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Risk-Based Approach for Management of PCB Remediation Waste from the V-Tanks

Idaho National Engineering and Environmental Laboratory

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1. Title: Risk-Based Approach for Management of PCB Remediation Waste from the V-Tanks Page 1 of 2

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5. Summary: The management approach outlined in this document for the PCBs contained within the V-Tanks provides a risk-acceptable approach as defined in 40 CFR 761.61(c). This document will be incorporated by reference in the ROD Amendment for the V-Tanks that is being developed concurrently. Signature of that ROD Amendment by the agencies (EPA, DOE, and State of Idaho) constitutes CERCLA approval equivalent to the TSCA approval needed for projects not addressed under the INEEL Federal Facility Agreement and Consent Order. This approval is necessary for the operation of processes such as chemical oxidation/reduction that are capable of destroying the PCBs in liquid PCB Remediation Waste and for the conversion of that liquid PCB Remediation Waste into solid PCB Remediation Waste. This EDF documents that this approach is acceptable when considered from a risk management point of view.

6. Review **(R)** and Approval **(A)** and Acceptance (Ac) Signatures:
(See instructions for definitions of terms and significance of signatures.)

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ACRONYMS

ALARA	as low as reasonably achievable
AOC	area of contamination
ARAR	applicable or relevant and appropriate requirement
BEHP	bis-2-ethylhexyl phthalate
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DSA	documented safety analysis
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
EDF	Engineering Design File
EPA	U.S. Environmental Protection Agency
ESD	explanation of significant differences
FFA/CO	Federal Facility Agreement and Consent Order
HEPA	high-efficiency particulate air
HMR	Hazardous Materials Regulations
ICDF	INEEL CERCLA Disposal Facility
IDEQ	Idaho Department of Environmental Quality
IDHW	Idaho Department of Health and Welfare
INEEL	Idaho National Engineering and Environmental Laboratory
ISMS	Integrated Safety Management System
LDR	land disposal restrictions
MCP	management control procedure
mg/kg	milligrams per kilogram
nCi/g	nanocuries per gram
PCB	polychlorinated biphenyl

PCE	tetrachloroethylene
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RWP	Radiation Work Permit
TCA	1, 1, 1-trichloroethane
TCE	trichloroethylene
TP	transportation plan
TSCA	Toxic Substances Control Act
TSD	Transportation Safety Document
UTS	universal treatment standard
VOC	volatile organic compound
WAC	waste acceptance criteria

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Risk-Based Approach for Management of PCB Remediation Waste from the V-Tanks

1. INTRODUCTION

The U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the State of Idaho (the Agencies) have entered into a Federal Facility Agreement and Consent Order (FFNCO) (DOE-ID, EPA, and IDHW 1991) to manage the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) cleanup at the Idaho National Engineering and Environmental Laboratory (INEEL). These agencies have selected chemical oxidatiodreduction with stabilization as the preferred treatment alternative for the waste presently stored within the V-Tanks, which are located at Test Area North (TAN) at the INEEL. EPA's Toxic Substances Control Act (TSCA) requires approval of polychlorinated biphenyl (PCB) treatment systems. TSCA provides the option of obtaining this approval under a risk-based petition for PCB remediation waste (40 Code of Federal Regulations [CFR] 761.61(c)) for waste such as that contained within the V-Tanks.

This engineering design file (EDF) will be placed in the INEEL Administrative Record and referenced in the *Record of Decision Amendment for the V-Tanks (TSF-09 and TSF-18) at Test Area North, Operable Unit 1-10* (the V-Tanks ROD Amendment) (DOE/ID, EPA, and IDEQ 2003b). The V-Tanks ROD Amendment, which is being prepared concurrently with this EDF, will document the Agencies' selection of a new remedy for the V-Tanks cleanup. Approval of the V-Tanks ROD Amendment will be the CERCLA equivalent of the approval that would have been required under TSCA if this were not a CERCLA remediation project.

2. BACKGROUND

2.1 History

The V-Tanks are being remediated as part of a CERCLA response action covered by the FFNCO. The original remedy for the V-Tanks was established in the *Final Record of Decision for Test Area North, Operable Unit 1-10* (DOE-ID, EPA, and IDHW 1999a). The Agencies must modify the portion of the remedy involving cleanup of the V-Tanks contents because the original remedy is no longer available. This document is being prepared in support of the V-Tanks ROD Amendment.

The V-Tanks are designated as INEEL CERCLA sites TSF-09 and TSF-18. These tanks were part of the Intermediate Level Radioactive Waste Management System at TAN (see Figure 1). The V-Tanks include three 10,000-gal (37,850-L) underground storage tanks (Tanks V-1, V-2, and V-3) and one 400-gal (1,514-L) underground storage tank (Tank V-9). As shown in Table 1, the combined volume of waste in the tanks is approximately 12,000 gal, including 2,000 gal of sludge and 10,000 gal of liquid (INEEL 2003b).

2.2 Waste Description

The V-Tanks, installed in the 1950s, were used to collect radioactive wastes during 30 years of operation. Wastes received were primarily the result of nuclear research activities. Tank V-9 served primarily as a solids separation unit while the other tanks were designed for accumulation and storage. The tanks contents comprise an aqueous sludge contaminated with radionuclides, inorganic contaminants (including Resource Conservation and Recovery Act [RCRA] toxic metals), and toxic organic compounds (including

trichloroethylene [TCE], tetrachloroethylene [PCE], and PCBs). Nearly all of the contaminants in the V-Tanks are found in the solid phase of the sludge.

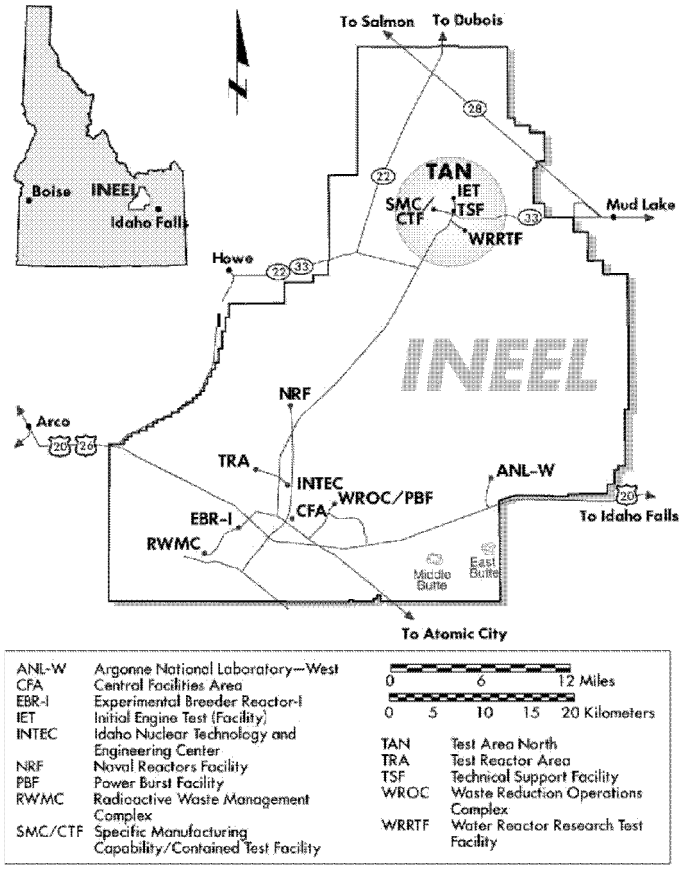

Figure 1. Location of Test Area North at the Idaho National Environmental and Engineering Laboratory.

Table 1. V-Tanks capacity and volume of contents (in gallons; data rounded).

Tank	Capacity	Liquid	Sludge	Total
V-1	10,000	1,160	520	1,680
v-2	10,000	1,140	460	1,600
v-3	10,000	7,660	650	8,310
v-9	400	70	250	320
Total	30,400	10,030	1,880	11,910

Source: *Technology Evaluation Report for the V-Tanks, TSF-09/18, at Waste Area Group 1, Operable Unit 1-10* (DOE-ID 2003b)

Tables 2 and 3 list the primary contaminants in the V-Tanks that affect the selection of an effective treatment remedy (DOE-ID, EPA, and IDEQ 2003b). These tables list the overall average concentration of the major RCRA constituents and radionuclides in the V-Tanks. These values were used in evaluating the effectiveness and operability of various treatment alternatives. This evaluation led the Agencies to select chemical oxidatiodreduction with stabilization as the appropriate treatment process for this waste.

Table 2. V-Tanks major RCRA constituents.

Constituent	mg/kg
Antimony	0.902
Arsenic	0.359
Barium	12.4
Beryllium	1.11
Cadmium	2.34
Chlorides	106
Chromium	297
Lead	36.1
Mercury	79.2
Nickel	16.4
Silver	18.4
Tetrachloroethylene (PCE)	118
1, 1, 1-Trichloroethane (TCA)	52.2
Trichloroethylene (TCE)	426
Bis-2-ethylhexyl phthalate (BEHP)	454
Aroclor-1260 (a PCB)	17.9

Source: *V-Tanks ROD* ***Amendment*** (DOE-ID, EPA, and IDEQ 2003b)

Table 3. V-Tanks maior radionuclides.

Radionuclides	nCi/g
Cesium-137	988
Strontium-90	1,840
Transuranics	4.27

Source: *V-Tanks ROD* ***Amendment*** (DOE-ID, EPA, and IDEQ 2003b)

2.3 PCB Content

The waste in the tanks will be managed as one homogenous waste stream. The solids will not be separated from the aqueous phase. Because there are free liquids present, TSCA requires that the waste be managed as a multi-phase solution. The average PCB concentration of the solids phase is approximately 294 mg/kg. The average PCB concentration of the aqueous phase is less than 0.1 mg/kg. The overall average PCB concentration of all the waste currently in the V-Tanks is approximately 18 mg/kg.

If the generator chooses not to separate the phases of a multi-phase solution, then TSCA regulations require that the generator manage that waste stream according to the requirements that apply to the phase with the highest concentration. The regulations, therefore, require the wastes in the V-Tanks to be managed as if they were at a concentration of 294 mg/kg (see Table 4).

Table 4. Average PCB concentration in V-Tanks waste.

Tank	Liquid Phase (mg/kg)	Solid Phase (mg/kg)	Combined Sludge (mg/kg)
V-1	<0.1	394	35
v-2	<0.1	218	24
v-3	<0.1	310	10
v-9	0.036	285	96
Total	<0.1	294	18

Source: EDF-3858, "V-Tank analytical Data – Calculated Averages and Upper Confidence Limits" (INEEL, 2003h)

2.4 Lack of Available Treatment

The V-Tanks contain a variety of hazards, which makes finding a treatment alternative difficult. An acceptable treatment process conducted at a location other than the V-Tanks CERCLA site would not only require both RCRA and TSCA permits, but the facility would also have to be able to manage appropriate levels of radionuclides. In the original plan, this waste was to be shipped to a vitrification facility in the State of Washington that was being built to meet the necessary conditions. However, that facility never received an operating permit and there are no current plans to start the unit. DOE operates a facility in Tennessee that meets most of these conditions. However, the waste acceptance criteria (WAC) for this facility does not allow radioactivity at the levels contained within the V-Tanks. There are no known facilities within the United States that are capable of treating this waste at this time. The V-Tanks ROD Amendment, being prepared concurrently with this EDF, will select a new remedy that will be specifically designed to address these multiple hazards.

3. PLANNED TREATMENT PROCESS DESCRIPTION

The Conceptual Design Report (INEEL 2003b) proposed a design where the waste from the V-Tanks will be removed and treated in small batches to destroy the hazardous organic contaminants. Chemical oxidatiodreduction with stabilization has been selected as the best way to achieve this destruction. Primary considerations in selecting the new remedy included (1) destruction to meet regulatory limits, (2) off-gas emission levels, (3) secondary wastes produced, (4) process safety, (5) process simplicity, and (6) operation in a radioactive environment, with alpha, beta, and gamma emitters present in the waste. Chemical oxidatiodreduction was chosen because of low operating temperature (<100ºC) and low off-gas flow rate as well as the ability to be tailored to a specific waste stream, and to recover from any process upsets.

Due to the complex nature of the V-Tanks waste stream, the INEEL is sponsoring both cold and hot bench-scale studies that will assist in developing an appropriate recipe that details the best oxidant or reductant to use along with appropriate residence times, pH control, temperature control, and the possible addition of specific catalysts. The waste in the V-Tanks will be consolidated and blended as appropriate to produce a single homogenous waste stream that can undergo routine treatment according to the recipe developed in the bench-scale studies.

The recipe developed as part of the bench-scale studies will be tailored to target the destruction of specific organic compounds (especially TCE, 1, 1, 1-Trichloroethane [TCA], and PCE) to meet applicable or relevant and appropriate requirements (ARARs), land disposal restrictions (LDRs) and reduce PCBs to the extent practical. Depending on further characterization efforts, other underlying hazardous constituents, such as bis-2-ethylhexyl phthalate (BEHP), may be specific targets for destruction. Although the laboratory studies will be designed to optimize treatment of volatile organic compounds (VOCs), it is

expected that some PCB destruction will take place. The extent of PCB destruction is uncertain at this time

The Conceptual Design Report called for the off-gas from the treatment process to be controlled to prevent unacceptable emissions. First, as part of the treatment process, a condenser would recycle most of the volatilized water and organics back into the treatment process. Depending upon the success of the laboratory studies, the volatile halogenated organic compounds may be destroyed ex Situ rather than be recycled back to the main waste stream. Secondary off-gas controls typically include high-efficiency particulate air (HEPA) filters, activated carbon absorbents for VOCs and, potentially, sulfur-impregnated granular activated carbon filters to control mercury. Details of the off-gas system and associated operating limits will be presented in the safety analysis.

The chemical oxidatiodreduction step will be followed by a stabilization step that will produce a solidified waste form and will reduce the mobility of both the RCRA toxic metals and the radioactive constituents. Any PCBs that are not destroyed in the chemical oxidatiodreduction step will be rendered non-liquid in this step. The solidified waste will then be sent to the INEEL CERCLA Disposal Facility (ICDF) for disposal. Prior to shipping, the waste will be tested to confirm that it complies with RCRA LDRs and the ICDF WAC. The ICDF is regulated under CERCLA and meets the substantive requirements of a RCRA Subtitle C permit.

4. DISPOSAL

The ICDF, which is identified in the V-Tanks ROD Amendment as the selected disposal facility, is a landfill with an engineered multiple-liner system designed to safely contain contaminated soils from cleanup operations across the INEEL. More specifically, the ICDF is designed for the disposal of hazardous, low-level, mixed low-level, and PCB-contaminated soil and debris wastes that (1) are generated by CERCLA remedial and removal actions at the INEEL and (2) meet the ICDF WAC. The ICDF landfill meets the substantive requirements of PCB landfill design and construction requirements under RCRA Subtitle C (42 USC 6921 et seq.), the Idaho Hazardous Waste Management Act (Idaho Code § 39-4401), DOE Order 435.1, and TSCA (15 USC 2601 et seq.). The ICDF landfill utilizes a modular design consisting of two cells. The disposal cells, including a buffer zone, cover approximately 40 acres, and have a disposal capacity of about 510,000 yd^3. The facility is designed for an operating life of 15 years, a post-closure period of 30 years, and an expected cap design-life of 1,000 years.

The ICDF WAC was developed through a risk-based determination based on the maximum contaminant design inventory and planned maximum disposal capacity (see Appendix A to *Waste Acceptance Criteriafor ICDF Landjll* [DOE-ID 2003b]). The PCB concentration in the treated V-Tanks waste will be significantly less than the ICDF WAC PCB risk-based limit and will represent only a miniscule fraction of the volume of waste being disposed of at the ICDF. For these reasons, the disposal of the remaining PCBs after treatment of the V-Tanks wastes is expected to have no measurable effect on the long-term risk to the ICDF.

5. REGULATORY BASIS

In the preamble language *(Federal Register* [FR] Vol. 63, No. 124, page 35407, Monday, June 29, 1998) where EPA promulgated rules for PCB Remediation Waste, the EPA responded to commenters' questions concerning the applicability of 40 CFR 761.61 as an applicable ARAR by stating that:

> "EPA anticipates that today's rule will be a potential ARAR at CERCLA sites where PCBs are present. EPA would expect that CERCLA cleanups would

typically comply with the substantive requirements of one of the three options, provided by 761.61, upon completion of the cleanups. This decision would not be made by the facility, but in the remedy selection process."

The remedy selection process for the V-Tanks site is the V-Tanks ROD Amendment, being developed concurrently with this EDF. Through this process the Agencies (EPA, IDEQ, and DOE) have selected the appropriate remedy as chemical oxidatiodreduction followed by stabilization and specified 40 CFR 761.61(c) as the ARAR applicable for management of PCB contaminated wastes for this remedial action. 40 CFR 761.61(c) allows for the treatment and solidification of multi-phase solutions under a risk-based approval process. Specifically, the regulation allows "any person wishing to sample, cleanup, or dispose of PCB remediation waste in a manner other than prescribed...to apply in writing to the EPA Regional Administrator in the Region where the site is located' for approval of a risk-based method that "will not pose an unreasonable risk to health or the environment."

The need for this risk-based approval and the proposed management approach are outlined as follows:

- Under TSCA regulations, separate analyses of the liquid phase (< 0.1 mg/kg) and the sludge phase (294 mg/kg) are required. If the waste is not phase-separated, the combined waste must be managed as if the combined waste were at the concentration of the higher phase (40 CFR 761.1(b)(4)(iv)). The waste in the V-Tanks will, therefore, be managed as a multi-phasic waste, that is, as if the concentration were 294 mg/kg rather than the approximate 18 mg/kg average concentration that now exists.

- The PCBs in the V-Tanks waste are the result of historical spills or unauthorized releases of PCB-containing materials from nuclear testing and development activities at TAN. Drains from within the TAN facilities collected spilled materials and routed the waste to the V-Tanks. The V-Tanks were installed for the express purpose of collecting waste products from TAN activities for appropriate management (i.e., as pollution control devices). The waste in the V-Tanks (an aqueous industrial sludge) meets the definition of bulk PCB remediation waste under 40 CFR 761.3.

- Bulk PCB remediation wastes with a concentration greater than 50 ppm may be disposed of without treatment in a hazardous waste landfill (40 CFR 761.61(a)(5)(iii)). For CERCLA wastes, the ICDF is equivalent to a hazardous waste landfill and, therefore, may receive the V-Tanks wastes for disposal. The V-Tanks waste also meets the ICDF WAC for PCBs established at 500 ppm.

- TSCA prohibits the land disposal of wastes with PCB concentrations greater than 50 mg/kg that fail the paint filter test. TSCA also prohibits the solidification of these wastes to pass the paint filter test unless a risk-based petition is approved under 40 CFR 761.61(c). Implementation of the selected remedy from the OU 1-10 ROD Amendment will result in a waste that will pass the paint filter test and will be acceptable for disposal at ICDF.

- The selected remedy of chemical oxidatiodreduction followed by stabilization will destroy some of the PCBs thereby requiring EPA approval under 40 CFR 761.61(c).

The ARAR 40 CFR 761.61(c), as mentioned above, provides for the submittal of a risk-based application showing the planned treatment for the V-Tanks waste, the final disposition at the ICDF, and a demonstration of the acceptable risk resulting from management of the wastes. This EDF meets the requirements for that application. This document will be placed in the Administrative Record for OU

1-10. Signature by EPA of the OU 1-10 ROD Amendment constitutes the CERCLA equivalent of the approval required under TSCA, confirming that EPA accepts that the proposed management approach does not pose an unreasonable risk of injury to health or the environment.

6. SAFETY/RISK

At the heart of the INEEL's safety success is the Integrated Safety Management System (ISMS) that prescribes the procedures and processes necessary to do work safely at the INEEL. The Program Description Document (PDD)-1004, *INEEL Integrated Safety Management System* (INEEL 2003) states:

> "The fundamental premise of the INEEL ISMS is to "Perform Work Safely." This is achieved by implementing formal processes that provide rigor and discipline to work execution. The ISMS protocol directs that all work be done safely through appropriate prescriptive work planning and execution. Planning and execution are driven by worker safety requirements that demand the necessary tools, training, procedures, equipment, and behaviors."

For cleanup of the V-Tanks contents using the selected remedy of chemical oxidatiodreduction with stabilization, the V-Tanks have been categorized as a hazard category 2 facility. This category subjects the planned remediation activity to 10 CFR 830, Subpart B: Nuclear Safety Management, Safety Basis Requirements (10 CFR 830.207). Management Control Procedure (MCP)-2449, "Nuclear Safety Analysis" (INEEL 2002), addresses requirements and guidance for updating and preparing safety basis documents for the V-Tanks to ensure the nuclear safety analysis activities are conducted in accordance with all laws, rules, and regulations. MCP-1176, "INEEL Safety Analysis Process" (INEEL 2003e) addresses the requirements and provides guidance for the generation of safety analysis documentation.

As a hazard category 2 facility, the V-Tanks require a documented safety analysis (DSA). A DSA is a documented analysis of the extent to which a nuclear facility can be operated safely with respect to workers, the public, and the environment, including a description of the conditions, safe boundaries, and hazard controls that provide the basis for ensuring safety. It is planned that a revision to the existing *Safety Analysis Report for the Test Area North Operations* (INEL 1994), will address the operation of the V-Tanks cleanup project using chemical/oxidation reduction with stabilization.

The safety analysis will address the entire process for remediation of the tank contents. This process involves the following steps:

1. Consolidation of the V-Tanks waste into a single homogenous waste stream

2. Optional removal and treatment of excess water in the V-Tanks.

3. Removal of the V-Tanks waste from the tanks and treatment using an oxidatiodreduction system

4. Further treating the waste to achieve a stabilized, solid waste form.

5. Sampling and analysis to confirm the treated waste meets LDR treatment requirements and ICDF WAC disposal limits.

6. Packaging of the stabilized waste for disposal at ICDF

Radiological evaluations and controls will include an As Low as Reasonably Achievable (ALARA) Review prepared by Radiological Engineering defining radiological hazards involved and proposed

mitigations and work controls. These controls and others will be included in a job-specific radiation work permit along with any work control evaluation points and limiting conditions that will control changing or unplanned conditions as work progresses.

The INEEL has demonstrated several times that it can safely store and dispose of PCBs via the Agency-approved risk assessment application as follows:

1. Application for the Risk-Based Storage of PCB Remediation Waste at the INEEL RWMC TSA-RE (INEEL 2001)

2. INEEL CERCLA Disposal Facility Short Term Risk Assessment (EDF-ER-327) (INEEL 2003d)

3. Letter dated June 19, 2002, from R. Albright, EPA Region 10, to D. Wessman, DOE-ID, "Risk-Based Approval under 40 CFR 761.61(c), 62(c), and 65(c)(9)(iv) Extension of Temporary Storage of PCBs from 30 days to 90 days at Decontamination, Deactivation, and Demolition (D,D,&D) Sites" (EPA 2002).

Transportation of the treated waste from TAN to ICDF is addressed by the INEEL Transportation Safety Document (INEEL 2003g) and supplemented by a transportation plan for compliance with 10 CFR 830, Subpart B, "Safety Basis Requirements." Additionally, DOE Order 460.1B, "Packaging and Transportation Safety," requires demonstration of equivalent safety to the U.S. Department of Transportation (DOT) Hazardous Materials Regulations.

Disposal of the treated waste in the ICDF is addressed by the *INEEL CERCLA Disposal Facility Complex Remedial Action Work Plan* (DOE-ID 2003a) and the *Waste Acceptance Criteria for ICDF Landfill* (DOE-ID 2003c). As described in Section 4, above, the ICDF is an engineered landfill that meets the substantive requirements of TSCA for PCB disposal in addition to DOE Order 435.1, RCRA Subtitle C (42 USC § 6921 et seq.), the Idaho Hazardous Waste Management Act of 1983 (Idaho Code § 39-4401). The ICDF will accept for disposal only hazardous, low-level, mixed low-level, and TSCA wastes generated from INEEL CERCLA activities. The ICDF Remedial Action Work Plan addresses not only the operations but also inspections, reporting and recordkeeping, health and safety emergency response, and closure and post-closure requirements.

Compliance with ICDF WAC will ensure protection of human health and the environment, including the Snake River Plain Aquifer. Because the Snake River Plain Aquifer is located 450 feet below the ICDF, a system of multiple liners and liquid collection and diversion points is incorporated into the ICDF design to prevent contaminants from migrating below the bottom of the landfill and threatening the aquifer. The ICDF includes a comprehensive release-detection system, which will trigger prompt response actions. Thus, the overall ICDF system is protective of the environment.

ICDF WAC that potentially pertain to the treated V-Tanks waste are as follows:

- Waste containing greater than 10 nCi/g of transuranic radionuclides is prohibited from disposal at the ICDF in accordance with the *Final Record of Decision for Idaho Nuclear Technology and Engineering Center, Operable Unit 3-13* (DOE-ID, EPA, and IDHW 1999b).

- TSCA waste containing greater than 500 ppm of PCBs is prohibited from disposal at the ICDF in accordance with 40 CFR 761.60.

- Hazardous waste from outside the Waste Area Group 3 area of contamination (AOC) must be treated to meet LDR requirements for 40 CFR 268 including universal treatment standard (UTS) limits, as applicable.

7. CONCLUSION

The management approach outlined in this document for the PCBs contained within the V-Tanks provides a risk-acceptable approach as defined in 40 CFR 761.61(c). This document will be incorporated by reference in the ROD Amendment for the V-Tanks that is being developed concurrently. Signature of that ROD Amendment by the Agencies (EPA, DOE, and State of Idaho) constitutes CERCLA approval equivalent to the TSCA approval needed for projects not addressed under the INEEL FFA/CO. This management approach constitutes regulatory approval for the operation of processes, such as chemical oxidatiodreduction, that are capable of destroying the PCBs in liquid PCB Remediation Waste and for the conversion of that liquid PCB Remediation Waste into solid PCB Remediation Waste. This EDF documents that the planned treatment activities will be conducted and controlled in a manner that is protective of workers, the public, and the environment and complies with all applicable/appropriate regulations.

8. REFERENCES

10 CFR 830, "Nuclear Safety Management," *Code of Federal Regulations,* Office of the Federal Register.

10 CFR 830.207 et seq., "Nuclear Safety Management, Subpart B: Safety Basis Requirements," *Code of Federal Regulations,* Office of the Federal Register.

40 CFR 761.60, "Disposal Requirements," *Code of Federal Regulations,* Office of the Federal Register

40 CFR 761.61, "PCB Remediation Waste," *Code of Federal Regulations,* Office of the Federal Register.

40 CFR 761.61(a), "Self-Implementing On-Site Cleanup and Disposal of PCB Remediation Waste," *Code of Federal Regulations,* Office of the Federal Register.

40 CFR 761.61(b), "Performance-Based Disposal," *Code of Federal Regulations,* Office of the Federal Register.

40 CFR 761.61(c), "fisk-Based Disposal Approval," *Code of Federal Regulations,* Office of the Federal Register.

40 CFR 761.62(c), "Disposal of PCB Bulk Product Waste: fisk-Based Disposal Approval," *Code of Federal Regulations,* Office of the Federal Register.

40 CFR 761.65(c)(9)(iv), "Storage for Disposal: Extension of Temporary Storage," *Code of Federal Regulations,* Office of the Federal Register.

15 USC § 2601 et seq., "Control of Toxic Substances," *US. Code,* U.S. Government Printing Office.

42 USC § 6921 et seq., "Identification and Listing of Hazardous Waste" (also referred to as "RCRA Subtitle C"), *U.S. Code,* U.S. Government Printing Office.

Idaho Code § 39-4401 et seq., Hazardous Waste Management Act of 1983, *State of Idaho Codes,* 1983

DOE Order 435.1, 2001, "Radioactive Waste Management," August 28, 2001.

DOE Order 460.1B, "Packaging and Transportation Safety," April 4, 2003.

DOE-ID Order 420.C, *Safety Basis Review and Approval Process,* August 2003.

DOE-ID Order 420.D, *Requirements and Guidance for Safety Analysis,* July 2003

DOE-ID, 2003a, *INEEL CERCLA Disposal Facility Complex Remedial Action Work Plan,* DOE/ID-10984, Revision 0, U.S. Department of Energy, Idaho Operations Office, February 2003.

DOE-ID, 2003b, *Technology Evaluation Report for the V-Tanks, TSF-09/18, at Waste Area Group 1, Operable Unit 1-10,* DOE/ID-11038, Revision 0, U.S. Department of Energy, Idaho Operations Office, April 2003.

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