 31, 1991, and as last revised on April 22, 1992 and March 19, 1993. The incorporated Attachments are enforceable conditions of the RD&D permit, as modified by the specific permit condition.

Permit Change:

No permit change is required in response to this comment.

Comment # 6: DEFINITIONS, Page 12.

Energy provided a comment regarding the definition of mixed waste and proposed that the following definition be added:

"'Mixed Waste' is waste containing hazardous or dangerous components, regulated under the Resource Conservation and Recovery Act and the Washington State Hazardous Waste Management Act, respectively; and containing radioactive components regulated under the Atomic Energy Act of 1954, as amended."

Energy also stated "the term is used in Attachment 1 which is incorporated, in its entirety, by reference into the Draft RD&D Permit. The term is also used in the Fact Sheet and defined there (parenthetically) inaccurately in two instances on page 3. The definition proposed is consistent with the definition in Article V., Paragraph 21.s. of the FFACO."

Response #6

EPA and Ecology agree with this comment that a definition of mixed waste should be added to the definitions section on page twelve of the draft RD&D Permit. The definition clarifies the regulation of mixed waste and is consistent with the recently enacted Federal Facility Compliance Act, Public Law 102-386 (October 6, 1992), and the definition of mixed waste cited in WAC 173-303-040.

Permit Change:

EPA and Ecology have revised the definitions to include the following definition of "Mixed Waste" in the list of definitions on pages 12 and 13 of the RD&D permit:

"The term "Mixed Waste" shall mean solid waste containing both hazardous or dangerous constituents, regulated under the Resource Conservation and Recovery Act, as amended, and radioactive constituents consisting of source, special nuclear, or byproduct material regulated under the Atomic Energy Act of 1954, as amended."

Comment # 7 Draft RD&D Permit Condition I.E.2, Page 15.

Energy provided a comment on this draft permit condition regarding the identification of Westinghouse as a Permittee and proposed to delete the last sentence and substitute:

"The Westinghouse Hanford Company is identified as a Permittee for any and all activities subject to the conditions of this Permit where its agents, employees or subcontractors have operational and/or management responsibilities and control.

The language in the Draft RD&D Permit is so broad that it fails in its purpose to distinguish the responsibilities of the DOE-RL and the Westinghouse Hanford Company. The draft condition could be read to inaccurately portray the Westinghouse Hanford Company as having total operational responsibility for the RD&D Activity. In addition, the draft condition purports to hold the Westinghouse Hanford Company responsible for other unspecified activities beyond the operation of the RD&D Activity.

In 40 CFR 260.10 and WAC 173-303-040, 'operator' is defined as the person responsible for the overall operation of a facility. The Westinghouse Hanford Company is not responsible for the overall operation of the RD&D Activity. The DOE-RL, the Agency, and the Department have previously

agreed in the FFACO that DOE-RL owns and operates the Hanford Facility. The definition of 'Permittees' in the Draft RD&D Permit (page 13, subparagraph 1) recognizes this fact. The Westinghouse Hanford Company has more limited and specific roles under its contract with the DOE-RL and may not be identified as responsible for all activities at the RD&D Activity."

Energy also stated "the substitute language would hold the Westinghouse Hanford Company responsible for all activities within its span of control which are subject to the scope of the permit. Together with the first sentence of Condition I.E.2, the substitute language more accurately distinguishes the responsibilities of the permittees."

Response #7:

The EPA and Ecology disagree with this comment. The draft RD&D permit definition of Permittee is not overly conservative since it applies only to those RD&D activities conducted at the 1706-KE Facility and the Liquid Effluent Retention Facility (LERF). The RD&D Permit, as specified in draft RD&D permit condition I.A., applies only to the Permittees' RD&D Activities conducted under the RD&D Permit at the 1706-KE Facility and the LERF. With respect to the limited effect of the RD&D permit, EPA and Ecology, consistent with the Tri-Party Agreement, the Hanford Facility RCRA permit, and EPA national guidance, will hold all Permittees responsible for compliance with the terms and conditions of the RD&D permit. The identification of Permittees and their denomination as either "owner/operator" or "co-operator" is consistent with the draft Hanford Facility RCRA permit.

Permit Change:

No permit change is required in response to this comment.

Comment # 8. Draft RD&D Permit Condition II.C.2., Page 23.

Energy provided a comment on the definition of "test" in that "the exact meaning of the term 'test' as used in this draft condition needs to be defined. This Draft RD&D Permit condition requires 30-day prior notification of details for each test to be performed. Without additional definition, 'test' could be construed to be each analytical procedure undertaken, and as such, be overly restrictive to the RD&D operations."

Energy proposed that the following definition be added on page 13:

"A test is defined as a series of operations having a stated overall purpose employed to resolve uncertainties. A test is described by a plan which details a series of steps, procedures, or analyses required to obtain the overall purpose."

Response #8:

EPA and Ecology agree that a definition of test is needed. RD&D permit condition II.C.2 requires submittal of the test details by the Permittee of the RD&D activity to be conducted at 1706-KE and the LERF. The definition proposed by Energy is acceptable to EPA and Ecology.

Permit Change:

The following definition of "test" has been added to the definitions section of the draft RD&D permit:

The term "Test" shall mean a series of operations having a stated overall purpose employed to resolve uncertainties. A test is described by a plan which details a series of steps, procedures, or analyses required to obtain the overall purpose.

Comment #9 Draft RD&D Permit Condition II.L, Page 29.

Energy provided a comment regarding the management of ignitable or reactive waste in the 1706-KE Laboratory, "Relative to the anticipated laboratory and analytical procedures to be used in the 1706-KE Laboratory, this draft condition is overly restrictive to laboratory operations (i.e., waste generation and storage). The laboratory may generate ignitable or reactive waste in the course of testing waste water."

Energy proposed to change the word "manage" to "receive" in the first line of this draft condition.

Response #9

EPA and Ecology disagree that the draft RD&D permit condition II.L. is overly restrictive. The scope of the draft RD&D permit does not govern the generation, storage or accumulation of waste as a result of laboratory performance of analytical testing. This activity would be covered under the sample exclusion under 40 CFR § 261.4(d) and WAC 173-303-071(3)(1), and hazardous waste/dangerous waste accumulation under 40 CFR § 262.34 and WAC 173-303-200, as appropriate.

Permit Change:

There is no permit change required to address this comment.

Comment #10 Draft RD&D Permit Condition IV.C.2.a. Page 36.

Energy provided a comment regarding the regulatory citation in the last sentence of draft condition IV.C.2.a to change "WAC 172-" to read "WAC 173-."

Response #10:

EPA and Ecology agree with this comment.

Permit Change:

The RD&D Permit Condition has been changed to read WAC 173 to provide the correct regulatory citation.

Comment #11. Draft RD&D Permit Condition IV.C.5., Page 37.

Energy provided a comment on this Draft RD&D Permit Condition regarding the visual inspection. Energy recommended that this draft permit be rewritten to state that the visual inspection may be performed using remote video and/or photographic equipment to address an As Low As Reasonably Achievable (ALARA) concern.

Response #11:

EPA and Ecology agree with the comment that there may be an ALARA concern with the inspection of the Double Shell Tanks every three years from the date of installation. EPA and Ecology have clarified that the visual inspection may be performed using remote video and/or photographic equipment.

Permit Change:

EPA and Ecology have added the following statement to RD&D permit condition IV.C.5 after the first sentence: "The visual inspection of the Double Shell Tanks may be performed using remote video and/or photographic equipment."

Comment #12. Draft RD&D Permit Condition IV.D.2.a.ii, Page 38

Energy provided a comment that in line 11 of this draft condition, "Alarm set point and response" be added between the words "subheading" and "immediately" to clarify the permit condition.

Response #12:

EPA and Ecology agree with this comment that clarification of this draft RD&D permit condition is required.

Permit Change:

The RD&D permit condition IV.D.2.a.ii has been changed to read, subheading "Alarm Set Point and Response" add "immediately..."

Comment #13. Draft RD&D Permit Condition IV.D.2.c., Page 38

Energy provided a comment that this draft RD&D permit condition directs changes to be made to Figure F4-2. This condition also needs to direct that the same changes be made to Attachment 4, Appendix 4C.

Response #13:

EPA and Ecology agree with this comment. Since Attachment 4, Appendix 4C, is an identical but larger version of Figure F4-2, this change is needed to ensure consistency.

Permit Change:

The Draft RD&D Permit Condition IV.D.2.c has been changed to read "Figure F4-2 and Attachment 4, Appendix 4C, add the following information".

Comment #14. Draft RD&D Permit Condition IV.D.2.c.xi, Page 39.

Energy provided a comment on line 3 of the draft condition, to change "catch basin" to "containment berm".

Response #14:

EPA and Ecology agree with this comment, since the intent is to label the containment (inflatable) berm as LL-CB-1 (See Table 4-4, Page T4-4.1, Line 22). This change is made to meet this intent.

Permit Change:

The draft RD&D Permit condition IV.D.2.c.xi has been changed from "catch basin" to read "containment berm".

Comment # 15. Draft RD&D Permit Condition IV.D.7, Page 40.

Energy provided a comment on line 8 of this draft condition, to change "IV.C.1" to "IV.C.2.a."

Response #15:

~~EPA and Ecology agree with this comment and the change to cite the proper reference.~~

Permit Change:

~~The draft RD&D permit condition has been changed from "IV.C.1" to "IV.C.2.a" which requires a written assessment reviewed and certified by an independent qualified registered professional engineer.~~

Comment #16. Draft RD&D Permit Condition V.D.2.g, Page 45.

Energy provided a comment on line 5 of this draft condition to delete the word "primary".

Response #16:

EPA and Ecology agree with this comment. Since there is only one charcoal unit at the LERF there are no primary or secondary charcoal units.

Permit Change:

The draft RD&D permit condition V.D.2.g has been changed to read as follows: "add charcoal unit breakthrough".

Comment #17. Draft RD&D Permit Condition V.D.2.h, Page 45.

Energy provided a comment that it was unclear what this draft condition intends to convey:

Energy stated that the pressure indicators are already numbered as stated on Figure 4-6 except there are 17 indicators rather than 16 as stated in the paragraph (17 is correct). In addition Energy stated that although the draft condition states, "add pressure switches RO-rsp-1 and RO-rsp-2," it cannot be determined what these are nor where they are to go on Figure 4-6; rsp is not a legend code; RO-rsp is not used elsewhere in the document. Other high pressure switches (HPS) and low pressure switches (LPS) are already on the figure and labeled.

Response #17:

~~EPA and Ecology agree with this comment that pressure indicators, high pressure switches and low pressure switches are already numbered on Figure 4-6.~~

Permit Change:

EPA and Ecology have deleted draft RD&D permit condition
V.D.2.h.

ATTACHMENTS**Comment #18. Draft RD&D Permit Attachment 1, Page 1-5, Line 21.**

Energy provided a comment on Attachment 1, Facility Description and Maps of Facility Location to define the term "LERF" in the "Definitions" portion of the RD&D permit. This acronym is not defined in the excerpted portions of the Waste Water Pilot Plant RD&D permit application. Energy stated that a definition of this term would help clarify its usage in the excerpted portions of the permit application.

Response #18:

EPA and Ecology agree with this comment. The acronym for the Liquid Effluent Retention Facility (LERF) has been added in the introduction.

Permit Change:

EPA and Ecology have clarified the meaning of the acronym Liquid Effluent Retention Facility (LERF) in the Introduction on page 3 of the RD&D permit.

Comment #19. Draft RD&D Permit Attachment 1, Page F1-4, Topographic Map (Drawing Number H-2-81570, Rev. 0)

Energy provided a comment that there was an inconsistency between Figure 1-4 and the LERF topographic map. The topographic map shows four retention basins while Figure 1-4 shows only three. Include permit language stating that the appropriate number of basins is three. Basin number 242AL41 will not be constructed.

Response #19:

EPA and Ecology agree with the comment. Although the topographic map was accurate when the permit application was submitted, a subsequent decision was made to build only three basins. This change is needed to reflect more current information.

Permit Change:

EPA and Ecology have added a note to the LERF topographic map to be consistent with Figure 1-4, that LERF Basin number 242AL41 will not be constructed.

Comment #20. Draft RD&D Permit Attachment 4, Page 4-9, line 39.

Energy provided a comment to include RD&D permit language to delete the word "maximum" since the mixing vessel for pH adjustment at the 1706-KE Building has two chambers designed to assure a minimum retention time of 10 minutes in each chamber. In addition Energy stated that a longer retention time will not hurt the system.

Response #20:

EPA and Ecology agree with the comment.

Permit Change:

EPA and Ecology have added the following statement to the draft RD&D Permit Application "Delete the word 'maximum' from Attachment 4, Page 4-9, line 39.

Comment #21. Draft RD&D Permit Attachment 5, Page 5-1, Section 5.1.

Energy provided a comment to include RD&D permit language to:

- a. Remove "and is expected to remain so for the foreseeable future" from line 13.
- b. Delete lines 19 through 23 and to insert the following text:

"Manned barricades (Yakima and Wye Barricades) are maintained around the clock at checkpoints on vehicular access roads leading to the central portion of the Hanford Site. All personnel accessing the Hanford Site areas must have a U.S. Department of Energy-issued security identification badge indicating the appropriate authorization. Personnel also might be subject to a random search of items carried into or out of the Hanford Site."

- c. Delete lines 25 through 32.

Response #21:

EPA and Ecology agree with the comment. The security information was accurate when the permit application was submitted; however, changes have been made in security provisions since the submittal. The noted changes are needed in the RD&D permit to reflect more current information.

Permit Change:

EPA and Ecology have added RD&D permit conditions II.E.1.a. and II.E.1.b which make the following changes to Section 5.1, page 5-1 of Attachment 5: Delete "and is expected to remain so for the foreseeable future". Replace the second paragraph with "Manned barricades (Yakima and Wye Barricades) are maintained around the clock at checkpoints on vehicular access roads leading to the central portion of the Hanford Site. All personnel accessing the Hanford Site areas must have a U.S. Department of Energy-issued security identification badge indicating the appropriate authorization. Personnel also might be subject to a random search of items carried into or out of the Hanford Site."

Comment #22. Draft RD&D Permit Attachment 8.

Energy provided a comment to include RD&D permit language to note that the Hanford on-site emergency response number, wherever mentioned in Attachment 8, is "911", not "811".

Response #22:

EPA and Ecology agree with the comment. Since the permit application was submitted, the Hanford on-site emergency response number has been changed from "811" to "911". This change is needed to reflect more current information.

Permit Change:

The phone number for the Hanford on-site emergency response number has been changed from "811" to "911" in draft permit condition II.I.

Comment #23. Draft RD&D Permit Attachment 10, Page 8-1, line 46.

Energy provided a comment to include RD&D permit language to note that "operation of the waste water pilot plant is contingent upon operation of the 242-A Evaporator and availability of waste water for treatment."

Response #23:

The projected start date of 1992 for operating the waste water pilot plant is no longer accurate. This change is needed to reflect more current information.

Permit Change:

EPA and Ecology agree with this comment and has added the information concerning the operation of the 242-A Evaporator to Attachment 10.

Comment #24. Draft RD&D Permit Attachment 11, Page 1-8, second paragraph, last sentence.

Energy provided comment to include RD&D permit language to note that "operation of the waste water pilot plant is contingent upon operation of the 242-A Evaporator and availability of waste water for treatment."

Response #24:

EPA and Ecology agree with the comment. The projected date of November to December 1992 for waste water availability is no longer accurate. This change is needed to reflect more current information.

Permit Change:

EPA and Ecology have changed the second paragraph, last sentence, Attachment 11, Page 1-8, to read "Operation of the waste water pilot plant is contingent upon operation of the 242-A Evaporator and the availability of waste water for treatment".

**COMMENTS BY F. ROBERT COOK FOR THE CONFEDERATED TRIBES AND BANDS
OF THE YAKAMA INDIAN NATION**

Comment #1:

The Confederated Tribes and Bands of the Yakama Indian Nation (Yakama Nation) provided a comment on the Hazardous Waste Pilot Plant Research, Development and Demonstration Project that the facility is not a research, demonstration, and development project since it involves the filtering of a large volume of liquid effluent that would be stored in the Liquid Effluent Retention Facility (LERF). In this regard the filter constitutes a production facility and should be regulated accordingly.

Response #1:

EPA and Ecology acknowledge that the RD&D Activity conducted at the LERF and the 1706-KE Facility involves the filtering of liquid effluent from the 242-A Evaporator. Filtering is only one part of the treatment that will be regulated as part of the RD&D activity under the RD&D permit. However, EPA and Ecology believe that the RD&D Waste Water Pilot Plant meets the intent of the criteria for RD&D permits contained in the OSWER Policy Directive #9527.00-1A, "Guidance Manual for Research, Development, and Demonstration Permits Under 40 CFR Section 270.65, EPA/530-SW-86-008, July 1986". In this guidance manual EPA reiterated that:

"... the Agency recognizes that RD&D facilities will involve testing of one or more technologies or processes at laboratory-scale, bench-scale, pilot-scale, and/or full-scale. At a minimum, RD&D permits will allow for research, development, and demonstration with units ... where the permit applicant intends to refine, develop, or improve performance, or demonstrate cost-efficiency of commercially demonstrated technologies or processes (providing these demonstrations are experimental or innovative)".

EPA and Ecology used the criteria set forth in the RD&D guidance manual to evaluate the permit application and determined that:

(1) the purpose of the Waste Water Pilot Plant is to generate new information to evaluate the technical and economic feasibility of a waste management technology and process; (2) that the Waste Water Pilot Plant would treat limited quantities of waste at a scale of operation necessary to obtain viable data with

consideration of equipment availability in the market place; and (3) the operation would be for a limited period of time necessary to adequately prove the feasibility of the technology or process.

The treatment process which would be developed under this permit is a key element of the overall treatment system being developed to reduce the volume of mixed waste in as many as 200 underground storage tanks at the Hanford Federal Facility. The cleanup and safety of these tanks has been a major public concern for some time. This RD&D project is a key step in the design of a full-scale 200 Area Effluent Treatment Facility.

Permit Change:

There is no permit change required to address this comment.

Comment #2:

The Yakama Nation provided a comment that the use of the 1706-KE Building, several miles from the subject C-018H treatment facility as a pilot plant for the chemical processes to be housed in C-018H, is unfounded and unnecessary. Furthermore, the potential long-term need for a pilot facility could substantially tie-up the K-Area, delay remediation of this facility and extend caretaker costs. The delay associated with remediation of the Riverland area at the K complex, a key area of cultural significance to the Yakama Nation, is undesirable and represents a significant adverse impact.

Response #2:

EPA and Ecology disagree that the use of the 1706-KE Facility is unfounded and unnecessary. The RD&D permit application specifies that only effluent from the 242-A Evaporator will be remediated at the 1706-KE facility. This facility is limited to 365 operating days under the RD&D Permit. The RD&D activities at 1706-KE are necessary to support the design and construction of the C-018H effluent treatment facility. The use of the 1706-KE facility allows for the timely completion and demonstration of treatment of the 242-A Evaporator condensate to support the operation of the 200 Area Effluent Treatment Facility. The construction of a pilot facility will not permit the completion of this testing in a timely manner since the completion of the RD&D activity is required to support the 200 Area Effluent Treatment Facility is scheduled to be completed in 1995.

Permit Change:

There is no permit change required to address this comment.

Comment #3:

The Yakama Nation considers that alternatives that would provide a new pilot plant facility at the site of the C-018H and that would not require the use of radioactive contaminated effluent from LERF, will provide much greater flexibility in actually accomplishing desired demonstration of the chemical treatment planned for this pilot plant facility. The D&D of the pilot plant facility should be significantly simplified, if it is not contaminated with radioactive material.

Response #3:

EPA and Ecology agree with this comment in part. The pilot plant facility D&D would be simplified if there was no radioactive material. However, the spiking of the 242-A Evaporator Effluent is necessary to demonstrate the efficacy of the 1706-KE treatment train. The 1706-KE is an existing facility which will be used to demonstrate through the RD&D permit that the proposed treatment train for the liquid effluent from the 242-A Evaporator is effective in treating this effluent. See EPA and Ecology Response #2.

Permit Change:

There is no permit change required for this comment.

Comment #4.

The Yakama Nation provided a comment on the transport of liquid effluent from LERF to K- Area facility was unfounded.

Response #4:

EPA and Ecology disagree with this comment. It is necessary to use the existing facility to meet the time frame for conducting the RD&D activity. In addition, the RD&D Permit incorporates requirements on the transportation of liquid effluent from the LERF to the 1706-KE facility. The RD&D permit application specifies in Section 4.3.3 "Equipment Description" that two tank trailers will be used to transport the liquid effluent from the LERF to the 1706-KE facility. These 5,000 gallon tank trailers are Department of Transportation certified to carry corrosives, acids and caustics. Secondary containment will be provided during tank trailer loading and unloading at LERF and unloading and loading at the 1706-KE Facility. There will

be a portable berm at LERF with a sufficient capacity to provide secondary containment during both loading and unloading operations. These operations will be under continuous surveillance. A catch tank at the 1706-KE Facility will provide secondary containment during the unloading and loading operations. These additional precautions will ensure safe operation during the transportation of the liquid effluent. These procedures are incorporated as Attachment 4 of the RD&D permit. See also EPA and Ecology Response #2.

Permit Change:

There is no permit change required for this comment.

Comment #5.

The Yakama Nation provided a comment on the pilot facility that a subsystem for the separation of tritium from the waste water streams using a reverse osmosis process developed by research at Battelle Northwest Laboratory be included. The Yakama Nation also reiterated that the permit for the RD&D Facility should not be allowed because of the issues cited in these comments.

Response #5:

EPA and Ecology disagree in part with this comment. Since there is no proven, cost-effective technology to remove radioactive tritium from the wastewater the treated wastewater from the RD&D 1706-KE Facility will be returned via tanker truck to the LERF. The wastewater from the 200 Area Wastewater Treatment Facility will be discharged to the environment in a way that allows for radioactive decay of tritium (half-life 12.3 years) and reduces tritium concentrations to levels which meet health, safety and environmental standards. EPA, Ecology, and the U.S. Department of Energy through the Federal Facility Agreement and Consent Order (Tri-Party Agreement) have established Milestone M-26-05, Tritiated Waste Water Treatment Evaluation, for further evaluation of technological solutions for the removal of tritium from liquid effluent waste streams after treatment.

Permit Change:

There is no permit change required for this comment.

**COMMENTS BY HAL COOPER: RD&D PERMIT MEETING AND HEARING
3 NOVEMBER 1993**

Hal Cooper of 11715 NE 145th Street, Kirkland, Washington, provided comments during the RD&D Public meeting and hearing on November 3, 1993.

Comment #1:

Hal Cooper provided a comment regarding the tritium removal and indicated that there was ongoing work at Battelle in selective reverse osmosis systems. He acknowledged that there is no technology commercially available for tritium removal. In addition, he stated that there are catalytic exchange and protonic exchange processes that have been developed in the United States, Canada, Europe, and Russia which show promise. He also indicated that perhaps a two-stage system used by Battelle in combination with one of these systems would allow for a greater degree of tritium removal.

Response #1:

EPA and Ecology agree with this comment that there is currently no technology commercially available for tritium removal. EPA, Ecology, and the U.S. Department of Energy through the Federal Facility Agreement and Consent Order (Tri-Party Agreement) have established Milestone M-26-05, Tritiated Waste Water Treatment Evaluation, for further evaluation of technological solutions for the removal of tritium from liquid effluent waste streams after treatment. Although the evaluation of the suggested catalytic and protonic exchange processes, and two-stage Battelle system which have been developed, are not specifically included as part of the RD&D activity under this draft RD&D permit they may be included as part of a future RD&D activity under the M-26-05 Milestone.

Permit Change:

No permit change is required for this comment.

Comment #2: Economic Risk

Hal Cooper also provided a comment on economic risk and viability as well as viewing tritium as a resource rather than a pollutant.

Response #2:

EPA and Ecology agree with the comment that tritium is a significant energy resource and that tritium could also be a

resource rather than a pollutant. The RD&D permit, however, does not address the treatment of tritium, which is a radioactive material and therefore not regulated under RCRA or this RD&D permit.

Permit Change:

No permit change is required for this comment.

9513336.0105

FINAL JOINT PERMIT FOR DANGEROUS WASTE RESEARCH, DEVELOPMENT,
AND DEMONSTRATION TREATMENT AND STORAGE ACTIVITY

U.S. ENVIRONMENTAL PROTECTION
AGENCY REGION 10
1200 SIXTH AVENUE, HW-106
SEATTLE, WASHINGTON 98101
(206) 553-1261

DEPARTMENT OF ECOLOGY
NUCLEAR WASTE PROGRAM
P.O. BOX 47600
OLYMPIA, WASHINGTON 98504
(206) 407-7150

Issued in accordance with the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA) and the regulations promulgated thereunder in Title 40 of the Code of Federal Regulations (40 CFR), and the applicable provisions of the Revised Code of Washington (RCW) Chapter 70.105 and the regulations promulgated thereunder in the Washington Administrative Code (WAC) Chapter 173-303, and the Hanford Federal Facility Agreement and Consent Order (FFACO).

ISSUED TO: U.S. Department of Energy Westinghouse Hanford
Owner/Operator Company (Co-operator)
P.O. Box 550 P.O. Box 1970
825 Jadwin Avenue Richland, WA 99352
Richland, WA 99352

This Permit is effective as of 6 June 1994, and shall remain in effect until 6 June 1998, and shall not exceed 365 operating days of the Dangerous Waste Research, Development and Demonstration Treatment Activity authorized by this Permit, unless revoked and reissued, or terminated under WAC 173-303-830(3) and (5), WAC 173-303-809, 40 CFR §§ 270.41, 270.43 or 270.65.

ISSUED BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY AND
STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

Randall F. Smith

Randall F. Smith, Director
Hazardous Waste Division
Region 10
U.S. Environmental Protection
Agency

Dru H. Butler

Dru H. Butler, Program Manager
Nuclear Waste Program
State of Washington
Department of Ecology

Date 5/3/94

Date 5/4/94

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INTRODUCTION

Permittees: U.S. Department of Energy Westinghouse Hanford
Company

Environmental Protection Agency Identification
Number: WA7 98000 8967

Pursuant to the Solid Waste Disposal Act, 42 U.S.C. § 3251, et seq., as amended by the Resource Conservation and Recovery Act of 1976, as amended, 42 U.S.C. § 6901, et seq. (RCRA), and the Hazardous and Solid Waste Amendments of 1984 (HSWA), and regulations promulgated thereunder by the United States Environmental Protection Agency (Agency) in Title 40 of the Code of Federal Regulations (40 CFR), and pursuant to the Revised Code of Washington (RCW) Chapter 70.105, the Hazardous Waste Management Act of 1976, as amended, and regulations promulgated thereunder by the Department of Ecology (Department), codified in the Washington Administrative Code (WAC) Chapter 173-303, Dangerous Waste Regulations, and in accordance with the Hanford Federal Facility Agreement and Consent Order (FFACO), a Permit is issued to Department of Energy-Richland Operations Office (Owner/Operator) and to the Westinghouse Hanford Company (Co-operator) (hereafter called the Permittees), to operate a dangerous waste research, development, and demonstration treatment and storage activity located in Richland, Washington, at the Engineering and Environmental Demonstration Laboratory, Building 1706-KE, at latitude 46°38'57.2" and longitude 119°35'34.5", and at the Liquid Effluent Retention Facility (LERF) at latitude 46°33'42.33" and longitude 119°35'34.2".

The Permittees must comply with all terms and conditions of this Permit and with Attachments 1 through 11. If this Permit and the above attachments conflict, the wording of the Permit will prevail. This Permit is intended to be consistent with the terms and conditions of the FFACO.

The Department of Energy must comply with the FFACO and the Permittees must comply with the federal regulations in 40 CFR 124, 260 through 266, Part 268 and 270, and state regulations in Chapter 173-303 WAC as specified in this permit. The Permittees shall also comply with any self-implementing statutory provisions which, according to the requirements of RCRA (as amended) or state law, are automatically applicable to Permittees' dangerous waste activities, notwithstanding the conditions of this Permit.

This Permit is based upon the administrative record, as required by WAC 173-303-840 and 40 CFR § 124.9. The Permittees' failure in the application or during the Permit issuance process to fully disclose all relevant facts, or the Permittees' misrepresentation of any relevant facts at any time, shall be grounds for the termination or

modification of this Permit and/or initiation of an enforcement action, including criminal proceedings. The Permittees must inform the Administrator and Director of any deviation from Permit conditions or changes in the information provided in the RD&D Permit application. In particular, the Permittees shall inform the Administrator and Director of any proposed changes that might affect the Permittees' ability to comply with applicable regulations and Permit conditions, or which may alter any of the conditions of the Permit in any way.

At this time, the State of Washington authorized RCRA program pursuant to Section 3006 of RCRA, as amended, 42 U.S.C. § 6926, does not include Research, Development, and Demonstration Permits. Therefore, this Permit is issued by the Agency directly pursuant to Section 3005(g) of RCRA, as amended, 42 U.S.C. § 6925(g). The State of Washington issues this Permit pursuant to the Hazardous Waste Management Act of 1976, as amended.

The Agency and the Department shall enforce all permit conditions in this Permit pursuant to RCRA and the State of Washington Hazardous Waste Management Act, respectively. Any challenges by Westinghouse Hanford Company or by the Department of Energy-Richland Operations Office of this Permit under federal law shall be directed to the Agency in accordance with 40 CFR § 124.19. Any challenges of this Permit by Westinghouse Hanford Company or by the Department of Energy-Richland Operations Office of this Permit under state law shall be directed to the Pollution Control Hearings Board in accordance with RCW 43.21B.310(1). In the event of a challenge by either Permittee under federal law, as specified above, the Permit may be stayed by the Administrator pursuant to 40 CFR § 124.16 as to either or both Permittees pending resolution of the challenge under the applicable procedure contained in 40 CFR Part 124.

Until and unless the State of Washington becomes authorized, pursuant to Section 3006 of RCRA, to administer RCRA research, development and demonstration permits, any challenge or appeal of this Permit by the Department of Energy-Richland Operations Office or by Westinghouse Hanford Company under state law shall not stay the applicability or effective date of any condition of this Permit under RCRA and applicable federal law. In the event a decision of the Department is challenged by the Department of Energy-Richland Operations Office or by Westinghouse Hanford Company under WAC 173-303-845, the Department may stay the decision as it pertains to both Permittees pending resolution of the matter under state law. If such a stay is granted, it will constitute a "stay by the issuing agency" within the meaning of RCW 43.21B.320(1).

~~During the lifetime of this Permit, the State of Washington may become authorized pursuant to Section 3006 of RCRA, as amended, 42 U.S.C. § 6926, to issue and enforce RCRA Dangerous Waste RD&D Permits. Should the State of Washington become authorized to issue and enforce RCRA Dangerous Waste RD&D permits, the terms and~~

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conditions of this permit shall become enforceable terms and conditions under state law immediately upon the effective date of state authorization for RD&D permits. This authorization will not change the conditions of this Permit. Any citations to federal statutes or regulations shall become citations to the equivalent state statutes or regulations. Any citations to the Agency and the Department, or to the Administrator and the Director, shall become citations to the Department and to the Director.

The Agency shall enforce all permit conditions which are based on federal regulations that have not yet been adopted by the State of Washington and have not been included in the state's authorized hazardous waste program. The Agency shall maintain an oversight role of the state's authorized program and, in such capacity, shall enforce any permit condition based on state requirements if, in the Agency's judgment, the Department fails to enforce that permit condition, except that in no case shall the Agency enforce any permit condition which is broader in scope than the federal program.

LIST OF ATTACHMENTS

The following listed documents are excerpts from the Permittees' Waste Water Pilot Plant Research, Development and Demonstration Permit Application. The listed documentation is hereby incorporated as specified below, in its entirety, by reference into this Permit, with the exception that other portions of the Permittees' Waste Water Pilot Plant Research, Development and Demonstration Permit Application, not hereby listed, which are referenced in these listed documents are not incorporated into this Permit. Also information included in the listed documentation which is referred to as illustrative or for information purposes is not incorporated into this Permit. The Department and the Agency have, as deemed necessary, modified specific language in the Attachments. These modifications are described in the Permit conditions (Parts I. through V.), and thereby supersede the language of the original Attachments. These incorporated excerpts are enforceable conditions of this Permit, as modified by the specific Permit condition.

Attachment 1 Facility Description and Maps of Facility Location, consisting of:

Subsection 1.4, last paragraph, page 1-5 of permit application, as last revised March 19, 1993.

Subsection 1.5, page 1-5 of permit application, as last revised March 19, 1993 and page 1-6 of the permit application, as last revised April 22, 1992.

Section 1.0, Figure 1-3, page F1-3 of permit application, as last revised April 22, 1992.

Section 1.0, Figure 1-4, page F1-4 of permit application, as last revised April 22, 1992.

Appendix 1A, Drawing No. H-13-000015, Rev. 0 of permit application, as prepared on September 18, 1991.

Appendix 1A, Drawing No. H-2-81570, Rev. 0 of permit application, as prepared on May 8, 1991.

Appendix 1A, Drawing No. H-13-000083, Sheets 1 and 2, Rev 1A of permit application, as prepared on August 4, 1993.

Attachment 2 Demonstration Plan, consisting of:

Subsection 2.1, pages 2-1 through 2-4 of permit application, as last revised on April 22, 1992.

Subsection 2.2, page 2-4 of permit application, as last revised on April 22, 1992 and page 2-5 of permit application, as last revised on March 19, 1993.

Section 2, Table 2-1, page T2-1 of permit application, as last revised on April 22, 1992.

Attachment 3 Waste Analysis Plan, consisting of:

Section 3.0, pages 3-1 through 3-10 of permit application, as last revised on March 19, 1993.

Section 3.0, Table 3-1, page T3-1.1 of permit application, as last revised on April 22, 1992.

Section 3.0, Table 3-1, pages T3-1.2 through T3-1.3 of permit application, as last revised on March 19, 1993.

Section 3.0, Table 3-2, pages T3-2.1 through T3-2.2 of permit application, as last revised on April 22, 1992.

Section 3.0, Table 3-3, page T3-3 of permit application, as last revised on April 22, 1992.

Section 3.0, Table 3-4, pages T3-4.1 through T3-4.2 of permit application, as last revised on April 22, 1992.

Section 3.0, Table 3-5, pages T3-5.1 through T3-5.2 of permit application, as last revised on April 22, 1992.

Attachment 4 Process Information, consisting of:

Subsection 4.1, pages 4-1 through 4-18 of permit application, as last revised on March 19, 1993.

Subsection 4.2, page 4-18 of permit application, as last revised on March 19, 1993.

Subsection 4.3, page 4-18 through 4-30 of permit application, as last revised on March 19, 1993.

Section 4.0, Figures 4-1 through 4-2, pages F4-1 through F4-2 of permit application, as last revised on March 19, 1993.

Section 4.0, Figures 4-3 through 4-5, pages F4-3 through F4-5 of permit application, as last revised on April 22, 1992.

Section 4.0, Figures 4-6 through 4-7, pages F4-6 through F4-7 of permit application, as last revised on March 19, 1993.

~~Section 4.0, Figures 4-8 through 4-19, pages F4-8 through F4-19 of permit application, as last revised on April 22, 1992.~~

Section 4.0, Figure 4-20, page F4-20 of permit application, as last revised on March 19, 1993.

Section 4.0, Figures 4-21 through 4-22, pages F4-21 through F4-22 of permit application, as last revised on April 22, 1992.

Section 4.0, Figures 4-23 through 4-26, pages F4-23 through F4-26 of permit application, as last revised on March 19, 1993.

Section 4.0, Table 4-1, page T4-1 of permit application, as last revised on April 22, 1992.

Section 4.0, Table 4-2, page T4-2 of permit application, as last revised on April 22, 1992.

~~Section 4.0, Table 4-3, pages T4-3.1 through T4-3.2 of permit application, as last revised on March 19, 1993.~~

~~Section 4.0, Table 4-4, pages T4-4.1 through T4-4.2 of permit application, as last revised on April 22, 1992 and pages T4-4.3 through T4-4.6 of permit application as last revised on March 19, 1993.~~

~~Appendix 4A, Waste Water Plant Process Flow Diagram, of the permit application as last revised on March 19, 1993.~~

~~Appendix 4C of permit application, as last revised on April 22, 1992.~~

~~Appendix 4D of permit application, as last revised on April 22, 1992.~~

~~Appendix 4E, Manufacturer's Data on ModuTanks, of permit application, as last revised on March 19, 1993.~~

Attachment 5 Security Procedures, consisting of:
Subsection 5.1, page 5-1 of permit application, as last revised on April 22, 1992.

Attachment 6 Inspection Plan, consisting of:

Subsection 5.2, pages 5-1 through 5-2 of permit application, as last revised on April 22, 1992.

Appendix 5A, pages APP-5A-1 through APP-5A-2, and pages APP-5A-4 through APP-5A-11 of permit application, as last revised on April 22, 1992, and page APP-5A-3, as last revised on March 19, 1993.

Appendix 5A, Figures 5A-1, page F5A-1 of permit application, as last revised on April 22, 1992.

Attachment 7 Preparedness and Prevention

Subsection 5.3, page 5-2 of permit application, as last revised on April 22, 1992.

Subsection 5.4, page 5-2 of permit application, as last revised on April 22, 1992.

Subsection 5.6, pages 5-3 through 5-5 of permit application, as last revised on April 22, 1992.

Appendix 5B, page APP 5B-1 of permit application, as last revised on April 22, 1992.

Appendix 5B, Table 5B-1, pages APP T5B-1.1 and APP T5B-1.3 of permit application, as last revised on April 22, 1992, and page APP T5B-1.2 of permit application, as last revised on March 19, 1993.

Appendix 5B, Table 5B-2, pages APP T5B-2.1 through APP T5B-2.3 of permit application, as last revised on March 19, 1993.

Appendix 5B, Table 5B-3, pages APP T5B-3.1 through APP T5B-3.2 of permit application, as last revised on March 19, 1993.

Attachment 8 Contingency Plan, consisting of:

Section 6.0, page 6-1 of permit application, as last revised on April 22, 1992.

Appendix 6A, pages APP 7A-1 through APP 7A-35 of permit application, as last revised on October 30, 1992.

Appendix 6A, Table 1, pages APP 7A-3 of permit application, as last revised on October 30, 1992.

Appendix 6A, Table 2, page APP 7A-7 of permit application, as last revised on October 30, 1992.

Appendix 6A, Table 3, page APP 7A-24 of permit application, as last revised on October 30, 1992

Appendix 6A, Table 4, pages APP 7A-26 through APP 7A-28 of permit application, as last revised on October 30, 1992.

Appendix 6B, pages 1 through 49 of permit application, as last revised on April 2, 1992.

Appendix 6C, pages 1 through 29 of permit application, as last revised on September 28, 1990.

Appendix I, pages 1 through 31 of permit application, as last revised on September 28, 1990.

Attachment A, pages 1 through 6 of permit application, as last revised on September 28, 1990.

Attachment 9 Personnel Training Plan, consisting of:

Section 7.0, pages 7-1 through 7-6 of permit application, as last revised on April 22, 1992.

Section 7.0, Table 7-1, page T7-1 of permit application, as last revised on April 22, 1992.

Section 7.0, Table 7-2, page T7-2 of permit application, as last revised on April 22, 1992.

Section 7.0, Table 7-3, pages T7-3.1 through T7-3.7 of permit application, as last revised on April 22, 1992.

Attachment 10 Closure Plan, consisting of:

Subsection 8.1, pages 8-1 through 8-6 of permit application, as last revised on April 22, 1992 and pages 8-7 through 8-9 of permit application, as last revised on March 19, 1993.

Subsection 8.6, page 8-10 of permit application, as last revised on March 19, 1993.

Appendix 4G, Enclosure 1, pages 1 through 3 of permit application, as prepared on June 5, 1991.

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Attachment 11 Quality Assurance Plan, consisting of:

Appendix 2A, Sections 1 through 16 of permit application, as last revised, April 22, 1992.

DEFINITIONS

For purposes of this Permit, the following definitions shall apply:

- a. The term "Administrator" shall mean the Administrator of the U.S. Environmental Protection Agency (EPA) or a designated representative. The Director, Hazardous Waste Division, EPA Region 10 (with the address as specified on page one of this Permit) is a duly authorized and designated representative of the Administrator for purposes of this Permit.
- b. The term "Agency" shall mean the U.S. Environmental Protection Agency, Region 10, (with the address specified on page one of this Permit).
- c. The term "day" or "days", unless otherwise noted, shall refer to calendar time; i.e., thirty (30) days means thirty (30) calendar days.
- d. The term "Department" shall mean the Washington State Department of Ecology, (with the address as specified on page one of this Permit).
- e. The term "Director" shall mean the Director of the Washington State Department of Ecology or a designated representative of the Director for purposes of this Permit.
- f. The term "FFACO" means the Hanford Federal Facility Agreement and Consent Order, as amended.
- g. The term "facility" or "site" shall mean the Engineering and Environmental Demonstration Laboratory, Building 1706-KE, at latitude 46°38'57.2" and longitude 119°35'34.5", and the Liquid Effluent Retention Facility at latitude 46°33'42.33" and longitude 119°35'34.2" used to manage dangerous waste research, development, and demonstration treatment and storage activity located in Richland, Washington as specified in Attachment 1 of the Permit.
- h. The term "federal government working day" shall mean a calendar day excluding federal holidays and weekends (i.e. Saturday and Sunday.)
- i. The term "~~Hanford Reservation~~" shall mean approximately 560 square miles in Southeastern Washington State, which is owned by the United States Department of Energy identified by the EPA/State Identification number WA7 89000 8967.
- j. The term "Mixed Waste" shall mean solid waste containing both hazardous or dangerous constituents, regulated under the Resource Conservation and Recovery Act, as amended, and radioactive constituents consisting of source, special nuclear,

- or byproduct material regulated under the Atomic Energy Act of 1954, as amended.
- k. "Operating Day" shall mean any fraction of a calendar day when conducting the Dangerous Waste Research, Development and Demonstration Treatment and Storage Activity authorized by this Permit.
 - l. The term "Permit" shall mean the joint Research, Development, and Demonstration Permit issued by the U.S. Environmental Protection Agency, Region 10, pursuant to 42 U.S.C. 3251, et seq. and 40 CFR Parts 124 and 270, and by the Washington State Department of Ecology pursuant to the Hazardous Waste Management Act of 1976 as amended.
 - m. The term "Permittees" shall mean the United States Department of Energy (owner/operator) and the Westinghouse Hanford Company (co-operator).
 - n. The term "RD&D Activity" shall mean Dangerous Waste Research, Development, and Demonstration Treatment and Storage Activity authorized by this Permit.
 - o. The term "Test" shall mean a series of operations having a stated overall purpose employed to resolve uncertainties. A test is described by a plan which details a series of steps, procedures, or analyses required to obtain the overall purpose.
 - p. All definitions contained in 40 CFR §§ 124.2, 260.10, 270.2, 264.141, and WAC 173-303-040 are hereby incorporated, in their entirety, by reference into this Permit, except that any of the definitions used above shall supersede any definition of the same term given in the respective regulations. Where terms are not defined in the regulations or the Permit, the meaning associated with such terms shall be the standard dictionary definition or their generally accepted scientific or industrial meaning.

PART I - STANDARD CONDITIONS**I.A. EFFECT OF PERMIT**

The Permittees are authorized by this Permit to conduct RD&D activity in accordance with the conditions of this Permit and in accordance with the applicable provisions of WAC 173-303-809 and 40 CFR § 270.65. This Permit does not authorize any other management of dangerous waste at this facility. Issuance of this Permit does not convey property rights of any sort or any exclusive privilege. Issuance of this Permit does not authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local laws or regulations.

I.B. GENERAL PERMIT CONDITIONS

- I.B.1. The general Permit conditions under WAC 173-303-810 and 40 CFR § 270.30, final facility standards under WAC 173-303-600 and 40 CFR Part 264, that are incorporated into this Permit must be adhered to by the Permittees. The Permittees shall also comply with any self-implementing statutory provisions which, according to the requirements of RCRA (as amended) or state law, are automatically applicable to Permittees' dangerous waste activities, notwithstanding the conditions of this Permit.
- I.B.2. The list of attachments on Pages 6, 7, 8, 9, 10, and 11 of this Permit are incorporated by reference into this Permit. Facility operations must be in accordance with the contents of the attachments and this Permit.
- I.B.3 Confidential Information
- Any information submitted by the Permittee to the Director or Administrator may be claimed as confidential by the Permittees in accordance with applicable provisions of WAC 173-303-810(15) and 40 CFR §§ 260.2 and 270.12.

I.C. PERMIT ACTIONS

- I.C.1. This Permit may be modified, revoked and reissued, or terminated for cause as specified in WAC 173-303-830 and WAC 173-303-809 and 40 CFR §§ 270.41, 270.42, 270.43, and 270.65. The filing of a request for a permit modification, revocation and reissuance, or termination or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition.

I.C.2. Permit modifications, at the request of the Permittees, will be done according to the three tiered modification system as specified in 40 CFR § 270.42 and WAC 173-303-830(4). This includes any modification from design drawings to as-builts, except where the modification from design drawings to as-builts would be covered under Permit condition II.M and/or II.A.2.

I.C.3. Protection of Human Health and the Environment.

The Administrator or the Director may order an immediate termination of all operations under this Permit at any time he or she determines that termination is necessary to protect human health and the environment in accordance with 40 CFR § 270.65(c) and WAC 173-303-809(3).

I.D. SEVERABILITY

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

I.E. DUTIES AND REQUIREMENTS

I.E.1. The Permittees shall comply with all conditions of this Permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit issued under 40 CFR § 270.61 and WAC 173-303-804. Any Permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of RCRA, as amended, and Chapter 70.105 RCW, and is grounds for revocation and reissuance, or modification; or for denial of a Permit renewal application.

I.E.2. The United States Department of Energy-Richland Operations Office is responsible for activities which include, but are not limited to, the overall management and operations of the RD&D Activity at the Hanford Site. The Westinghouse Hanford Company is responsible for activities which include, but are not limited to, operation of the RD&D Activity at the Hanford Site.

I.E.3. If the Permittees wish to continue an activity allowed by this Permit after the expiration date of this Permit, the

Permittees shall submit a complete application for a Permit at least 180 days prior to Permit expiration.

- I.E.4. It shall not be a defense for the Permittees in an enforcement action that it would have been necessary to halt or reduce the Permitted activity in order to maintain compliance with the conditions of this Permit.
- I.E.5. In the event of noncompliance with this Permit, the Permittees shall take all reasonable steps to minimize releases to the environment and shall carry out such measures, as are reasonable, to prevent significant adverse impacts on human health or the environment.
- I.E.6. The Permittees shall at all times properly operate and maintain all activities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittees to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary systems or similar systems only when necessary to comply with the conditions of this Permit.
- ~~I.E.7. The Permittees shall furnish to the Administrator and the Director, within a reasonable time, any relevant information which the Administrator or Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittees shall also furnish to the Administrator and Director, upon request, copies of records required to be kept by this Permit.~~
- I.E.8. The Permittees shall allow the Administrator or the Director, or their authorized representatives, upon the presentation of credentials and other documents as may be required by law, to:
- ~~I.E.8.a. Enter at reasonable times upon the Permittees' premises where a regulated activity is located or conducted, or where records must be kept under the conditions of this Permit;~~
- I.E.8.b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;

- I.E.8.c. Inspect at reasonable times any activities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and
- I.E.8.d. Sample or monitor, at reasonable times for the purposes of assuring Permit compliance or as otherwise authorized by RCRA, as amended, and Chapter 70.105 RCW, any substances or parameters at any location.
- I.E.9. The Permittees may not commence the dangerous waste research, development and demonstration storage or treatment activity at the 1706-KE Facility until the Permittees have submitted to the Administrator and the Director, by certified mail or hand delivery, letters signed by the Permittees and a registered professional engineer stating that the 1706-KE Facility and the Liquid Effluent Retention Facility have been constructed or modified in compliance with the Permit; and:
- I.E.9.a The Administrator and the Director, or their authorized representatives have inspected the modified or newly constructed activity and find it in compliance with the conditions of the Permit; or
- I.E.9.b The Administrator and the Director have either waived the inspection or have not, within 15 days, notified the Permittees of his or her intent to inspect.
- I.E.10. The Permittees may not commence the dangerous waste research, development and demonstration storage or treatment activity at the Liquid Effluent Retention Facility until the Permittees have submitted to the Administrator and the Director, by certified mail or hand delivery, a letter signed by the Permittees and a registered professional engineer stating that the Liquid Effluent Retention Facility filtration units, pH adjustment unit, and the Tank Trailer Loading Area, have been constructed or modified in compliance with the Permit; and:
- I.E.10.a. The Administrator and the Director, or either authorized representatives have inspected the modified or newly constructed activity and finds it in compliance with the conditions of the Permit; or
- I.E.10.b The Administrator and the Director have either waived the inspection or have not within 15 days notified the Permittees of his or her intent to inspect.
- I.E.11. Whenever the Permittees become aware that the Permittees failed to submit any relevant facts in the Permit application, or submitted incorrect information in a

Permit application or in any report to the Administrator and the Director, the Permittees shall promptly submit such facts or information.

I.F. MONITORING, RECORDS AND REPORTING.

I.F.1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity in accordance with Attachments 2, 3, 4, and 11 of this Permit.

I.F.1.a. The Permittees shall substitute analytical methods which are equivalent to those specifically approved for use in this permit in accordance with the following:

I.F.1.a.i. ~~The Permittees shall submit to the Administrator and the Director a request for substitution of an analytical method(s) which is equivalent to the methods(s) specifically approved for use in this permit. The request shall provide information demonstrating that the proposed method(s) is equal or superior to the analytical method(s) requested to be substituted in terms of sensitivity, accuracy, and precision (i.e., reproducibility).~~

I.F.1.a.ii. The Administrator and the Director notify the Permittees in writing by certified mail or hand delivery that the substitution of the analytical method(s) is approved. Such approval shall not require a permit modification under 40 CFR §§ 270.41, 270.42 or 270.65, or WAC 173-303-830, WAC 173-303-809, nor will such approval require submittal under WAC 173-303-110(5).

I.F.2. The Permittees shall retain records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), records and results of inspections, copies of all reports required by this permit, the Final Project Report and records of all data used to complete the application for this Permit for a period of at least three (3) years from the date of the sample, measurement, report, certification, or recording. This three (3) year period may be extended by the Administrator or the Director at any time by notification in writing to the Permittees, and is automatically extended during the course of any unresolved enforcement action regarding this facility. The Permittees shall maintain these records in the information repositories in accordance with the FFACO.

I.F.3 Records of monitoring information shall specify:

- I.F.3.a. The date(s), exact place, and times of sampling or measurements;
- I.F.3.b. The name, title, and affiliation of the individual(s) who performed the sampling or measurements;
- I.F.3.c. The date(s) analyses were performed;
- I.F.3.d. The name, title, and affiliation of the individual(s) who performed the analyses;
- I.F.3.e. The analytical techniques or methods used; and
- I.F.3.f. The results of such analyses, including the QA/QC summary.
- I.F.4. The Permittees shall give at least thirty (30) days advance notice, in writing, to the Administrator and the Director of any planned changes in the permitted facility or activity which may result in noncompliance with Permit requirements. If advance notice of any planned changes in Permitted activity that might result in noncompliance with Permit requirements is not possible, then the Permittees shall give notice on the next federal government working day after becoming aware of anticipated noncompliance. Such notice does not authorize any noncompliance with or modification of this Permit.
- I.F.5. The Permittees shall give notice to the Administrator and the Director as soon as possible of any planned physical alterations or additions to the Permitted activity. Such notice does not authorize any noncompliance with or modification of this Permit.
- I.F.6. Twenty-Four Hour Reporting.
- The Permittees shall verbally report to the Administrator and Director any noncompliance which may endanger human health or the environment. Any such information shall be reported within 24 hours from the time the Permittees become aware of the noncompliance to the Administrator, and shall be reported immediately to the Director and the Administrator as soon as the Permittees become aware of the noncompliance. The immediate and 24 hour report shall include the following:
- I.F.6.a. Information concerning release of any dangerous waste that may cause an endangerment to public drinking water supplies.
- I.F.6.b. Any information of a release or discharge or dangerous waste, or of a fire or explosion from the dangerous waste research, development and demonstration treatment and

storage activity, which could threaten the environment or human health outside the activity. The description of the occurrence and its cause shall include:

- I.F.6.b.i. Name, address, and telephone number of the owner or operator;
 - I.F.6.b.ii. Name, address, and telephone number of the activity site;
 - I.F.6.b.iii. Date, time, and type of incident;
 - I.F.6.b.iv. Name and quantity of material(s) involved;
 - I.F.6.b.v. The extent of injuries, if any;
 - I.F.6.b.vi. An assessment of actual or potential hazard to the environment and human health outside the activity, where this is applicable; and
 - I.F.6.b.vii. Estimated quantity and disposition of recovered material that resulted from the incident.
- I.F.7. A written submission shall also be provided to the Administrator and Director within five (5) days of the time the Permittees become aware of the noncompliance that might endanger human health and the environment. The written submission shall contain a description of noncompliance and its cause; the periods of noncompliance (including exact dates and times); if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Administrator and the Director may waive the five day written notice requirement in favor of a written report within fifteen days in accordance with 40 CFR § 270.30(1)(6)(iii) and WAC 173-303-810(14)(f).
- I.F.8. The Permittees shall report to the Administrator and the Director all other instances of noncompliance not otherwise required to be reported above, at the time monitoring reports are submitted. The reports shall contain the information listed in Permit condition I.F.7. For the purposes of the Permit condition, the term "noncompliance" shall be defined as noncompliance with this Permit.
- I.F.9 Whenever the Permittees become aware that they failed to submit any relevant facts in the Permit Application, or submitted incorrect information in a Permit Application or in any report to the Administrator or the Director, the

Permittees shall promptly submit such facts or information to the Administrator and the Director.

I.G. COMPLIANCE NOT CONSTITUTING DEFENSE

Compliance with the terms of this Permit does not constitute a defense to any order issued or any action brought under any other state or federal laws governing protection of public health or the environment. However, compliance with the terms of this permit does constitute a defense to any action alleging failure to comply with the applicable standards upon which this permit is based.

I.H. TRANSFER OF PERMIT

This Permit may not be transferred to a new owner and operator unless it is modified or revoked and reissued pursuant 40 CFR §§ 270.40(b) or 270.41(b)(2) and WAC 173-303-830(2).

I.I. REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE ADMINISTRATOR AND THE DIRECTOR

All reports, notifications, and other submissions which are required by this Permit to be sent or given to the Administrator or Director should be sent certified mail or given to:

Program Manager, Waste Management Branch
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue, (HW-102)
Seattle, Washington 98101
Telephone: (206) 553-2782

and

Program Manager, Nuclear Waste Program
Washington Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600
(206) 407-7150

and

Hanford Section Manager, Nuclear Waste Program
Washington Department of Ecology
7601 W. Clearwater Avenue, Suite #201
Kennewick, Washington 99336
(509) 736-3000

These phone numbers and addresses may change.

I.J. SIGNATORY REQUIREMENTS

All reports or other information submitted to the Administrator or Director shall be signed and certified in accordance with 40 CFR § 270.11 and WAC 173-303-810(12).

I.K. DOCUMENTS TO BE MAINTAINED AT THE ACTIVITY SITE

The Permittee shall maintain at the RD&D Activity site the following documents and amendments, revisions and modifications to these documents, until closure is completed and certified by an independent registered professional engineer:

- I.K.1 The Permit and all Attachments;
- I.K.2. The RD&D Permit Application;
- I.K.3. The RD&D Activity operating record.

I.L. TERM OF PERMIT

The term of the Research, Development and Demonstration permit shall be limited to a maximum of one year of operation (365 operating days) in accordance with 40 CFR § 270.65(a)(1).

I.M. PERMIT RENEWAL

The Permittees shall submit the Research, Development and Demonstration permit for renewal not later than 180 days prior to the expiration date of the permit, in accordance with 40 CFR § 270.10(h). This RD&D permit may be renewed three times, each time for a maximum period of 365 operating days in accordance with permit condition I.L.

PART II - GENERAL OPERATING CONDITIONS**II.A. DESIGN AND OPERATION OF RD&D ACTIVITY**

- II.A.1 The Permittees shall maintain and operate the RD&D Activity to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.
- II.A.2 The Permittees shall construct all the RD&D Activity units in accordance with Attachment 4 of this permit and as otherwise required by this permit, except for minor changes deemed necessary by the Permittees to facilitate proper construction and operation of the RD&D units. Minor changes necessary to accommodate proper construction and operation and the substitution of the use of equivalent or superior materials or equipment must be noted on the as-built figures and/or drawings and the rationale for those deviations must be provided in narrative form. After completion of construction of the RD&D Activity units, the Permittees shall submit final as-built figures and/or drawings and the narrative report for the 1706-KE Facility and the Liquid Effluent Retention Facility to the Administrator and the Director as part of the construction certification document specified in permit condition I.E.8. and I.E.9.

II.B. AUTHORIZATION

The Permittees are not authorized and therefore shall not use dangerous or hazardous waste generated off the Hanford Reservation for conducting the RD&D Activity.

II.C. DEMONSTRATION PLAN

- II.C.1. The Permittees shall follow the procedures as specified in the attached Demonstration Plan, Attachment 2 of this Permit, and the Quality Assurance Plan, Attachment 11 of this Permit, and Waste Analysis Plan, Attachment 3 of this Permit, in conducting the RD&D Activity.
- II.C.2. The Permittees shall submit to the Administrator and the Director specific details of each test to be performed under this Permit at least 30 days prior to the commencement of the test. The specific details will include the information specified under Subsection 2.1.1 in Attachment 2 of the Permit and under Subsection 1.3.1 in Attachment 11 of the Permit.

- II.C.3. The Permittees shall submit quarterly progress reports to the Administrator and the Director. The first quarterly progress report shall be submitted 30 days prior to the commencement of the first test performed under the RD&D Activity. These reports shall include the information specified in Subsection 2.1.2 of Attachment 2 of this Permit and the following:
- II.C.3.a. Lists of tests underway or performed during the quarter covered by the progress report;
- II.C.3.b. Lists of tests projected to be performed during the next quarter and projected date for submittal of specific details for these tests as specified in permit condition II.C.2.; and
- II.C.3.c. Test reports completed during the quarter covered by the progress report.
- II.C.4. The Permittees shall submit a final report to the Administrator and the Director upon completion of the tests, but not later than 90 days following the term of this Permit. This final report will summarize the test results and discuss the feasibility or infeasibility of the experimental activities based on the operating conditions specified in this Permit. This final report submitted to the Administrator or Director shall be signed and certified in accordance with 40 CFR § 270.11 and WAC 173-303-810(12).

II.D. GENERAL WASTE ANALYSIS

- II.D.1. The Permittees shall follow the procedures described in the Waste Analysis Plan, Attachment 3, of this Permit, except that the following changes to Attachment 3 of this Permit are hereby made:
- II.D.1.a. Section 3.4.2, Page 3-9, first paragraph, at end of first sentence add the following: "and total organics".
- II.D.1.b. Table 3-3, Page T3-3, add under "subheading" parameter "total organics," correspondingly under subheading "limit" add "10% by weight," correspondingly under subheading "Derivation of limit" add "NA", and correspondingly under subheading "Analytical method" add "SW-846-9060".
- II.D.2. The Permittees shall follow the procedures described in the Quality Assurance Plan, Attachment 11 of this Permit, except that the following change to Attachment 11 of this permit is hereby made:

II.D.2.a. Section 1.5, Page 1-8, first paragraph, delete "The 242-A Evaporator waste will be available for waste water pilot plant testing between the time frame of January 1, 1992, to August 31, 1992", and add "Operation of the waste water pilot plant is contingent upon operation of the 242-A Evaporator and availability of waste water for treatment".

II.E. SECURITY

The Permittees shall comply with the security procedures as contained in Attachment 5 of this Permit, except that the following changes to Attachment 5 of this Permit are hereby made:

II.E.1.a. Section 5.1, Page 5-1, delete "and is expected to remain so for the foreseeable future".

II.E.1.b. Section 5.1, Page 5-1, replace the second paragraph with the following "Manned barricades (Yakima and Wye Barricades) are maintained around the clock at checkpoints on vehicular access roads leading to the central portion of the Hanford Site. All personnel accessing the Hanford Site areas must have a U.S. Department of Energy-issued security identification badge indicating the appropriate authorization. Personnel also might be subject to random search of items carried into or out of the Hanford Site".

II.E.1.c. Section 5.1, Page 5-1, delete the third paragraph.

II.E.2. The Permittees shall maintain security by either having a twenty-four hour surveillance system or a barrier and a means to control entry. The controlled entry at the Wye and Yakima Barricades, as shown on H-6-958, Overall Hanford Facilities, shall be deemed equivalent to the requirements of 40 CFR §§ 264.14 and 270.14(b) and WAC 173-303-310.

II.F. GENERAL INSPECTION REQUIREMENTS

II.F.1 The Permittees shall follow the procedures of the approved Inspection Plan included as Attachment 6 of this permit.

II.F.2. The Permittees shall remedy any deterioration or malfunction discovered by an inspection as required by 40 CFR § 264.15(c) and WAC 173-303-320(3). Inspection reports shall be recorded and maintained as required by 40 CFR § 264.15(d) and WAC 173-303-320(2).

II.F.3. The Permittees may make only the following changes to the Inspection Plan without first obtaining a permit modification:

- II.H.1.e. Appendix 5B, Table 5B-1, page APP T5B-1.3, under subheading "Equipment Number" add "VOC Analyzer- 1706 KE Building", correspondingly under subheading "Type" add "Process", correspondingly under subheading "Function" add "activates a visual and audible alarm when the organic level emitted from the primary charcoal unit exceeds 10 part per million" and correspondingly under subheading "Maintenance requirement" add "visual inspection with calibration and functional test."
- II.H.1.f. Appendix 5B, Table 5B-1, page APP T5B-1.3, under subheading "Equipment Number" add "pH analyzer for LERF and 1706-KE", correspondingly under subheading "Type" add "Safety", correspondingly under subheading "Function" add "activates alarm and process shut down", and correspondingly under subheading "Maintenance requirements" add "Visual inspection with functional test every 3 months."
- II.H.1.g. Appendix 5B, Table 5B-1, page APP T5B-1.2, under "Equipment number" "UV-TK-1,2" add "UV-TI-1,2."
- II.H.1.h. Appendix 5B, Table 5B-1, page APP T5B-1.2, under "Equipment number" "LF-ps" revise as follows: "LF-C-1, LF-C-2, and LF-C-3", and correspondingly under "Equipment number" "RO-pi-1 through 12" change to "RO-pi-3,6,12".
- II.H.1.i. Appendix 5B, Table 5B-2, page APP T5B-2.3, under subheading "Equipment Number" add "VOC Analyzer - 1706 KE Building", correspondingly under subheading "Type" add "Process", correspondingly under subheading "Function" add "activates a visual and audible alarm when the organic level emitted from the primary charcoal unit exceeds 10 part per million" and correspondingly under subheading "Calibration requirement" add "Functional test and calibration every week during operation of the RD&D Activity."
- II.H.1.j. Appendix 5B, Table 5B-2, page APP T5B-2.3, under subheading "Equipment Number" add "pH analyzer for LERF and 1706-KE", correspondingly under subheading "Type" add "Safety", correspondingly under subheading "Function" add "activates alarm and process shut down", and correspondingly under subheading "Calibration requirement" add "Functional test and calibration every week."
- II.H.1.k. Appendix 5B, Table 5B-2, page APP T5B-2.1, under "Equipment number" "UV-TK-1,2" add "UV-TI-1,2."
- II.H.1.l. Appendix 5B, Table 5B-2, page APP T5B-2.2, under "Equipment number" "LF-ps" revise as follows: "LF-C-1,

LF-C-2, and LF-C-3", and correspondingly under "Equipment number" "RO-hps-1,2" revise as follows: "RO-hps-1,2, and 3."

- II.H.1.m. Appendix 5B, Table 5B-3, page APP T5B-3.1, under "Equipment number" "UV-TK-1,2" add "UV-TI-1,2", and correspondingly for KU-cb-1 under "Item Description" revise as follows: "containment berm at 1706-KE unload station," and correspondingly for KU-cb under "Item Description" revise as follows: "containment berm at 1706-KE load station."
- II.H.1.n. Appendix 5B, Table 5B-3, page APP T5B-3.2, under "Equipment number" "LF-ps" revise as follows: "LF-C-1, LF-C-2, and LF-C-3."
- II.H.1.o. Appendix 5B, Table 5B-3, page APP T5B-3.2, under ~~subheading "Equipment Number"~~ add "pH analyzer for LERF and 1706-KE," correspondingly under subheading "Unit operation" add "pH adjustment" and correspondingly under "Item description" add "pH controller for addition of sulfuric acid."
- II.H.1.p Appendix 5B, Table 5B-3, page T5B-3.2, under subheading "Equipment Number", change as follows: "VV-ps-1" and "VV-pal-1."
- II.H.1.q Appendix 5B, Table 5B-1, page APP T5B-1.3, under subheading "Equipment Number" add "VOC Analyzer-Liquid Effluent Retention Facility", correspondingly under subheading "Type" add "Process", correspondingly under subheading "Function" add "activates a visual and audible alarm when the organic level emitted from the charcoal unit exceeds 10 part per million" and correspondingly under subheading "Maintenance requirement" add "visual inspection with calibration and functional test".
- II.H.1.r Appendix 5B, Table 5B-2, page APP T5B-2.3, under subheading "Equipment Number" add "VOC Analyzer-Liquid Effluent Retention Facility", correspondingly under subheading "Type" add "Process", correspondingly under subheading "Function" add "activates a visual and audible alarm when the organic level emitted from the charcoal unit exceeds 10 part per million" and correspondingly under subheading "Calibration requirement" add "Functional test and calibration prior to loading or unloading of any loads at the LERF facility".
- II.H.1.s Appendix 5B, Table 5B-2, page APP T5B-2.1, for "Equipment number" "UV-pi" under subheading "Calibration requirement" change to "Multipoint calibration against a certified

pressure indicator, or replace with calibrated pressure indicator. Frequency: Every 6 months".

- II.H.2. The Permittees shall ensure that functional eyewash and emergency shower equipment is available for the duration of the RD&D Activity authorized by this permit, to include periods of subfreezing temperatures.

II.I. CONTINGENCY PLAN

- II.I.1. The Permittees shall follow the procedures outlined in the Contingency Plan included as Attachment 8 of this Permit, except that the following changes to Attachment 8 of this Permit are hereby made:

II.I.1.a Appendix 6A, pages APP 7A-1 through APP 7A-35, Table 2, page APP 7A-7, Table 3, page APP 7A-24, Table 6, page APP 7A-26, change the Hanford emergency response number from "811" to read "911".

II.I.1.b. Appendix 6B, pages 1 through 49, change the Hanford emergency response number from "811" to read "911".

II.I.1.c. Appendix 6C, pages 1 through 29, Appendix I, pages 1 through 31, and Attachment A, pages 1 through 16, change the Hanford emergency response number from "811" to read "911".

II.I.2. The single point-of-contact shall maintain the names, addresses, home and facility phone numbers of the Building Emergency Director and alternates for the 1706-KE Building and the 200 Area Tank Farms Building at all times and available for inspection by the Agency and the Department.

II.J. RECORDKEEPING AND REPORTING

In addition to the recordkeeping and reporting requirements specified elsewhere in this Permit, the Permittees shall comply with all applicable notifications, certifications and recordkeeping requirements described in 40 CFR §§ 264.73 and WAC 173-303-380.

II.K. CLOSURE

II.K.1. The Permittees shall meet the general performance standard as specified in 40 CFR § 264.111 and WAC 173-303-610(2) during closure of the RD&D Activity. Compliance with 40 CFR § 264.111 and WAC 173-303-610(2) shall require closure of the RD&D Activity in accordance with the Closure Plan, included as Attachment 10 of this Permit and

condition II.K. of this Permit, except that the following changes to Attachment 10 of this Permit are hereby made:

- II.K.1.a Section 8.1, Page 8-1, third paragraph, replace with the following "The operation of the waste water pilot plant is contingent upon operation of the 242-A Evaporator and availability of waste water for treatment".
- II.K.2. Minor deviations from the permitted closure procedures necessary to accommodate proper closure must be described in a narrative form with the closure certification statements. The Permittees shall describe the rationale for implementing minor changes as part of the narrative report. Within forty-five (45) days after completion of closure of the RD&D Activity the Permittees shall submit the certification statements and narrative report to the Administrator and Director.
- II.K.3. The Permittees shall amend the Closure Plan, Attachment 10 of this Permit, in accordance with 40 CFR § 264.112(b) and WAC 173-303-610(3) and -830(3) and (4), whenever necessary.
- II.K.4. The Permittees shall notify the Administrator and the Director by certified mail at least forty-five (45) days prior to the date the Permittees expect to begin closure of the RD&D Activity.
- ~~II.K.5. The Permittees shall close the RD&D Activity within the time limits specified in the Closure Plan, Attachment 10 of this permit.~~
- II.K.6. The Permittees shall decontaminate and/or dispose of all equipment used in the RD&D Activity as specified in the Closure Plan, Attachment 10 of this permit.
- ~~II.K.7. The Permittees shall certify that the RD&D activity has been closed in accordance with the specifications in the Closure Plan, Attachment 10 of this permit, as required by 40 CFR § 264.115 and WAC 173-303-610(6).~~

II.L. GENERAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE

The Permittees shall not manage ignitable, or reactive wastes at the RD&D Activity. The Permittees shall manage incompatible wastes at the RD&D Activity in accordance with this permit.

II.M. EQUIVALENT MATERIALS/INFORMATION

If certain equipment, materials, procedures, and administrative information (such as names, phone, numbers, addresses) are specified in this Permit, the Permittees are allowed to use an equivalent or superior. Use of such equivalent or superior items shall not be considered a modification of the permit, but the Permittees must place in the operating record (prior to institution of the revision) the revision, accompanied by a narrative explanation and the date the revision became effective. The Agency and Department may judge the soundness of the revision during inspections of the facility and take appropriate action. The format of tables or forms are not subject to the requirements of this permit and may be revised at the Permittees' discretion.

PART III- CONDITIONS FOR CONTAINER STORAGE**III.A. UNIT IDENTIFICATION**

The Permittees may store dangerous waste in containers in the units identified on Figures F4-1, F4-18, F4-19, F4-20 through F4-25 of Attachment 4 of this Permit and listed below, subject to the terms of this Permit:

Two Tank Trailer Containers to be located at either the 1706-KE Building as depicted on Figures F4-1, F4-23, F4-24 and F4-25 of Attachment 4 of this Permit, or the Liquid Effluent Retention Facility as depicted on Figures F4-20 through F4-22 of Attachment 4 of this Permit; except that the following change to Attachment 1 of this Permit is hereby made:

- III.A.1 Attachment 1, add a note to the LERF Topographic Map H-2-81570, that "LERF Basin 242AL41 will not be constructed."

III.B. WASTE IDENTIFICATION

The Permittees may store the following dangerous or hazardous wastes in the two Tank Trailer Containers identified in permit condition III.A subject to the terms of this Permit and as specified below:

- | III.B.1. <u>Waste Description</u> | <u>EPA Waste No.</u> |
|--|--------------------------------|
| 242-A Evaporator
Process Condensate | F001, F002, F003
F004, F005 |
| 242-A Evaporator
Process Condensate
spiked with the
constituents
listed on Table 3-2 of
Attachment 3 of this
Permit. | F001, F002, F003
F004, F005 |
- III.B.2. Maximum constituent concentration levels in the wastes specified in permit condition III.B.1. shall be limited to the concentration levels specified on Table 3-4 of Attachment 3 of the Permit.
- III.B.3. Maximum percent of total organics in waste limited to less than 10% by weight.

- | <u>III.B.4. Waste Description</u> | <u>State Waste No.</u> |
|--|-------------------------------|
| 242-A Evaporator
Process Condensate | WT02 State Only Waste
Code |
| 242-A Evaporator
Process Condensate
spiked with the
constituents
listed on Table 3-2 of
Attachment 3 of this
Permit. | WT02 State Only Waste
Code |
- III.B.5. Maximum constituent concentration levels in the wastes specified in permit condition III.B.4. shall be limited to the concentration levels specified on Table 3-4 of Attachment 3 of the Permit.
- III.B.6. Maximum percent of total organics in waste limited to less than 10% by weight.
- III.C. CONTAINER MANAGEMENT**
- III.C.1. The maximum amount of container storage and/or treatment shall be 10,000 gallons in tanker trailer containers, with each Tanker Trailer Container having a maximum capacity of 5,000 gallons as specified in Section 4.3.3.1, Attachment 4 of this Permit.
- III.C.2. The Permittees shall store containerized waste in the manner designated in Subsection 4.3, Figures 4-1, 4-2, F4-15 - F4-25, Appendix 4D of Attachment 4 of this Permit, except as otherwise specified in this permit, and in accordance with permit condition II.A.1.
- III.C.3. If the Tank Trailer Container holding dangerous or hazardous waste is not in "good condition" (e.g. severe rusting, apparent structural defects) or if it begins to leak, the Permittees shall transfer the dangerous or hazardous waste from such container to a container that is in good condition or otherwise manage the waste in compliance with the conditions of this permit.
- III.C.4. The Permittees shall ensure that the Tank Trailer Containers as described in Section 4.3.3.1, Attachment 4 of this permit are certified as specified in Attachment 4, Appendix 4D of this permit and that a copy of the certification is submitted to the Administrator and the Director prior to operation of the RD&D Activity.
- III.C.5. The Permittees shall ensure that the Tank Trailer Containers used for dangerous or hazardous waste

management are made of or lined with materials which will not react with and are otherwise compatible with the dangerous or hazardous waste to be stored.

- III.C.6. The Permittees shall not place incompatible wastes, or incompatible wastes and materials, in the Tank Trailer Containers and shall not place dangerous or hazardous waste in an unwashed Tank Trailer Container that previously held an incompatible waste or material.
- III.C.7. Incompatible wastes shall not be placed or stored within the same secondary containment area.
- III.C.8. The Permittees shall ensure that all dedicated and nondedicated equipment used for transfer of dangerous or hazardous wastes to or from the Tank Trailer Containers (pumps, hoses, piping, valves, etc.) is compatible with the wastes and is decontaminated before it is used for the transfer of incompatible wastes.
- III.C.9. The Permittees shall manage containers as specified in 40 CFR § 264.173 and WAC 173-303-630(5) and Attachment 4 of this permit.
- III.C.10. The Permittees shall not place ignitable or reactive wastes in the Tank Trailer Containers.

III.D. CONTAINMENT

- III.D.1. The Permittees shall construct and maintain the containment system as described in Sections 4.3.3.2.3, 4.3.3.3.3., and 4.3.3.4, Figure 4-21, 4-22, 4-23, 4-24, 4-25, 4-26 and Appendix 4E of Attachment 4 of this permit.
- III.D.2. The Permittees shall expose coupons of synthetic berm liner material to the same weather, stress and waste contact conditions as the synthetic berm liner material is exposed to provide a representative sample of the berm material deterioration. The Permittees shall perform coupon testing when a spill has occurred or at least annually using the following specified test methods on the coupon of the synthetic berm liner material to determine the following properties:

<u>Property</u>	<u>Test Method</u>
Weight	ASTM-D-751
Puncture	FTMS-101B
Tear	ASTM-D-751
Tensile	ASTM-D-751
Shear	MIL-T-52983F

Seam PropertyTest MethodPeel
ShearASTM-D-413
MIL-T-52983F

- III.D.3 The Permittees shall collect a sample of the coupon of the synthetic berm liner as specified in permit condition III.D.2. within twenty-four (24) hours of detection of a spill.
- III.D.4. Based on the coupon testing required under permit condition III.D.2., the Permittees shall submit the following to the Administrator and the Director within sixty days of collecting the coupon sample for testing:
- III.D.4.a. Record of the testing activities including the information specified in permit condition I.F.3.
- III.D.4.b. Determination, including supporting calculations and narrative evaluation, of whether the physical properties of the synthetic material are still adequate to withstand the stresses it is exposed to based on the synthetic material specifications in Appendix 4E of Attachment 4 of this permit and the supporting calculations in Appendix 4F of the Permit Application as last revised on March 19, 1993.
- III.D.5. If the tank trailer containers are determined to no longer be adequate based on testing results and evaluation under permit condition III.D.4., the Permittees shall immediately cease operation of the affected container storage unit until the following requirements are met:
- III.D.5.a. Replace the synthetic berm liner with the same materials and using the same procedures as specified for the synthetic berm liner's original placement in Attachment 4 of this permit.
- III.D.5.b. Submit documentation of the replacement of the synthetic berm and recommence operation of the affected container storage units as specified in permit conditions I.E.8., I.E.9., II.A.1., II.A.2. for construction of new units.

PART IV- CONDITIONS FOR STORAGE IN TANKS

IV.A. UNIT IDENTIFICATION

The Permittees may store dangerous wastes in the units identified on Figures 4-1 and 4-2 of Attachment 4 of this Permit and listed below subject to the terms of this Permit:

Two Double Shell Tanks to be located outside the 1706-KE Building as depicted on Figures 4-1 and 4-2 of Attachment 4 of this Permit. References to above identified Double Shell Tanks shall also include any associated piping, appurtenances, and the secondary containment provisions for these units.

IV.B. WASTE IDENTIFICATION

The Permittees may store the following dangerous wastes in the two Double Shell Tanks identified in permit condition IV.A. subject to the terms of this Permit and as specified below:

- | <u>IV.B.1.</u> | <u>Waste Description</u> | <u>EPA Waste No.</u> |
|----------------|--|--------------------------------|
| | 242-A Evaporator
Process Condensate | F001, F002, F003
F004, F005 |
| | 242-A Evaporator
Process Condensate
spiked with the
constituents listed
on Table 3-2 of Attachment
3 of this Permit | F001, F002; F003
F004, F005 |
| IV.B.2. | Maximum constituent concentration levels in the wastes specified in permit condition IV.B.1. shall be limited to the concentration levels specified on Table 3-4 of Attachment 3 of this Permit. These concentration levels shall be determined as specified in Attachment 3 of this Permit. | |
| IV.B.3. | Maximum percent of organics in waste limited to less than 10% by weight. The percent of organics in waste shall be determined as specified in Attachment 3 of this Permit. | |

IV.B.4. Waste Description State Waste No.

242-A Evaporator
Process Condensate WT02

242-A Evaporator
Process Condensate
spiked with the
constituents listed
on Table 3-2 of Attachment
3 of this Permit WT02

IV.B.5. Maximum constituent concentration levels in the wastes specified in permit condition IV.B.4. shall be limited to the concentration levels specified on Table 3-4 of Attachment 3 of this Permit. These concentration levels shall be determined as specified in Attachment 3 of this Permit.

IV.B.6. Maximum percent of organics in waste limited to less than 10% by weight. The percent of organics in waste shall be determined as specified in Attachment 3 of this Permit.

IV.C. DESIGN AND CONSTRUCTION

IV.C.1. The Permittees shall design, construct and maintain the Double Shell Tanks in accordance with Attachment 4 and in accordance with permit conditions II.A.1, II.A.2. and IV.C.

IV.C.2. The Permittees shall meet the following requirements prior to installation of the Double Shell Tanks:

IV.C.2.a. The Permittees shall submit to the Administrator and the Director a written assessment reviewed and certified by an independent, qualified registered professional engineer, in accordance with 40 CFR § 270.11(d) and WAC 173-303-810 attesting that the two Double Shell Tanks have sufficient structural integrity and are acceptable for the storing of the dangerous wastes specified in permit condition IV.B. At a minimum, this written assessment shall include the information required in 40 CFR § 264.192(a) and WAC 173-303-640(3) (a).

IV.C.2.b. The Permittees shall receive written approval from the Administrator and the Director of the acceptability of the two Double Shell Tanks.

IV.C.3. The Permittees shall review, pursuant to 40 CFR § 264.192(b) and WAC 173-303-640(2) (c), the structural integrity of the two Double Shell Tanks every five (5)

years starting from the date the two Double Shell Tanks are installed. The initial structural integrity review shall also include testing for tightness pursuant to 40 CFR § 264.192(d) and WAC 173-303-640(2)(e). Results of the integrity assessments shall be included in the Operating Record accessible at the facility. If either of the two Double Shell Tanks are found to be leaking or unfit for service, it must be immediately removed from service and the Permittees shall comply with 40 CFR § 264.196 and WAC 173-303-640(7). The Permittees may not return the tank to service until they have obtained the required certification.

- IV.C.4. The tank integrity assessments performed every five (5) years must be done by an independent, registered, professional engineer. The initial assessment may be performed by an independent, qualified registered professional engineer, or by an independent qualified installation inspector not affiliated with the tank vendor, certified by an independent, qualified registered professional engineer.
- IV.C.5. A visual inspection of the tanks' interior must be done by an independent registered professional engineer or an independent National Association of Corrosion Engineers (NACE) Level II or Level III certified inspector at least once during every three years starting from the date the two Double Shell Tanks are installed. The visual inspection of the Double Shell Tanks may be performed using remote video and/or photographic equipment. Results of the visual inspection shall be included in the RD&D Activity Operating Record accessible at the facility.

IV.D. TANK MANAGEMENT

- IV.D.1. The maximum amount of tank storage shall be 6,000 gallons in the Double Shell Tanks, with each Double Shell Tank having a maximum capacity of 3,000 gallons as specified in Subsection 4.1.2 of Attachment 4 of this Permit.
- IV.D.2. The Permittees shall store dangerous wastes in the Double Shell Tanks in the manner designated in Subsections 4.1.2, Figures 4-1 and 4-2, and Table 4-4 of Attachment 4 of this Permit, except as otherwise specified in this Permit, in accordance with permit condition II.A.1, and except that the following changes to Attachment 4 are hereby made:
- IV.D.2.a. Table 4-4, page T4-4.6, add the following additional critical parameters:
- IV.D.2.a.i. Under subheading "Equipment location" add "1706-KE Interim Storage Tanks (IST) 1,-2", correspondingly

under subheading "Control Parameter" add "liquid level", correspondingly under subheading "Hazard" add "waste water overflow resulting in environmental contamination", correspondingly under subheading "Control method(s)" add "liquid level control", correspondingly under subheading "Control device" add "liquid level control loop consisting of conductivity type limit switches IST 1-1s and IST 2-1s and feed control valves IST 1-cv and IST 2-cv", correspondingly under subheading "Control setpoint" add "liquid level corresponding to 90% of tank volume", correspondingly under subheading "Alarm setpoint and response" add "liquid level correspondingly to 90% of tank volume activates high level visual alarm IST 1-lah and IST 2-lah, audible alarm KG-aa, and automatically shuts down feed pumps P-3,4,5,7, and 8", correspondingly under subheadings "Instrument Range" and "Expected Range" add "NA", and correspondingly under subheading "Accuracy" add "+.1 inch".

- IV.D.2.a.ii. Add under subheading "Equipment location" add "1706-KE Interim Storage Tanks (IST) 1,-2", correspondingly under subheading "Control Parameter" add "leakage of wastewater", correspondingly under subheading "Hazard" add "environmental contamination", correspondingly under subheading "Control method(s)" add "double containment with daily inspection", correspondingly under subheading "Control device" add "double shell with access port", correspondingly under subheading "Control setpoint" add "no visible liquid between shells", correspondingly under subheading "Alarm set point and response" add "immediately manually shut down loading pump; troubleshoot and repair" and correspondingly under subheadings "Instrument Range", "Expected Range", "Accuracy" add "NA".
- IV.D.2.b. Table 4-4, page T4-4.1 and T4-4.2, change the critical parameters:
- IV.D.2.b.i. Under subheading "Control Device" for the LL LERF trailer load/unload station, change to "containment berm".
- IV.D.2.b.ii Under subheading "Control Device" for the KU 1706-KE trailer unloading station, change to "containment berm".
- IV.D.2.b.iii Under subheading "Control Device" for the KL 1706-KE trailer loading station, change to "containment berm".

IV.D.2.c. Figure F4-2 and Attachment 4, Appendix 4C, add the following information:

- IV.D.2.c.i. Label intermediate storage tanks as "IST-1" and "IST-2".
 - IV.D.2.c.ii. Label intermediate storage tanks limit switches as "IST-1-ls" and "IST-2-ls".
 - IV.D.2.c.iii. Label intermediate storage tanks control valves as "IST-1-cv" and "IST-2-cv".
 - IV.D.2.c.iv. Label Feed Tanker as "TT-tk-1" and the Receiving Tanker as "TT-tk-2".
 - IV.D.2.c.v. Label the pH high liquid level visual alarm "pH-lah" between the pH limit switch "pH-ls" and feedpump "Pump P-1."
 - IV.D.2.c.vi. Label the 1706 KE high level visual alarm "KU-lah" between the leak detector switch "KU-LDS" and the audible alarm KG-AA.
 - IV.D.2.c.vii. Change containment berm on Receiving Tank from "KL-CB" to "KL-CB-2"
 - IV.D.2.c.viii. Change vacuum relief on the Receiving Tanker from "TT-VI-2" to "TT-vr-2".
 - IV.D.2.c.ix. Add and label the 1706-KE vessel vent header low level pressure visual alarm "VV-pal-1" between the ventilation pressure switch "VV-PS" and the audible alarm "KG-AA".
 - IV.D.2.c.x. Label the 1706-KE vessel vent header high differential pressure visual alarm "VV-dpah", HEPA low differential pressure visual alarm "VV-dpal", differential pressure switch "VV-dpis", and the vent header low level pressure visual alarm "VV-pal-2" on the ventilation system.
 - IV.D.2.c.xi. Figures F4-21 and F4-22, pages F4-21 and F4-22, change "inflatable berm" to "containment berm" and label containment berm as "LL-CB-1" and label the existing LERF catch basin as "LL-CB-2."
- IV.D.3. The Permittees shall not place incompatible wastes, or incompatible wastes and materials, in the Double Shell Tanks, and shall not place dangerous or hazardous waste in an unwashed Double Shell Tank that previously held an incompatible waste or material.

- IV.D.4. The Permittees shall not place ignitable or reactive wastes in the Double Shell Tanks.
- IV.D.5. The Permittees shall ensure that all dedicated and nondedicated equipment used for transfer of dangerous or hazardous waste to or from the Double Shell Tanks (pumps, hose, piping, valves, etc.) is compatible with the wastes and is decontaminated before it is used for the transfer of incompatible wastes.
- IV.D.6. Tanks shall not be entered until vapors, if present, are below 10% of the Lower Explosive Limit (LEL).
- IV.D.7. The Permittees shall assure that the leak detection systems for the Double Shell Tanks are capable of collecting and detecting any leaked material. Such assurance shall require that the access port for leak detection be capable of detecting liquid which may be present at the lowest point of the interspace between the tank bottoms. The Permittees shall submit with the written assessment required in permit condition IV.C.2.a. a determination, certified by an independent registered professional engineer, of the location of the lowest point of the interspace area between the tank bottoms and documentation that the access port is located and designed to monitor this point.

PART V - CONDITIONS FOR TREATMENT UNITS**V.A. UNIT IDENTIFICATION**

The Permittees may treat dangerous or hazardous wastes in the units identified in Subsections 4.1 and 4.2 and on Figures 4-1 through 4-15 of Attachment 4 of this Permit and listed below subject to the terms of this Permit:

V.A.1. The following units located in the 1706-KE Building:

V.A.1.a. ph Adjustment

V.A.1.b. Backwashable Polymeric Filter

V.A.1.c. UV/Oxidation

V.A.1.d. Reverse Osmosis

V.A.1.e. Ion Exchange

V.A.1.f. Granular Activated Carbon

V.A.2. The following units located at the Liquid Effluent Retention Facility

V.A.2.a. ph Adjustment

V.A.2.b. Centrifugal Ultrafilter

V.A.2.c. Tubular Polymeric Ultrafilter

V.A.2.d. Polymeric Backwash Filter

References to above identified units shall also include any associated surge units, piping, appurtenances, and the secondary containment provisions for these units.

V.B. WASTE IDENTIFICATION

The Permittees may treat the following dangerous or hazardous wastes in the units identified in permit condition V.A. subject to the terms of this Permit and as specified below:

with Attachment 4 of this Permit and in accordance with permit conditions II.A.1, II.A.2. and V.C.

V.C.2. The Permittees shall meet the following requirements prior to operation of the units identified in permit condition V.A. under this Permit:

V.C.2.a. The Permittees shall submit to the Administrator and the Director a written assessment reviewed and certified by a qualified registered professional engineer, in accordance with 40 CFR § 270.11(d) and WAC 173-303-810 attesting whether the control setpoints which activate feed pump shutdown for units identified in permit condition V.A. are set at above or below the level which result in the hazard specified on Table 4-4 of Attachment 4. Based on this assessment, the Permittees shall modify any control setpoints that do not activate feed pump shutdown prior to occurrence of the hazard. The Permittees shall submit with the written assessment any revisions to Attachment 4 of this Permit and to Permit Conditions V.D. and V.E. to reflect these corrections to the control setpoints. These revisions to Attachment 4 and Permit Conditions V.D. and V.E. of this Permit to reflect these corrections to the control setpoints shall not be considered modifications to this permit and shall be implemented in accordance with permit condition II.M.

V.C.2.b. The Permittees shall submit Table 4-1 of Attachment 4 of this permit revised to designate the specific secondary containment details for all the units identified in permit condition V.A. consistent with the criteria specified in Subsection 4.1.2. These revisions to Table 4-1 of Attachment 4 of this permit shall not be considered modifications to this permit and shall be implemented in accordance with permit condition II.M.

V.D. TREATMENT UNIT MANAGEMENT

V.D.1. The Permittee shall be limited to the following treatment capacity:

V.D.1.a.i. Units located at the 1706-KE Building shall individually be limited to 5 gallons per minute, with the exception that the UV/Oxidation unit is allowed to operate up to 25 gallons per minute, in a recycle mode, and the Reverse Osmosis Unit which is limited to 12 gallons per minute.

V.D.1.a.ii. Units located at the 1706-KE Building shall collectively be limited to 5000 gallons per week.

- V.D.1.b.i. Units located at the Liquid Effluent Retention Facility shall individually be limited to 5 gallons per minute, with the exception that the pH adjustment unit is allowed to operate up to 15 gallons per minute.
- V.D.1.b.ii. Units located at the Liquid Effluent Retention Facility shall collectively be limited to 152,000 gallons during any calendar month.
- V.D.2. The Permittees shall operate and monitor the treatment units as specified in Subsection 4.1.3, 4.1.5, 4.2, 4.3.3.2.1, Figures 4-1 through 4-14, 4-20 through 4-24, Appendix C, and Table 4-4 of Attachment 4 of this Permit, under permit condition V., except the following changes are hereby made to Attachment 4 of this Permit:
- V.D.2.a. Table 4-4, page T4-4.3, under "UV-vsi uv/ox reactor vessel" for "high temperature" under subheadings "Control method(s)" and "Control Device" add "Temperature indicators UV-TI-1 and UV-TI-2".
- V.D.2.b. Table 4-4, page T4-4.3, under "LF filtration module at LERF" under subheadings "Control method(s)" and "Control Device" add "controllers LF-C-1, LF-C-2, and LF-C-3" and change "pressure switches" to "pressure indicators LF-pi-1, LF-pi-2, LF-pi-3, LF-pi-6, and LF-pi-7."
- V.D.2.c. Table 4-4, page T4-4.4, under "RO reverse osmosis module" for "Control Method(s)" "Vendor Installed pressure switch shuts down feed pumps" and "Procedural Control" under subheading under subheading "Control Setpoint" change control setpoint to "900 psig", and under subheading "Alarm Setpoint and Response" change setpoint to "900 psig" and feedpumps "P-9, P-10, and P-11."
- V.D.2.d. Table 4-4, page T4-4.4, "pH-tk-1 pH adjustment tank", under subheading "Alarm setpoint and Control", change to "automatically shuts down feed pump KU-pmp."
- V.D.2.e. Table 4-4, page T4-4.6, for "VV 1706-KE vessel vent system" under subheading "Control device" add "vacuum switch & indicator VV-dpis" and correspondingly under subheading "Alarm setpoint and response" add "Shall initiate immediate automatic shutdown of all treatment unit operations to commence with feedpump P-1".
- V.D.2.f. Table 4-4, page T4-4.6, under subheading "Equipment location" add "VOC Analyzer-1706 KE Building", correspondingly under subheading "Control Parameter" add "organic concentration", correspondingly under subheading "Hazard" add "primary charcoal unit breakthrough",

correspondingly under subheading "Control method(s)" add "organic concentration detection", correspondingly under subheading "Control device" add "organic vapor analyzer", correspondingly under subheading "Control setpoint 10 parts per million" "Alarm setpoint and response" add "organic level of 10 parts per million activates a visual and audible alarm, and requires shut down of the treatment units and replacement of the charcoal unit if on weekend, shutdown during operating week if carbon not replaced within 72 hours of triggering the alarm", correspondingly under subheadings "Instrument Range" add "0-100 ppm" and "Expected Range" add "NA", and correspondingly under subheading "Accuracy" add ".1 ppm using benzene as the calibration gas."

- V.D.2.g Table 4-4, page T4-4.6, under subheading "Equipment location" add "VOC Analyzer-Liquid Effluent Retention Facility", correspondingly under subheading "Control Parameter" add "organic concentration", correspondingly under subheading "Hazard" add "charcoal unit breakthrough", correspondingly under subheading "Control method(s)" add "organic concentration detection", correspondingly under subheading "Control device" add "organic vapor analyzer", correspondingly under subheading "Control setpoint 10 parts per million" "Alarm setpoint and response" add "organic level of 10 parts per million activates a visual and audible alarm, and requires immediate manual shut down of the Liquid Effluent Retention Facility transfer operation and replacement of the charcoal unit," correspondingly under subheadings "Instrument Range" add "0-20 ppm" and "Expected Range" add "NA", and correspondingly under subheading "Accuracy" add ".2 ppm using benzene as the calibration gas."
- V.D.2.h. Figure 4-3, page F4-3, change the instrument legend for limit switches to "LS" and add "PR Rupture Disk" to the instrument legend.
- V.D.2.i. Figure 4-3, page F4-3, change the temperature indicator on the feed pump to "TI-1".
- V.D.2.j. Figure 4-3, page F4-3, change the temperature indicator on the Perox-Pure Module to "TI-2".
- V.D.2.k. Figure 4-3, page F4-3, add the rupture disk to the right of the flow switch "FK-1" on the Perox-Pure Module and label as "UV-pr".
- V.D.2.l. Table 4-4, Page T4-4.6, for "Equipment Number" "VV 1706-KE vessel vent system", under subheading "Control devices", add "VV-psi", and correspondingly under subheading

"Control Setpoint" add "0.0 inch water or greater", and correspondingly under subheading "Alarm Setpoint and response", add "Automatic immediate shut down of feed pump P-1 and vessel vent system; troubleshoot and repair/replace failed equipment."

V.D.2.m. Table 4-4, Page T4-4.6, for "Equipment Number" "VV 1706-KE vessel vent system", under subheading "Control devices", add "VV-psi", and correspondingly under subheading "Control Setpoint" "-0.5 inch water or greater", and correspondingly under subheading "Alarm Setpoint and response", add "Immediately activates a high pressure alarm VV-pah."

V.D.3. During start-up and shut-down of the units identified in permit condition V.A., dangerous or hazardous waste may not be introduced into the units unless the units are operating as specified in permit condition V.E.

V.D.4. All control parameters specified in Permit condition V.E. must be continuously monitored and recorded.

V.D.5.a. The system for automatic shutoff of feedpumps as specified in Permit condition V.E. shall be tested at a minimum frequency of monthly or every 100 operating hours, whichever results in the greater frequency, to verify operability.

V.D.6. The Permittees shall not introduce dangerous or hazardous waste into or operate the units identified in Permit condition V.A. unless the system for automatic shutoff of feedpumps is operational in accordance with Section 4.1.5, Attachment 4 of this Permit and Permit condition V.E.

V.D.7. The Permittees shall maintain a record of each activation of the system for automatic shutoff of feedpumps as specified in Permit condition V.E. This record shall include the following:

V.D.7.a The date, time and cause of the activation;

V.D.7.b The corrective action taken; and

V.D.7.c The duration of the activity causing the activation.

V.E. OPERATING CONDITIONS

The Permittees shall operate the treatment units only under the following conditions and as specified in Section 4.1.5, Attachment 4 and Permit condition V. of this permit:

V.E.1. pH Adjustment.

The pH adjustment unit shall operate within the following conditions and as specified in Attachment 4, Section 4.1.5.1 of this permit:

- V.E.1.a** The pH analyzer on the second chamber of the pH adjustment vessels shall monitor the outlet pH for the addition of sulfuric acid to the 1706-KE Facility pH adjustment tank PH-tk-1 and the LERF pH adjustment tank and shall alarm when the pH is less than or equal to 4.0 or is greater than or equal to 7.0.
- V.E.1.b** The pH analyzer on the second chamber of the pH adjustment vessels shall monitor the outlet pH for the addition of sulfuric acid to the 1706-KE Facility pH adjustment tank PH-tk-1 and the LERF pH adjustment tank and shall automatically shut down the P-2 metering pump and the feed pump KU-pmp when the pH is less than or equal to 3.0 or greater than or equal to 8.0.
- V.E.1.c** The pH adjustment tank PH-tk-1 liquid level shall be monitored by liquid level control loop including a conductivity limit switch PH-is and feed control valve PH-cv, and shall automatically activate a high level visible level alarm pH-lah, and audible alarm KG-aa, and automatically shuts down feed pump KU-pmp, when the liquid level exceeds 90% of the tank volume.
- V.E.2. Ultraviolet (UV) Oxidation.**
- The Ultraviolet (UV) Oxidation unit shall operate within the following conditions and as specified in Attachment 4, Section 4.1.5.2, of this permit:
- V.E.2.a** Automatic shutdown of feed-pump P-5 shall be triggered by pressure switch UV-ps when the pressure of the Ultraviolet (UV) Oxidation unit equals or exceeds 15 psig.
- V.E.2.b** The operator shall immediately manually shutdown feed-pump P-5 when the pressure exceeds 15 psig based on pressure indicator UV-pi.
- V.E.2.c** Automatic shutdown of feed pump P-5 and actuation of a visible alarm shall be triggered by temperature switches UV-TK-1 or UV-TK-2 when the temperature of the Ultraviolet (UV) Oxidation Unit equals or exceeds 150°F.
- V.E.2.d** The operator shall immediately manually shutdown feed-pump P-5 when the temperature of the Ultraviolet (UV) Oxidation

Unit equals or exceeds 150° F based on temperature indicators UV-TI-1 or UV-TI-2.

V.E.2.e The UV door closure limit switches UV-ls-1 shall deactivate electric power to the lamps if the door closure is open.

V.E.3. Reverse Osmosis.

The reverse osmosis unit shall operate within the following conditions and as specified in Attachment 4, Section 4.1.5.3, of this permit:

V.E.3.a Automatic shutdown of feed pumps P-9, P-10 and P-11 and actuation of visible and audible alarms shall be triggered by pressure switches RO-hps-1, RO-hps-2, or RO-hps-3 when the pressure of the reverse osmosis (RO) module equals or exceeds 900 psig.

V.E.3.b The operator shall immediately manually shutdown feed pumps P-9, P-10, and P-11 when the pressure of the reverse osmosis (RO) module exceeds 900 psig based on pressure indicators RO-pi-3, RO-pi-6, or RO-pi-12.

V.E.4. Ion Exchange.

The Ion Exchange unit shall be operated as specified in Attachment 4, Section 4.1.5.3.2, of this permit.

V.E.5. Filtration.

The filtration unit shall operate within the following conditions and as specified by Attachment 4, Section 4.1.5.4, of this permit:

V.E.5.a Automatic shutdown of feedpumps LF-pump 1 and 2 or P-3 and actuation of visible alarm shall be triggered by controller LF-C-1 when the pressure of the LERF filtration module equals or exceeds 150 psig as indicated on pressure indicators LF-pi-1 and LF-pi-2.

V.E.5.b Automatic shutdown of feedpumps LF-pump 4 or P-3 and actuation of visible alarm shall be triggered by controller LF-C-2 when the pressure of the LERF filtration module equals or exceeds 150 psig as indicated on pressure indicator LF-pi-3.

V.E.5.c Automatic shutdown of feedpumps LF-pump 5 and 6 or P-3 and actuation of visible alarm shall be triggered by controller LF-C-3 when the pressure of the LERF filtration

module equals or exceeds 150 psig as indicated on pressure indicators LF-pi-6 and 7.

V.E.6. Ventilation System.

The ventilation system shall operate within the following conditions and as specified in Attachment 4, Section 4.1.3, of this permit:

- V.E.6.a The operator shall immediately manually shut down feed pump P-1 when the high differential pressure of the KE vessel vent HEPA filtration system exceeds 3.5 inches of water based on differential pressure gage VV-dpc.
- V.E.6.b. The high differential pressure of the 1706-KE vessel vent HEPA filtration system VV-hepa shall be monitored by a differential pressure gauge VV-dpc and the HEPA filters shall be replaced when the differential pressure exceeds 3.5 inches of water.
- V.E.6.c. The operator shall immediately manually shut down feed pump P-1 when the low differential pressure of the KE vessel vent HEPA filtration system is less than 0.3 inches of water based on differential pressure gage VV-dpc.
- V.E.6.d. The low differential pressure of the 1706-KE vessel vent HEPA filtration system shall be monitored by a differential pressure gauge VV-dpc and the HEPA filters shall be replaced if the differential pressure is less than 0.3 inches of water.
- V.E.6.e. The low differential pressure of the 1706-KE vessel vent system shall be monitored by a differential pressure indicating switch VV-dpis and will activate a low differential pressure alarm VV-dpal when the differential pressure is 0.5 inches of water or less.
- V.E.6.f. Automatic immediate shutdown of feed pump P-1 shall be initiated when the low differential pressure of the vessel vent system is 0.25 inches of water or less as indicated on the differential pressure indicating switch VV-dpis.
- V.E.6.g. Automatic shutdown of the 1706-KE vessel vent system and actuation of visible alarm VV-pal and audible alarm KG-aa shall be triggered when the vacuum switch VV-psi is 0.0 inches or greater of water.
- V.E.6.h. The operator shall immediately manually shutdown feed pump P-1 when the vacuum switch VV-ps is -0.5 inches or greater of water as indicated on the 1706-KE vessel vent pressure indicating switch VV-dpis.

- V.E.6.i. The organic concentration which exceed 10 parts per million shall activate a visual and audible alarm and shall require shut down of the treatment units within 24 hours during pilot plant operation or within 72 hours if the breakthrough occurs during pilot plant shutdown.
- V.E.6.j. The organic concentration of 10 parts per million shall activate a visual and audible alarm, and shall require immediate manual shut down of the Liquid Effluent Retention Facility transfer operation and replacement of the charcoal unit.
- V.E.6.k. The Permittees shall not exceed 100% of the rated capacity of the first charcoal filter and shall change-out the first charcoal filter within 24 hours of detecting breakthrough during operational periods or within 72 hours of breakthrough during nonoperational periods. The Permittees shall change out the charcoal filter so as not to exceed 100% of the rated capacity of the charcoal filter based upon either of the following methods:
- V.E.6.k.i Complete and maintain a running count of the volatile organic inventory on a per batch basis of spiked and or non-spiked constituents and change-out the charcoal filter so as not to exceed 100% of the capacity of the carbon filter; The volatile organic inventory processed during the 24 hour operating period following detection of breakthrough shall be included as capacity used for the second charcoal unit which is moved up to the position of the first charcoal filter or
- V.E.6.k.ii Change out the charcoal filter after processing a maximum of seven (7) one-thousand gallon batches (7,000 gallons) of spiked waste water or three-hundred and forty three (343) one-thousand gallon batches (343,000 gallons) of non-spiked waste water. For purposes of this Permit condition, in the event of processing both spiked and non-spiked waste water the following calculation shall be used to determine change-out:
- $$(14\text{lbs}/1,000 \text{ gallons of spiked waste water}) \times (\# \text{ gallons of spike waste water processed}) + (.32 \text{ lbs}/1,000 \text{ gallons of non-spiked waste water}) \times (\# \text{ gallons of non-spike waste water processed}) = 110 \text{ lbs.}$$
- The gallons of waste water processed during the 24 hour operating period following detection of breakthrough is included in the quantity of gallons

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processed for the second charcoal unit which is moved up to take the position of the first charcoal filter.