

Environmental Defense Institute
Troy, Idaho 83871-0220
and
Keep Yellowstone Nuclear Free
Jackson, Wyoming 83001-4757

March 13, 2007

Sent via Certified US Mail

Bill Roderick
Acting Inspector General
U. S. Environmental Protection Agency
Office of Inspector General
1200 Pennsylvania Avenue, NW. (2410T)
Washington, DC 20460

Greetings,

The Environmental Defense Institute (EDI) Inc. and Keep Yellowstone Nuclear Free (KYNF) Inc. ("Petitioners") hereby request that the U.S. Environmental Protection Agency Office of Inspector General conduct a formal investigation of EPA Region-10 February 26 2007 final ruling on our 11/9/06 petition opposing EPA's Idaho Authorization of State Hazardous Waste Management Program Revision. ¹ EPA Region 10's ruling is included below in Attachment B.

Petitioners believe that EPA Region-10 ruling offered inadequate and inconclusive legal and regulatory justification to substantiate their ruling to re-authorize Idaho Department of Environmental Quality (IDEQ).

Petitioners offer in Attachment A, our joint comments to IDEQ on their "Intent to Permit" a new mixed hazardous and radioactive treatment operation. These comments articulate significant deficiencies in IDEQ's RCRA/HWMA current permitting process stated in:

Preliminary Comments on U.S. Department of Energy Class 3 Modified Permit to the Volume 14 for the Idaho Nuclear Technology and Engineering Center (INTEC) at the Idaho National Laboratory, Permit Number EPA ID No. ID4890008952I INTEC Liquid Waste Management System and the Integrated Waste Treatment Unit. IDEQ Public Notice of Intent 1/26/07 to approve Class 3 Permit Modifications of Volume 14, Docket Number 10HW-0701.

EPA Region 10 relies on CFR 270.72 "Subpart G Interim Status, Changes During Interim Status" in its ruling. However, EPA fails to document how these new INL operations were under Interim Status. Moreover, IDEQ's "Intent to Permit" IWTU contains no apparent reference to Interim Status and only characterizes it as a "Partial Permit." ²

¹ Janis Hastings, Associate Director, Office of Air, Waste, and Toxics, U.S. EPA Region 10, 1/26/07.

² Robert Bullock, Hazardous Waste Permit Coordinator, Idaho Department of Environmental Quality, 1/26/07, Dear Citizen Letter, Public Notice: Intent to Approve a Permit Modification Request.

The DOE Permit Request submitted to IDEQ includes a new high-level radioactive and hazardous waste processing plant. IDEQ's permit approval is back dated to September 16, 2004 for a "partial-permit (for less than entire facility)".³ This is the deadliest material on the planet short of nerve-gas. **This new operation is the Integrated Waste Treatment Unit (IWTU).**⁴

IDEQ has allowed DOE for many years to "boot-strap" new deadly waste operations like the IWTU onto old Process Equipment Waste Evaporator (PEWE) permits and thereby avoid the otherwise full legal Resource Conservation Recovery Act (RCRA) and Clean Air Act (MACT) permitting process.⁵ DOE's IWTU is required as a matter of law to obtain a RCRA and MACT permit as a new major source facility and not be engrafted as a modification onto the current application that is decades old.⁶ This is a jurisdictional issue that requires resolution before the IWTU can receive any legitimacy as a RCRA facility.⁷

The IDEQ, with EPA Region-10's concurrence, illegally relies on the decades old RCRA permit (on record) for the Process Equipment Waste Evaporator (PEWE) and attempts to "boot-strap" **new separate operations in separate buildings** into this new permit modification. Current EPA regulations restrict permit modification to **existing** permitted operations.⁸

Therefore, IDEQ approval of this new permit modification is bogus because there are no original permits for the IWTU, High-level Liquid Waste Evaporator and Liquid Effluent Treatment & Disposal. These operations needed to obtain individual RCRA permits as new facilities because they were not in existence before 1986.⁹ Moreover, the deadline for DOE compliance with the Clean Air Act/NESHAP/MACT standards for these operations was 6/29/98.¹⁰ Why? Because even Idaho knows that Interim Status only applies to RCRA operations operating prior to 1986.

EPA/OIG states; "Interim status is a temporary designation, but some units have existed for as many as 25 years without formal issuance or denial of a permit, or other regulatory controls."¹¹

³ IDEQ Toni Hardesty, Director Department of Environmental Quality, September 16, 2004.

⁴ Permit Modification, Attachment 1, Section B, Facility Description, (Dec. 06). IDEQ reference (1b_facility description).

⁵ Code of Federal Regulations (CFR), National Emission Standards for Hazardous Air Pollutants, Maximum Achievable Control Technology (MACT) Standards for Major Sources 40 CFR 63.40 through 63.44

⁶ IDEQ Updated Listing of INL RCRA documents 1/17/07, INTEC Permitting, page 29-30, shows the last full RCRA permit for the Process Equipment Waste Evaporator.

⁷ 40 CFR 270.42

⁸ 40 CFR 270.42(a)(i) Subpart D Changes to Permit. 6/7/05

⁹ Construction for the High-Level Liquid Waste Evaporator (HLLWE) at the Idaho National Laboratory was initiated in 1993 and operation of the HLLWE as a new facility began in 1996. The HLLWE has processed over 4 million gallons of high level radioactive liquid and mixed hazardous wastes without a RCRA permit. DOE is required but has failed to submit an application for a RCRA permit for the HLLWE. The HLLWE has operated at all times without a RCRA permit and without interim status. See Environmental Defense Institute, et al., Notice of Intent to Sue DOE, 7/9/02, available at; <http://environmental-defense-institute.org>

¹⁰ 40 CFR 63.42. Also see EPA Office of Inspector General 3/9/05 Evaluation Report "Substantial Changes Needed in Implementation and Oversight of Title V Permits If Program Goals Are to Be Fully Realized"

¹¹ USEPA Office of Inspector General, 12/4/06, EPA's Management of Interim Status Permitting Needs Improvement to Ensure Continued Progress, Report No. 2007-P-00005.

Additionally, Petitioners believe the 2/5/04 EPA/OIG Evaluation Report "Review of EPA's Response to Petition Seeking Withdrawal of Authorization for Idaho's Hazardous Waste Program" recommendations have not been adequately or fully implemented by either Region 10 or IDEQ.¹²

Due to the fact that a significant number of requested FOIA documents have yet to be released by DOE/ID, EPA Region-10 and IDEQ, Petitioners reserve the right to submit additional information to EPA/OIG if and when these reports are released.¹³

Respectfully Submitted,

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Attachment A:

Environmental Defense Institute and Keep Yellowstone Nuclear Free Integrated Waste Treatment Unit (IWTU) RCRA Permit Comments.

Attachment B:

EPA Region 10 Ruling on Petitioners Objection to Authorization of State of Idaho Hazardous Waste Management Program, Janis Hastings, Associate Director, Office of Air, Waste, and Toxics, U.S. EPA Region 10, 1/26/07.

¹² Office of Inspector General, Evaluation Report, Review of EPA's Response to Petition Seeking Withdrawal of Authorization of Authority for Idaho's Hazardous Waste Program, Report No. 2004-P-00006, 2/5/04.

¹³ Environmental Protection Agency Region 10 denied fee waiver to Environmental Defense Institute's Freedom of Information Act request for INL permit documentation "EPA has determined that the requested records do not meet the threshold test of contributing significantly to the public understanding of the operations or activities of the Federal government." Stephanie Kercheval, FOIA Officer, 2/7/07. EPA requires payment of \$750 for processing fees. Idaho Department of Environmental Quality also denied EDI fee waiver for INL permit documentation.

Attachment A

Environmental Defense Institute

Troy, Idaho 83871-0220

<http://www.environmental-defense-institute.org>

and

Keep Yellowstone Nuclear Free

Jackson, Wyoming 83001-4757

<http://www.yellowstonenuclearfree.com>

February 28, 2007

Toni Hardesty, Director (sent via U.S. Certified mail and email)

Idaho Department of Environmental Quality

1410 North Hilton

Boise, ID 83706-1255

Robert Bullock (sent via email)

Hazardous Waste Permitting Manager

Idaho Department of Environmental Quality

1410 North Hilton

Boise, ID 83706-1255

Brian English (sent via email)

Idaho Department of Environmental Quality

1410 North Hilton

Boise, ID 83706-1255

RE: Preliminary Comments on U.S. Department of Energy Class 3 Modified Permit to the Volume 14 for the Idaho Nuclear Technology and Engineering Center (INTEC) at the Idaho National Laboratory, Permit Number EPA ID No. ID4890008952I INTEC Liquid Waste Management System and the Integrated Waste Treatment Unit. IDEQ Public Notice of Intent 1/26/07 to approve Class 3 Permit Modifications of Volume 14, Docket Number 10HW-0701.

These comments for the public record are submitted jointly by the Environmental Defense Institute (EDI) Inc. and Keep Yellowstone Nuclear Free (KYNF) Inc. We reserve the right to submit supplemental comments due to release resistance of our Freedom of Information Act (FOIA) requests to DOE, EPA and Public Records Requests (PRR) for Idaho National Laboratory RCRA permit information to Idaho Department of Environmental Quality.¹⁴

¹⁴ Environmental Protection Agency Region 10 denied fee waiver to Environmental Defense Institute's Freedom of

Section I: Summary

The Department of Energy (DOE) Idaho National Laboratory (INL) contractor CH2M-WG-Idaho issued a public notice mailing (August 21, 2006) on a Permit Modification Request that offered inadequate discussion on this project and no "on-line" access to the documentation.

The DOE quickly posted a "Permit Modification Request" (PMR) in August 2006 that has no official public comment provisions.¹⁵ Idaho Department of Environmental Quality (IDEQ) subsequently issued Public Notice: Intent to Approve a Permit Modification Request 1/26/07.¹⁶

The 45-day comment period (ending 3/12/07) provided by IDEQ is inadequate given the importance of this major new operation and the potential for significant environmental impact. Therefore, EDI requests that the comment period be extended to 90 days to IDEQ "Intent to Approve the Permit Modification" of the more than 640+ pages of the Permit.

The DOE Permit Request submitted to IDEQ includes a new high-level radioactive and hazardous waste processing plant. IDEQ's permit approval is back dated to September 16, 2004 for a "partial-permit (for less than entire facility)".¹⁷ This is the deadliest material on the planet short of nerve-gas. **This new operation is called the Integrated Waste Treatment Unit (IWTU).**¹⁸

IDEQ has allowed DOE for many years to "boot-strap" new deadly waste operations like the IWTU onto old Process Equipment Waste Evaporator (PEWE) permits and thereby avoid the otherwise full legal Resource Conservation Recovery Act (RCRA) and Clean Air Act (MACT) permitting process.¹⁹ DOE's IWTU is required as a matter of law to obtain an RCRA and MACT permit as a new major source facility and not be engrafted as a modification onto the current application that is decades old.²⁰ This is a jurisdictional issue that requires resolution before the IWTU can receive any legitimacy as a RCRA facility.²¹

The IDEQ illegally relies on the decades old RCRA permit (on record) for the Process Equipment Waste Evaporator (PEWE) and attempts to "boot-strap" **new separate operations in separate buildings** into this new permit modification. Current EPA regulations restrict permit modification to **existing** permitted operations.²² Therefore, IDEQ approval of this new permit modification is bogus because there are no original permits for the IWTU, High-level Liquid Waste Evaporator and Liquid Effluent

Information Act request for INL permit documentation "EPA has determined that the requested records do not meet the threshold test of contributing significantly to the public understanding of the operations or activities of the Federal government." Stephanie Kercheval, FOIA Officer, 2/7/07. EPA requires payment of \$750 for processing fees. Idaho Department of Environmental Quality also denied EDI fee waiver for INL permit documentation.

¹⁵ Department of Energy Modified Permit Request of the current "INEEL: ILWMS Partial Permit", signed by Toni Hardesty, Director IDEQ, 9/16/04, hereinafter called "Draft Permit." Available on IDEQ's website below; http://www.deq.idaho.gov/waste/permits_waste/ilwms_permit/overview.cfm

¹⁶ Dear Concerned Citizen letter, from Robert E Bullock, Hazardous Waste Permit Coordinator, 1/26/07, with Public Notice: Intent to Approve a Permit Modification Request. For related 12/06 and 1/06 permit documents see; www.deq.idaho.gov/waste/permits_forms/permitting/haz_waste/ilwms/

¹⁷ IDEQ Toni Hardesty, Director Department of Environmental Quality, September 16, 2004.

¹⁸ Permit Modification, Attachment 1, Section B, Facility Description, (Dec. 06). IDEQ reference (1b_facility description).

¹⁹ Code of Federal Regulations (CFR), National Emission Standards for Hazardous Air Pollutants, Maximum Achievable Control Technology (MACT) Standards for Major Sources 40 CFR 63.40 through 63.44

²⁰ IDEQ Updated Listing of INL RCRA documents 1/17/07, INTEC Permitting, page 29-30, shows the last full RCRA permit for the Process Equipment Waste Evaporator.

²¹ 40 CFR 270.42

²² 40 CFR 270.42(a)(i) Subpart D Changes to Permit. 6/7/05

Treatment & Disposal. These operations needed to obtain individual RCRA permits as new facilities because they were not in existence before 1986.²³ Moreover, the deadline for DOE compliance with the Clean Air Act/NESHAP/MACT standards for these operations was 6/29/98.²⁴

Section II. IDEQ Fails to Require DOE to Implement Permanent Waste Treatment Solutions Stipulated in the Settlement Agreement

Environmental Defense Institute (EDI) and Keep Yellowstone Nuclear Free (KYNF) have always supported the safe conversion of mixed hazardous and high-level radioactive tank waste inventory that poses a continued threat to the underlying Snake River Aquifer into a safe waste form (direct vitrification).²⁵ However, IDEQ violates the public interest, court orders and regulatory compliance in the current "Intent to Permit" initiative.

IDEQ has tragically indorsed DOE's IWTU waste treatment plan that provides no long-term solutions to treatment/disposal of the mixed hazardous Sodium-Bearing Waste and high-level waste tank inventory in the INTEC Tank Farm. The IWTU will only generate more of what DOE claims as calcine like waste. In fact the IWTU produces a fine dust powder that will leach more rapidly than does an equal mass of rad-waste-type glass and produces a vast amount of extremely dusty off-gas difficult to capture. The process is prone to agglomeration-related shutdowns which would be extremely difficult to recover.

DOE and IDEQ are taking a grossly misguided route with the less expensive IWTU "Steam Reforming" despite the fact that the existing 4,200 cubic meters of calcine in storage at INTEC also must be processed to meet the Idaho/DOE Consent Order for "road ready" waste disposal.²⁶ Duratek's bid for vitrification of the INTEC one million gallon tank waste is \$79.6 million.²⁷ This Duratek vitrification process can handle both liquid INTEC tank waste and the existing INTEC 4,200 cubic meters calcine inventory that will be required anyway in the court ordered Consent Order Agreement.

Yet DOE and IDEQ opted for the for the short-term less expensive \$35 million "steam reformer" IWTU process whose waste form is least stable for on-site long-term storage over the Snake River Aquifer or permanent disposal.

There is No Disposal Path-Forward for the ITWU Waste

This Permit also violates the Idaho/DOE Settlement Agreement/Consent Order and Notice of Noncompliance requirements for "road-ready" disposable waste that will meet with "waste acceptance criteria" (WAC) for a final disposal site.²⁸ To-date, the waste product that best meets these WAC requirements is vitrified glass/ceramic. Yet DOE rejected direct vitrification in its Idaho High-Level Waste and Facilities EIS.²⁹ Moreover, there is no final disposal "path-forward" for the ITWU waste

²³ Construction for the High-Level Liquid Waste Evaporator (HLLWE) at the Idaho National Laboratory was initiated in 1993 and operation of the HLLWE as a new facility began in 1996. The HLLWE has processed over 4 million gallons of high level radioactive liquid and mixed hazardous wastes without a RCRA permit. DOE is required but has failed to submit an application for a RCRA permit for the HLLWE. The HLLWE has operated at all times without a RCRA permit and without interim status. See Environmental Defense Institute, et al., Notice of Intent to Sue DOE, 7/9/02, available at; <http://environmental-defense-institute.org>

²⁴ 40 CFR 63.42. Also see EPA Office of Inspector General 3/9/05 Evaluation Report "Substantial Changes Needed in Implementation and Oversight of Title V Permits If Program Goals Are to Be Fully Realized"

²⁵ Environmental Defense Institute Comments on Idaho High-level Waste and Facilities Disposition, Final Environmental Impact Statement, September 2002, DOE/EIS-0287, See www.environmental-defende-institute.org

²⁶ Idaho High-level Waste &FD Environmental Impact Statement, DOE/EIS-0287D 12/99, pg. 1-11.

²⁷ Duratek vitrification process bid to DOE/ID

²⁸ U.S. District Court for the District of Idaho in USA v. Batt, Civil No 91-0054-S-EJL, Consent Order, 10/17/95.

²⁹ Idaho High-Level Waste and Facilities Disposition, Final Environmental Impact Statement, September 2002, DOE/EIS-0287.

because WIPP Waste Acceptance Criteria specifically "excludes" this waste generated from INTEC Tank Farm.³⁰ Given the inevitable long-term storage of these wastes at INL (in a USGS recognized flood zone) until a permitted final disposal site is established, only the vitrified glass waste will pose the least significant leach of contaminants hazard into the underlying Snake River Aquifer.

Don Hancock, Southwest Research and Information Center (SRIC) Nuclear Waste Program Director states: "Waste from the [high-level waste] HLW tanks at INL is not bound for WIPP, whether it's called [remote handled] RH or [contact handled] CH TRU. The RH waste that's coming to WIPP is from Argonne-East, not from INTEC.

"The WIPP permit still has the following prohibition:

II.C.3.h. Excluded waste - TRU mixed waste that has ever been managed as high-level waste and waste from tanks specified in Permit Attachment B are not acceptable at WIPP unless specifically approved through a Class 3 permit modification. Such wastes are listed in Table II.C.3.i below.

"There are no wastes currently listed in that table, because DOE hasn't requested any class 3 permit modification for such wastes.

" WIPP Permit Attachment B, Table B-8, which is referred to, includes 15 HLW tanks at INL. Thus, before any waste (whatever its classification) from those tanks could come to WIPP, there would have to be a class 3 mod. As you know, there's no timeframe for any decision on such a request. We currently have one class 3 requests to the WIPP permit (regarding panel closure) that has been pending since October 2002. And any attempt to bring any waste from the Hanford, INL, or SC HLW tanks will be very controversial in New Mexico, because SRIC and others believe that such waste is prohibited by the WIPP Land Withdrawal Act."³¹

IDEQ Fails to Consider Fundamental Product, Cost and Process Issues in its Intent to Approve the IWTU Modified Permit.

Former INL site worker and technical consultant, Darryl Siemer, with a PhD in chemistry challenges the IDEQ Notice of Intent permit modification deficiencies on the following grounds;

- 1) "PRODUCT ACCEPTABILITY: CWI's [CH2M-WG-Idaho] [IWTU] reactor will make the same product - a water soluble "carbonate calcine" - that could have been produced fifteen years ago by INL's already-paid-for calciner (NWCF). In light of the uncertainties regarding ultimate disposal of SBW [sodium bearing waste], why is Idaho championing a process that makes such a product? Since DOE apparently has not yet given Idaho an iron-clad guarantee that the "stabilized" SBW will be shipped offsite, its acceptability as a waste form is important. For example, has the State of New Mexico officially withdrawn its objections to putting INL's tank wastes into the WIPP [Waste Isolation Pilot Program] repository? Is a water soluble calcine ever apt to be deemed acceptable by the people who live near Nevada's YM [Yucca Mt] repository site? If it's not shipped offsite, would such calcine be suitable for indefinite "temporary" storage immediately above the Snake River aquifer? I'm not alone in my opinion that an "acceptable" radioactive waste form would be neither water soluble nor readily dispersible (dust-like).
- 2) "COST: What's the State's current best-guess of what this project will cost US

³⁰ Waste Isolation Pilot Project (WIPP) Resource Conservation and Recovery Act (RCRA) Hazardous Waste Facility Permit and Modifications, Attachment B, Waste Analysis Plan, Effective Date, 11/17/06, Table B-8, Waste Tanks Subject to Exclusion, page B-54; states "INEEL -15 Excluded Tanks, Numbers WM-103 through WM-106, and WM-180 through 190."

³¹ Don Hancock email to Chuck Broschius, 2/26/07. Hancock is a nationally recognized NGO expert on WIPP.

taxpayers? I seem to recall that the primary driver for steam-reforming was that, back in 2002, DOE's then-incoming EM chieftain announced that vitrification would be "too expensive" for INEEL (but still OK elsewhere) [Hanford]. Yesterday, the "INTEC contact" identified in the Notice of Intent informed me that the estimated cost of this project has ballooned from \$121 to \$460 million during the twenty-three months that CWI has been in charge of INL clean-up. \$460 million is 6 times more expensive than DURATEK's bid (2005) to convert SBW to a genuinely competent waste form (glass) and thirteen times more costly than thin-film evaporating it to an equally water soluble but much less "dispersible" salt-cake waste form would be.

- 3) "PROCESS: Why is the State of Idaho allowing CWI to keep the details of its technology secret? To persons as "familiar with the art" as I happen to be, the fluidized-bed calcination of SBW under strongly reducing ("reforming") conditions is a well-established technology first demonstrated at Argonne fifty years ago. The only genuinely novel features of CWI's technology include the name-change (to "reforming") & the fact that it has somehow managed to convince DOE that calcine would be a good waste form. The spectacular success of that sales pitch required the same official permission to suppress "technical details" that Idaho is now apparently also condoning.

"The mystery of how this all came about might be explained by the fact that in 2001, George Bush appointed Robert G. Card, then a senior vice president of CH2M-Hill (the "C" in CWI refers to CH2M-HILL), undersecretary to the US Department of Energy. (Mr. Card is now safely back with CH2M-Hill.) In a similar vein, the State's abrupt about-face on this issue (up until fairly recently), it wanted DOE to vitrify [sodium bearing waste] SBW.

"In my opinion, this [IDEQ IWTU Permit approval] project absolutely reeks of waste, fraud, & taxpayer abuse. It's also another example of how DOE-management of its 'waste issues' continues to haunt the US nuclear power industry." ³²

Section III. IDEQ's Proposed Permit Violates Environmental Laws

EDI protests DOE's attempt, with IDEQ complicity, to circumvent applicable Resource Conservation Recovery Act (RCRA), Clean Air Act, and Clean Water Act regulations. EDI filed a complaint with EPA challenging the agency's intent to grant Idaho final Hazardous Waste Management Act and Resource Conservation Recovery Act permitting authority based on IDEQ's past and current inadequate enforcement of these crucial environmental laws. ³³ EDI also filed a Complaint with EPA Office of Inspector General challenging IDEQ's lax enforcement. See Attachment D for the EPA/Office

³² Darryl D. Siemer, Ph D Chemist and INL former site worker and INL technical consultant, Idaho Falls, Idaho, 2/10/07 email to Mary Woollen, and Siemer email to Broscious 2/12/07 .

³³ When Petitioners [EDI et al.] ask, "Where are the permits?" EPA and IDEQ pretend that interim status is a substitute for a permit although RCRA requires permitted facilities during their operational lifetimes. Interim status operations have continued for longer periods than permitted operations could have continued. 42 U.S.C. §6925 reflects Congressional intent to limit interim status operations. One only has to read the Rebuttal submitted by Petitioners to realize the large number of legal and factual issues which the EPA has refused to acknowledge or address in its 7/1/02 letter or EPA's earlier Response. Environmental Defense Institute, Keep Yellowstone Nuclear Free and David McCoy Petition to Environmental Protection Agency Inspector General, 7/8/02. See EDI Website <http://environmental-defense-institute.org>

of Inspector General's critical response.³⁴

EDI also filed a Public Records request 12/28/06 with IDEQ for RCRA permit documentation and IDEQ responded stating major portions of the request are **denied** based on "trade secrets and business records."³⁵ Consequently, the public is deliberately denied by IDEQ access to crucial information essential for developing informed consent. Equally egregious is IDEQ arbitrary and capricious requirement that only public comments on permit modifications related to the IWTU will be considered. This means IDEQ will not consider the fundamental illegal "boot-strapping" permit modification issues are "off-the-table." It's simply unconscionable and illegal for IDEQ to allow DOE to dump these deadly toxins into the atmosphere when DOE refuses to pay for available emission control systems otherwise required under law.

EDI and KYNF's Freedom of Information Act (FOIA) request to EPA Region 10 for documentation on INL RCRA permits are also blocked despite compliance with "in the public interest" requirements of FOIA. EPA officially claims "fee waiver denial" without providing any basis for the denial.³⁶

One of the crucial deficiencies of this new IDEQ Permit Modification is that it only addresses hazardous materials and totally ignores radioactive materials released to the atmosphere. The Permit Modification must address compliance with all applicable regulations related to radioactive emissions.³⁷ This is a crucial issue because during 2003, INTEC (where these waste process plants are located) released 6,002 curies of radioactive emissions to the atmosphere.³⁸ By any standards, this is an enormous amount of radiation to the environment! Since the new Integrated Waste Treatment Unit (IWTU) is part of the multi-process INTEC Liquid Waste Management System (ILWMS) that is treating the most hazardous radioactive waste on earth, this is an unacceptable exclusion. This Permit Modification includes the whole ILWMS component units that include:

- Integrated Waste Treatment Unit (IWTU)
- Evaporator Tank System (ETS) formerly called the High-level Liquid Waste Evaporator
- Process Equipment Waste Evaporator (PEWE)
- Liquid Effluent Treatment and Disposal (LET&D)

Changing the name of the High-level Liquid Waste Evaporator to Evaporator Tank System does not change the process, but it does make it sound more benign to the public. DOE's naming the Integrated Waste Treatment Unit (IWTU) and classifying it as a "steam reformer" also sounds deliberately innocuous. These name changes are not only used to hide what these operations do, but also to avoid more stringent applicable laws. At issue here is processing the most deadly material in the world that unquestionably deserves the most ardent regulatory scrutiny by IDEQ and EPA.

IDEQ states, "The proposed IWTU is not considered a combustion technology. Although steam reforming is **not subject to the Maximum Achievable Control Technology (MACT)** standards for hazardous waste combustion, the IWTU is designed to meet these standards."³⁹ This is a clear obfuscation of Clean Air Act regulatory enforcement. IDEQ is required by law to state that the IWTU **SHALL** meet MACT emission standards.⁴⁰

³⁴ EPA Office of Inspector General, Evaluation Report, Review of EPA's Response to Petition Seeking Withdrawal of Authorization for Idaho's Hazardous Waste Program, Report No. 2204-P-00006, 2/5/04.

³⁵ Teri Gregory, IDEQ, Administrative Assistant Waste Management and Remediation Division, 1/24/07

³⁶ U.S. Environmental Protection Agency Region 10, Freedom of Information Act Request Number 10-RIN-00101-07 Fee Waiver Denial, 2/1/07.

³⁷ 40 CFR 191.27 (notes 5 and 6) as well as 40 CFR 61 Subpart I.

³⁸ Draft Environmental Impact Statement for the Proposed Consolidation of Nuclear Operations Related to Production of Radioisotope Power Systems, DOE/EIS-0373D, page 3-26.

³⁹ IDEQ Fact Sheet, 1/26/07, page 3.

⁴⁰ 40 CFR 63.43

The Integrated Waste Treatment Unit (IWTU) "steam reformer" meets the regulatory definition of a "combustion device"⁴¹ or controlled prophetic high-temperature burn (1,150 degree C). These combustion temperatures are achieved by adding fuel in the form of combustible carbon (coal) and oxygen as a means of maintaining the high temperature for reducing the waste in a fluidized bed to a fine powder like and highly leachable waste product. The McGrill leach studies of the waste show 100% of the radioactive cesium leaches out in two days.⁴² This waste power poses a significant hazard to Idaho's sole source aquifer given the fact that it will be in indefinite long-term storage at INL (in a flood zone) until a final geologic disposal site is permitted. The IWTU replaces the New Waste Calciner incinerator that was not designed to process the remaining "sodium-bearing" high-level liquid waste at the INTEC Tank Farm.

Regardless what DOE calls this new IWTU and other high-level/TRU waste operations, IDEQ must be independently define it by a characterization of the treatment process implemented and the required regulatory emission control standards applied.

"A temperature of 1,150 C is the same as the operating temperature in the turbine (hot end, in the direct blast of the burning fuel/air mixture) of a jet engine. This is bright red heat, enough to melt copper & incinerate almost anything, but the mere idea of burning previously classified high level waste & not monitoring or controlling the resulting emissions seems to me to be beyond stupid & without regard to public safety," notes a University of Idaho Engineering Materials Science professor.

DOE's Permit Modification claims the new IWTU will process "approximately 836,000 gallons of mixed liquid waste, containing both hazardous and radioactive components stored in three 300,000-gallon [high-level waste] tanks."⁴³ These are only current inventories and do not include DOE plans to restart spent nuclear fuel reprocessing that will generate significant volumes of "newly-generated" high-level liquid waste. This is an enormous amount of extremely deadly waste to treat and the potential for significant emissions that could affect the public and the environment must be recognized.

DOE states: "The units that comprise the [INTEC Liquid Waste Management System] ILWMS are capable of handling high-level, transuranic, and low-level radioactive wastes. Activities of typical wastes range from 20 nCi/g to 50,000 nCi/g."⁴⁴ The exposure rates associated with these process solutions routinely exceed 100 mrem/hr and can pose a potentially serious hazard to workers at the INL if appropriate protective measures such as time, distance and shielding are not applied."⁴⁵

DOE's reported intent to restart reprocessing of spent nuclear fuel (SNF) at INL lends credence to public concerns that the ILWMS and the IWTU are not just dedicated to treating existing high-level waste tank inventories, but also facilitating managing "newly-generated-waste" from reprocessing of SNF.⁴⁶

DOE/IDEQ Permit Modification Discussion of Process Vents

"Process Vent" is a broad regulatory category for a major source of hazardous air pollutants that must comply with more restrictive EPA emission regulations. DOE has been and continues to side-step compliance with these emission regulations with bogus assertions that their hazardous and radioactive waste treatment operations are not Process Vents.

⁴¹ 40 CFR 63.111

⁴² Dr. Pete McGrail, Bechtel National, raw leach data, PNWD-3288, WTP-RPT-097 (Rev.0).

⁴³ Permit Modification, Attachment 1, page 1-D-134. For the full text of this DOE Permit Modification hereinafter referred to "Permit Modification" referenced herein ; See <http://www.deq.idaho.gov/waste/permits>

⁴⁴ The definition of Transuranic Waste is "radioactive waste that is not classified as high-level radioactive waste and contains more than 100 nano-curies per gram of alpha-emitting transuranic isotopes with half-lives greater than 20 years."

⁴⁵ Permit Modification, Attachment 2, Section C, pg. 2-6. (nCi/g = nano Curies per gram) (mrem/hr = millirem per hour)

⁴⁶ Permit Modification, Attachment 2, Section C, pg. 12

IDEQ states, "The IWTU is designed [**not required**] to meet Hazardous Waste **Combustor** MACT standards which are more stringent than the emission standards for process vents IDAPA 58.01.05.008 [40 CFR 264 Subpart AA]. Also, steam reforming is not a technology regulated under the process vent standards, thus the process vent standards are neither applicable nor appropriate for the IWTU." ⁴⁷ [emphasis added] IDEQ is complicit in this charade by allowing DOE's obfuscation of the relevant laws.

DOE/IDEQ claim: "The IWTU does not involve distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations. As such, the IWTU stack does not meet the definition of a process vent in IDAPA 58.01.05.008 (40 CFR § 264.1031) and the requirements specified in 40 CFR 264 Subpart AA do not apply." ⁴⁸

However, 40 CFR 264.1031 states: "Process vent means any open-ended pipe or stack that is vented to the atmosphere either directly, through a vacuum-producing system, or through a tank (e.g., distillate receiver, condenser, bottoms receiver, surge control tank, separator tank, or hot well) associated with hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations." ⁴⁹ There are multiple radioactive/hazardous waste stacks for the numerous INTEC Liquid Waste Management System (LWMS) operations as well as other INTEC operations using the same stacks, and regulations require that they cumulatively be included under the "major source" criteria. ⁵⁰

Clearly, the IWTU meets two or more of the above definitions of a "process vent" under 40 CFR 264.1031. DOE cannot credibly claim exemption of this crucial emission control regulation. Moreover, IDEQ must ensure that DOE is not allowed to use this unfounded exemption. Also see detailed discussion on the IWTU Permit Modification below.

DOE's Permit Modification includes other liquid waste treatment units and claims: "... [Evaporator Tank System] ETS off-gas is processed through vessel off-gas systems in Buildings CPP-604 and CPP-659 respectively and then sent to the APS in Building 649, prior to discharge to the main stack. Therefore, the ETS vents do not meet the definition of a process vent and IDAPA 58.01.05.008 [40 CFR § 264.1031] does not apply." ⁵¹

The IWTU and ETS meet one or more of the above definitions of a "process vent" under 40 CFR 264.1031. DOE cannot credibly claim exemption of this crucial emission control regulation. IDEQ must ensure, in the interest of public health and safety, that DOE is not allowed to use this unfounded exemption.

The above DOE Permit does not implement new: "EPA (2005) recommendations that organics and metal emission limits be increased by factors of 2.8 and 1.45 respectively, to account for potential increases in emissions due to process upset conditions." ⁵² Also, there is no apparent cumulative

⁴⁷ IDEQ Fact Sheet, 1/26/07, page 5.

⁴⁸ Permit Modification, Attachment 2, Section C, pg. 2-52

⁴⁹ "Distillation operation means an operation, either batch or continuous, separating one or more feed stream(s) into two or more exit streams, each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and vapor phase as they approach equilibrium within the distillation unit.

"Fractionation operation means a distillation operation or method used to separate a mixture of several volatile components of different boiling points in successive stages, each stage removing from the mixture some proportion of one of the components.

"Distillate receiver means a container or tank used to receive and collect liquid material (condensed) from the overhead condenser of a distillation unit and from which the condensed liquid is pumped to larger storage tanks or other process units."

⁵⁰ 40 CFR 63.112

⁵¹ Permit Modification, Attachment 2, page 2-52

⁵² Permit Modification, Attachment 1, page 1-D-138

hazardous/radioactive emissions data for all the INTEC operations using the same Main Stack, other co-located stacks, and the new IWTU stack as required in the regulations. This is a crucial issue because during 2003, INTEC released 6,002 curies of radioactive emissions to the atmosphere.⁵³ By any standards, this is an enormous amount of radiation to the environment!

What confidence can the public attribute to these grossly inappropriately applied standards?

It is now up to the Idaho Department of Environmental Quality to review this DOE Permit Modification Request and issue its findings. In the past, IDEQ chose to put the politically expedient ruling of Idaho's single largest employer ahead of public health and safety. Public comment is crucial to reversing this misguided priority.

Section IV. INTEC Liquid Waste Management System (ILWMS) Permit Tank Issues

DOE plans to continue using RCRA non-compliant tanks and ancillary service lines and equipment. DOE's Permit only lists about 53 tanks and fails to provide crucial information about each tank.⁵⁴ Apparently, all of the functioning tanks are not listed in the Draft Permit.

Twelve of the tanks (listed in the Permit Modification) date back to 1951, and nine tanks date back to the 1970s and 1980s, long beyond their 20-year design life. An additional 18 tanks have no "certification stamp." That is a total of 39 tanks that are non-compliant. **The ASME design standards⁵⁵ for the other tanks are only relevant if the tanks have not already exceeded their design life. DOE must stipulate the ASME design life and age for each of the tanks listed in the PMR along with the anticipated years of future operational use.**

RCRA secondary containment requirement in tank vaults is compromised by DOE's use of "gerry-rigged" Hypalon liners with dubious joint sealants that are not compliant or certified for waste contained in tanks. Extensive use of old non-compliant "drip troughs" in ancillary service lines instead of the required welded stainless steel secondary containment with continuous monitoring, are grounds for denying the Permit under 40 CFR 270.42.⁵⁶

ILWMS "Bottoms Tanks" do not meet required secondary containment under RCRA. DOE's Permit states: "The secondary containment is constructed of concrete floor lined with a Hypalon® membrane (registered trademark of DuPont), which extends three feet up the walls.⁵⁷ All seams in the secondary containment are heat-welded or adhesive 14 bonded to avoid any cracks or gaps. The membrane is sealed around the tank saddles by silicone rubber 15 sealant that is capable of withstanding the expected waste solutions for extended periods of time."⁵⁸

The above DOE disclosure of use of non-certified "silicone sealant" that is "capable

⁵³ Draft Environmental Impact Statement for the Proposed Consolidation of Nuclear Operations Related to Production of Radioisotope Power Systems, DOE/EIS-0373D, page 3-26.

⁵⁴ DOE Draft Modified Permit, pages 42 through 64.

⁵⁵ American Society of Mechanical Engineers (ASME)

⁵⁶ USDOE Idaho Operations Office RCRA PMR Modification Request for Idaho National Laboratory, August 2006, herein after referred to as PMR. Attachment 1-D-Process pg. 99

⁵⁷ Draft Permit, page 42, 47, and 48.

⁵⁸ PMR, Attachment 1, page 1-B-10

of withstanding the expected waste" for some vague undocumented "extended period of time" is grounds for denial of the Permit under 40 CFR 270.42 because it does meet regulatory requirements for secondary containment.

Twelve of the CPP-641 listed tanks date back to the early 1950s, 45 years beyond their 20-year design life. Nine of the above tanks put into service in the 1960s and 1980s are also long beyond their design life. An additional four tanks have no certification stamp.

So a total of 26 tanks (just in CPP-641) are not in compliance. The ASME design standards for the other tanks are only relevant if the tanks have not exceeded their design life. DOE must provide documentation on each tanks design life and age to validate their continued use through the operational life of the ILWMS.

The Permit Modification tank table states: "No code stamp required??" The code stamp is a RCRA requirement and is the only legitimate verification that the tank does in fact meet the standard. Again, these tanks are likely beyond their 20-year design life. Therefore, DOE must provide documentation on each tank design life.

Again, the ASME design standards for the tanks are only relevant if the tanks have not exceeded their design life and future operational planned use. DOE must provide documentation on each tanks design life to validate their continued use through the operational life of the ILWMS.

DOE's Permit Modification acknowledges secondary containment in waste service piping: "Concrete-embedded transfer lines have been identified at the ILWMS."⁵⁹ This is a violation of compliance with 40 CFR § 264.193(f) that requires monitored leak collection and welded stainless steel secondary containment. Although DOE claims its intent to upgrade or reroute these service lines, there is no apparent confirmation that all of these upgrades has occurred.

RCRA does not provide for the above DOE claimed exemptions. Therefore, the Permit is deficient. Extensive use of old non-compliant "drip troughs" in four other buildings' ancillary service lines instead of the required welded stainless steel secondary containment with continuous monitoring, are grounds for denying the Permit⁶⁰

DOE's Permit Modification states that; "No viable pathway exists for migration of hazardous waste or hazardous constituents from the waste treated in the PEWE, LET&D, ETS, or IWTU to the soil, ground water, and/or surface waters."⁶¹

DOE's above statement is not true because of the extensive soil and groundwater monitoring data under INTEC showing massive contaminate migration to the soil and groundwater. As these comments articulate the ILWMS process off-gas systems are inadequate, and DOE's attempt to exempt these process vents from regulatory compliance, is clear evidence that they would not meet critical scrutiny on compliance.

According to IDEQ, major portions of the Permit have been redacted (censored) as "proprietary information."⁶² This redaction/censorship of pertinent information is unacceptable in EDI's view because it shows the flow charts outlining the inter-connection of the various

⁵⁹ PMR, Attachment 1-D, page 1-D-87

⁶⁰ PMR, Attachment 1-D-Process pg. 99

⁶¹ PMR, Attachment 1-D, page 1-D-104

⁶² IDEQ email 9/6/06 to Broschious

operations as well as other crucial information! IDEQ must force DOE to fully disclose all process information.

DOE acknowledges that; "The INTEC was designed and built using a variety of Architectural Engineers (AE) over the past 50 years. Those AE's used different line identifier, instrumentation identifiers, etc. As buildings were designed and constructed, the current architectural engineering standards for the time period were used. The diagrams of the processes submitted to the IDEQ span more than 50 years." ⁶³

What confidence can the public attribute to this grossly out-dated documentation and standards even if it were made public?

Finally, IDEQ must take a more critical review of this Permit than it has taken with previous INL Liquid Waste Management System RCRA Permit Modification and DOE's Modified Permit because of the extreme hazard this remote handled mixed transuranic waste treatment poses to the public. ⁶⁴ Moreover, there is no "path-forward" for the final waste form, so IDEQ must ensure that DOE develop a credible regulatory compliant interim storage for this waste until the final geologic repository is designated.

The Idaho Department of Environmental Quality has taken a position supporting the current Permit deficiencies and appears ready to issue similar findings for the new proposed permit. In the past, IDEQ chose to put the politically expedient ruling of Idaho's single largest employer ahead of public health and safety. Public comment is crucial to reversing this miss-guided priority.

Section V: DOE/IDEQ Modified Permit Discussion of Process Vents

1. Process Vents

DOE claims in its Permit Modification "SUBPART AA, SUBPART BB AND SUBPART CC APPLICABILITY [IDAPA 58.01.05.008; 40 CFR §§ 264.1030, 264.1050, AND 264.1080]; 40 CFR 264 Subpart AA requires owners or operators of facilities with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations managing hazardous wastes with organic concentrations of at least 10 ppmw to either: 1) reduce total organic emissions from all affected process vents at the facility below 1.4 kg/hr (3 lb/hr) and 42.8 Mg/yr (3.1 tons/yr); or 2) reduce, by use of a control device, total organic emissions from all affected process vents at the facility by 95 weight percent. A process vent is defined in 40 CFR 264.1031 as any 6 open-ended pipe or stack that is vented to the atmosphere either directly, through a vacuum-producing system, or through a tank associated with hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations. "

DOE's Draft Permit illegally adopts ⁶⁵ previous DOE claims that; "The IWTU does not involve distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations. As such, the IWTU stack does not meet the definition of a process vent in IDAPA 58.01.05.008 (40 CFR § 264.1031) and the requirements specified in 40 CFR 264

⁶³ PMR, Attachment 1, page 1-D-72

⁶⁴ PMR, Attachment 2 Section C, page 17

⁶⁵ Draft Permit, page 32 and 33.

Subpart AA do not apply." ⁶⁶

DOE PMR claims: "Wastes in the process condensate collection tanks (VES-WL-106, -107, and -163) are sampled for [total organic compounds] TOC before being transferred to the LET&D facility. Historical sample results of the LET&D feed have been in the range of 30 to 200 ppm for TOC. Therefore 40 CFR Subpart AA is applicable to the LET&D facility." ⁶⁷

"The LET&D facility off-gas system [total organic compounds] TOC emissions are controlled per the following calculations 22 and methodology: $23.3 \text{ lbs/hr} (454 \text{ g/lb}) = 1362 \text{ g/hr} = 1,362,000 \text{ mg/hr}$; maximum feed rate = 550 gal/hour; $25 (550 \text{ gal/hr}) (3.785 \text{ liters/gal}) = 2,079 \text{ L/hr}$ $1 (1,362,000 \text{ mg/hr}) / (2,079 \text{ L/hr}) = 655.1 \text{ milligrams/L} = 655.1 \text{ ppm}$."

It is uncertain that 40 CFR 264 Subpart AA and/or new EPA standards are met that requires owners or operators of facilities with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations managing hazardous wastes with organic concentrations of at least 10 ppmw to either: 1) reduce total organic emissions from all affected process vents at the facility below 1.4 kg/hr (3 lb/hr) and 42.8 Mg/yr (3.1 tons/yr); or 2) reduce, by use of a control device, total organic emissions from all affected process vents at the facility by 95 weight percent.

Again, IDEQ's Draft Permit misguidedly adopts ⁶⁸ DOE claims "40 CFR 264 Subpart BB Applicability IDAPA 58.01.05.008 (40 CFR 264 Subpart BB) applies to equipment that contains or contacts hazardous wastes with organic concentrations of at least 10% by weight. Sampling of the PEWE, system and ETS, and IWTU inputs have shown the maximum TOC contained in the waste to be less than 800 ppm. Since the TOC is less than 10 percent by weight, the requirements of 40 CFR 264 Subpart BB does not apply."

The above DOE Permit does not implement new: "EPA (2005) recommendations that organics and metal emissions be increased by factors of 2.8 and 1.45 respectively, to account for potential increases in emissions due to process upset conditions." ⁶⁹ [emphasis added]

DOE further claims "40 CFR 264 Subpart CC Applicability; 40 CFR 264.1080(b)(6) exempts from applicability a waste management unit that is used solely for the management of radioactive mixed waste in accordance with all applicable regulations under the authority of the Atomic Energy Act and the Nuclear Waste Policy Act. Process liquids associated with the ILWMS are radioactive mixed waste and are exempt from regulation under Subpart CC."

This is not a valid exemption claim because 40 CFR 264.1080(b) states:

"(b) The requirements of this subpart do not apply to the following waste management units at the facility: (1) A waste management unit that holds hazardous waste placed in the unit before December 6, 1996, and in which no hazardous waste is added to the unit on or after December 6, 1996. ... (6) A waste management unit that is used solely for the management of radioactive mixed waste in accordance with all applicable regulations under the authority of the Atomic Energy Act and the Nuclear Waste Policy Act."

DOE routinely, as of this date and future acknowledged operations, adds newly

⁶⁶ PMR, Attachment 2, Section C, page 2-52

⁶⁷ INL HWMA/RCRA INTEC Liquid Waste Management System Part B PMR Attachment 2, Section C, Waste Characteristics Volume 14 Revision Date: January 23, August 2006 2-53

⁶⁸ DOE Draft Permit, page 32 and 33.

⁶⁹ PMR page 1-D-138

generated waste to the ILWMS so the above exemption does not apply. Also, as these EDI comment articulate, DOE is not managing its "radioactive mixed waste in accordance with all applicable regulations under the Atomic Energy Act and the Nuclear Waste Policy Act" or other applicable statutes/regulations. **Therefore, DOE cannot claim this exemption.**

1. IWTU Permit Modification Process Information

DOE claims this "The IWTU utilizes a steam reforming process for treating INTEC Sodium Bearing Waste (SBW) and newly generated liquid wastes. IWTU site preparation is scheduled to begin in Spring 2007 and start of operations is scheduled in December 2009.

"This action is consistent with existing language in the PMR, which describes the current ILWMS treatment units as part of an overall treatment train for wastes stored at INTEC. The IWTU is the final unit in the overall ILWMS treatment system and will be used to convert the remaining stored liquid waste into a solid treatment product that is suitable for ultimate disposal."⁷⁰ **Again, current and previous ILWMS Permitting is deficient.**

2. IWTU Facility Description

"Bottoms Tank (VES-WL-101) and Feed Collection Tank (VES-WL-102) Vault The vault contains VES-WL-101 and VES-WL-102 and is constructed of reinforced concrete that ranges in thickness from 2 to 4 feet. This vault is 30 ft wide, 43 ft long and 16 ft high. The secondary containment is constructed of concrete floor lined with a Hypalon® membrane (Registered trademark of DuPont), which extends three feet up the walls. The main body of the membrane 9 has a 45-mil nominal thickness and is reinforced with denier polyester fabric scrim. Un-reinforced 10 membranes that are used for corner reinforcement and around the sump liner insert, which must be molded 11 to fit, is 60-mil nominal thickness. The Hypalon® membrane conforms to the requirements of the 12 National Sanitation Foundation Standard 54 (revised May 1991) Type 3-45, (industrial grade 13 chlorosulfonated polyethylene). All seams in the secondary containment are heat-welded or adhesive 14 bonded to avoid any cracks or gaps. The membrane is sealed around the tank saddles by silicone rubber 15 sealant that is capable of withstanding the expected waste solutions for extended periods of time."⁷¹

The above DOE disclosure of use of non-certified "silicone sealant" that is "capable of withstanding the expected waste" for some vague undocumented "extended period of time" is grounds for denial of the PMR under 40 CFR 270.42 because it does meet regulatory requirements for secondary containment.

3. Building CPP-641

"The Westside Waste Holdup System (VES-WL-103, VES-WL-104, and VES-WL-105) is housed in CPP-641, which is a cinderblock building 22 ft long and 15 ft wide. CPP-641 contains the instrumentation, motor control center, sample station, and jet valves for the tanks. The three tanks are located in two underground vaults north of CPP-641. The vault complex is 39 ft 8 in. long and 20 ft wide (outside dimensions). The east vault is 18 ft by 22 ft by 12 ft 6 in. high. "

⁷⁰ INL HWMA/RCRA INTEC Liquid Waste Management System Part B PMR Attachment 2, Section C, Waste Characteristics Volume 14 Revision Date: January 23, August 2006 2-54.

⁷¹ PMR Attachment B page 1-B-10

"The west vault measures 18 ft by 12 ft 2 in. by 12 ft 6 in. high. VES-WL-104 and VES-WL-105 share the east vault; VES-WL-103 is located in the west vault. **The VES-WL-103 vault floor and lower 4 ft 9 in. of the walls are lined with Hypalon®** with a stainless steel insert in the sump. **The remainder of the walls and ceiling are coated with an epoxy coating.** The VES-WL-104 and VES-WL-105 vault floors and 21lower 2 ft 6 in. of the walls are lined with Hypalon® with a stainless steel insert in the sump. The 22 remainder of the walls and ceilings are coated with epoxy coating."

With the exception of the above, the PMR fails to disclose if the required stainless steel secondary containment extends to the tank sumps.

Table D-1 PEWE Tanks ⁷²

Tank Number/ Description	Year of Operation	Materials of Construction	Design Standards
VES-WL-132 Evaporator Feed Sediment	1983	Nitronic 50	ASME Section VIII Stamped
VES-WL-133 Evaporator Feed Collection	1983	Nitronic 50	ASME Section VIII Stamped
VES-WL-102 Surge Tank For VES-WL-133	1951	Type 347 SS	See Note *
VES-WL-109 Evaporator Head	1953	Type 347 SS	See Note *
VES-WL-129 Evaporator	1985	Nitronic 50	ASME Section VIII Stamped
VES-WL-161 Evaporator	1984	Nitronic 50	ASME Section VIII Stamped
VES-WL-131 Condensate Surge	1975	Type 304L SS	Unknown
VES-WL-134 Condensate Surge	1984	Type 304L SS	ASME Section VIII Stamped
VES-WL-111 Bottoms Collection	2001	Type 304L SS	ASME Section VIII Stamped
VES-WL-101 Bottoms Collection	1951	Type 347 SS	See Note *
VES-WH-100, Deep tanks	1953	Type 347 SS	See Note *
VES-WH-101, Deep tanks	1953	Type 347 SS	See Note *
VES-WG-100, Deep tanks	1953	Type 347 SS	See Note *
VES-WG-101, Deep tanks	1953	Type 347 SS	See Note *
VES-WL-103 WWH tank	1961	Type 304L SS	Not Stamped See Note **

⁷² PMR Attachment D pg. 1-D-45

VES-WL-104 WWH tank	1961	Type 304L SS	Not Stamped See Note **
VES-WL-105 WWH tank	1961	Type 304L SS	Not Stamped See Note **
VES-WM-100 CPP-604 TFT	1953	Type 347 SS	See Note *
VES-WM-101 CPP-604 TFT	1953	Type 347 SS	See Note *
VES-WM-102 CPP-604 TFT	1953	Type 347 SS	See Note *
VES-WL-106 Process Condensate Collection Tank	1953	Type 347 SS	See Note *

Note *: Due to the age of these tanks, no documentation exists to confirm standards. Conversation with the vendor indicates the tanks were built to API or to ASME Standards. It is common practice for the vendor to maintain the documentation for 20 years.
 Note **: Not Stamped – Built to ASME Section VIII. No code stamp required.

Twelve of the above listed tanks date back to the early 1950s, 45 years beyond their 20-year design life. Nine of the above tanks put into service in the 1960s and 1980s are also long beyond their design life. An additional four tanks have no certification stamp. **So a total of 26 tanks (just in this above table) are not in compliance. The ASME design standards for the other tanks are only relevant if the tanks have not exceeded their design life. DOE must provide documentation on each tanks design life and age to validate their continued use through the operational life of the ILWMS.**

Table D-2. LET&D Tanks ⁷³

Tank Number/ Description	Year of Operation	Materials of Construction	Design Standards
VES-WLK-197 Division 1	1993	Type 304L SS	ASME Section VIII
VES-WLL-170 Division 1	1993	Hastelloy G-30	ASME Section VIII
VES-WLK-171 Division 1	1993	Hastelloy G-30	ASME Section VIII
VES-WLL-195 Division 1	1993	Type 304L SS	ASME Section VIII
VES-NCR-171	1995	Type 304 SS	ASME Section VIII Division 1
VES-NCR-173	1995	Type 304L SS	Fabricated per Project Drawings (no certification)

" No certification" equals RCRA non-compliance.

⁷³ PMR Attachment 1. Section D, Process Information

Table D-3 Evaporator Tank System (ETS) formerly called the High-Level Liquid Waste Evaporator [Attachment 1. Section D, Process Information]

ETS Tanks Number/Description	Year of Operation	Materials of Construction	Design Standards
VES-NCC-101	1982	Nitronic 50	ASME Section VIII Division 1*
VES-NCC-102	1982	Nitronic 50	ASME Section VIII Division 1*
VES-NCC-103	1982	Nitronic 50	ASME Section VIII Division 1*
VES-NCC-119	1982	Nitronic 50	ASME Section VIII Division 1*
VES-NCC-122	1982	Nitronic 50	ASME Section VIII Division 1*
VES-NCC-150	1996	G-30 Hastelloy	ASME Section VIII Division 1
VES-NCC-152	1996	Nitronic 50	ASME Section VIII Division 1
VES-NCC-108	1982	Nitronic 50	ASME Section VIII Division 1*
VES-NCC-136	1982	Type 304 SS	ASME Section VIII Division 1*
VES-NCC-116	1982	Type 304 SS	ASME Section VIII Division 1*

Note *: Not Stamped - Built to ASME Section VIII. No code stamp required.

"No code stamp required??" The code stamp is a RCRA requirement and is the only legitimate verification that the tank does in fact meet the standard. Again, these tanks are likely beyond their 20-year design life. Therefore, DOE must provide documentation on each tank design life. **Again, the ASME design standards for the tanks is only relevant if the tanks have not exceeded their design life and future operational planned use. DOE must provide documentation on each tanks design life to validate their continued use through the operational life of the ILWMS.**

4. ILWMS Ancillary Equipment

ILWMS Ancillary Equipment

"Ancillary piping and equipment associated with the ILWMS are included in this PMR, **except the piping and equipment identified below: [I-D-72]**

- This PMR does not include piping and equipment associated with the TFF. The piping and equipment associated with the [tank farm facility] TFF will be operated under interim status/Consent Order and will be RCRA closed with the tank farm closure.
- This PMR does not include piping and equipment associated with CPP-666. The CPP-666 (Fluorine Dissolution Process) lines are not included because they carry only radioactive waste.
- This PMR does not include piping and equipment associated with CPP-603. The line from CPP-603 is not included in this PMR because it will be closed with VES-SFE-106. VES-SFE-106 is currently operated under interim status and will be RCRA closed.

- This PMR does not include piping and equipment associated with CPP-640 (VES-HW-101, VES-HW-102 and VES-HW-103). The lines associated with these vessels will be operated and closed under interim status. "

DOE's Permit Modification (PM) acknowledges secondary containment in waste service piping: "**Concrete-embedded transfer lines have been identified at the ILWMS.**"⁷⁴ This is a violation of compliance with 40 CFR § 264.193(f) that requires monitored leak collection and welded stainless steel secondary containment. Although DOE claims its intent to upgrade or reroute these service lines, there is no apparent confirmation that all of these upgrades has occurred.

RCRA does not provide for the above DOE claimed exemptions. Therefore, the PM is deficient. Extensive use of old non-compliant "drip troughs" in CPP-604, CPP-605, CPP-1618, and CPP-1696 ancillary service lines instead of the required welded stainless steel secondary containment with continuous monitoring, are grounds for denying the PMR.⁷⁵

DOE's PM states: The following is an explanation of the symbols the Idaho National Laboratory (INL) has chosen to identify the RCRA-regulated tank systems associated with the INTEC on the diagrams:

"R - Indicates an active RCRA-regulated liquid transport line requiring secondary containment and inspections.

E - Indicates that the lines in question are not used to routinely manage hazardous waste. They would only receive hazardous waste if an unplanned spill or release occurred. As such, the lines are not subject to secondary containment, daily inspections, or closure. Where drains are located with the secondary containment system for regulated units, they are considered an integral part of a secondary containment system and subject to applicable regulatory requirements associated with secondary containment systems."⁷⁶ [Emphasis added]

The above disclosure is non-compliant because all the INTEC tank systems must comply because RCRA does not distinguish between "routine" and "non-routine." DOE PMR also claims:

"The off gas piping for the [INTEC Liquid Waste Management System] ILWMS, while subject to HWMA/RCRA regulations as ancillary equipment to the regulated unit, does not require secondary containment because it is not intended to manage free liquids. However, any liquid condensate from such a gas/vapor stream may be subject to RCRA requirements (December 11, 1989, 54 FR 50968). The ILWMS is designed to remove condensable liquids from off gas. These condensable liquids are collected in tanks equipped with secondary containment and leak detection devices."⁷⁷

The above DOE claimed RCRA exemption from secondary containment is not credible because liquid "condensate" (i.e. 12-inch LET&D off-gas line) is either pumped or transferred via gravity service lines to other process units and the liquid concentrated "bottoms" are pumped

⁷⁴ PMR, Attachment, page 1-D-87

⁷⁵ PMR Attachment 1-D-Process pg. 99

⁷⁶ INL HWMA/RCRA ILWMS INTEC Liquid Waste Management System PMR Attachment 1, Section D, and Process Information Volume 14 Revision Date: January 23, August 2006, page 1-D-72.

⁷⁷ PMR page 1-D079

back to the waste tanks. Additionally the PMR claims that no liquids are in the "over-head" or "bottoms" service lines in another effort to claim secondary containment exemptions.

DOE also claims; "Drip troughs are located beneath process transfer lines within CPP-604, CPP-605, and CPP-1618. A drip trough also extends below the pipe bridge that spans from CPP-605 to the LET&D facility. The troughs are designed to collect liquid (e.g., recovered nitric acid) in the event of a leak from the process transfer lines. These drip troughs are sloped and drain to collection bottles located within each system. The drip troughs located within the LET&D facility is **not** equipped with leak detection devices." ⁷⁸ "Drip troughs" do not meet RCRA secondary containment requirement of monitored welded stainless steel enclosure for ancillary service lines.

5. IWTU Tanks

Table D-4 ⁷⁹

Tank Number Description	Year of Operation	Materials of Construction	Design Standard(s)
VES-SRC-131 Waste Feed Tank	2009	Type 304L SS	ASME Section VIII Division 1*
VES-SRC-140 Denitration and Mineralization Reformer	2009	Haynes 556 Alloy	ASME Section VIII Division 1
VES-SRC-160 Carbon Reduction Reformer	2009	Carbon Steel and Alumina/Chrome Oxide Based Refractory Lined	ASME Section VIII Division 1
COL-SRC-170A, B, & C Product Receivers/Coolers	2009	Type 316H SS	ASME Section VIII Division 1
TK-SRH-196	2009	Fiberglass-Reinforced Plastic (Double Wall)	N/A

Note * : Not Stamped - Built to ASME Section VIII. No Code Stamp Required.
 N/A: Not Available?

"Not Stamped...No code stamp required??" Again, the code stamp is a RCRA requirement and is the only legitimate verification that the tank does in fact meet the standard. DOE must provide documentation on each tank design life. The ASME design standards for the other tanks are only relevant if the tanks have **not** exceeded their design life. DOE must provide documentation on each tanks design life to validate their continued use through the operational life of the ILWMS. Regardless if the N/A means "not available" or "not applicable" then this too is non-compliant because all tanks must meet standards for the materials contained in them.

DOE's PMR claims in Section D-8b that; "No viable pathway exists for migration of hazardous waste or hazardous constituents from the waste treated in the PEWE, LET&D, ETS, or IWTU to the soil, ground water, and/or surface waters. A potential pathway for release of waste constituents is through exhaust air either from PEWE, LET&D, ETS, or IWTU. Any release would be limited to the period during which PEWE, LET&D, ETS, or IWTU are operating. The potential for a release though the exhaust air system of hazardous constituents

⁷⁸ PMR page 1-D-99

⁷⁹ PMR page 1-D-52

that could potentially have adverse effects on human health or the environment is minimized by the PEWE, LET&D, ETS, or IWTU off-gas systems." ⁸⁰

DOE's above statement is not true because of the extensive soil and groundwater monitoring data under INTEC show massive contaminate migration to the soil and groundwater. DOE further claims; "Although they are not specifically designed to trap organic constituents, HEPA filters trap any particulates that may contain hazardous constituents. The process will contain the waste constituents in the liquid and, thus only minute amounts of waste constituents can potentially escape the process. The ETS **condenses** and collects the [process off gas] POG and transfers it to the PEWE system for further treatment as discussed previously." ⁸¹ "Any remaining **liquids** in the off gas enter the NWCF POG and are removed in mist eliminators, VES-NCC-136 and VES-NCC-116." ⁸² [Emphasis added]

Yet, DOE's PMR claims no liquid condensates are transferred between treatment units requiring secondary containment of service waste piping. As these comments articulate the ILWMS process offgas systems are inadequate, and DOE's attempt to exempt these process vents from regulatory compliance, is clear evidence that they would not meet critical scrutiny on compliance.

Section VI. Applicable Regulations

40 CFR 270.42

- "(i) PMR modification list. The Director must maintain a list of all approved PMR modifications and must publish a notice once a year in a State-wide newspaper that an updated list is available for review.
- (j) **Combustion facility changes to meet part 63 MACT standards.** The following procedures apply to hazardous waste combustion facility PMR modifications requested under Appendix I of this section, section L(9).
- (1) Facility owners or operators must have complied with the Notification of Intent to Comply (NIC) requirements of 40 CFR 63.1210 that were in effect prior to October 11, 2000, (See 40 CFR Part 63 Revised as of July 1, 2000) in order to request a PMR modification under this section.
 - (2) If the Director does not approve or deny the request within 90 days of receiving it, the request shall be deemed approved. The Director may, at his or her discretion, extend this 90 day deadline one time for up to 30 days by notifying the facility owner Or operator." [Emphasis added]

DOE has not met the above regulatory requirements in this PMR because the Clean Air Act National Environmental Standard for Hazardous Air Pollutants (NESHAP) Part 63 MACT standards have not been applied to the process vents. The IWT extracts nitric acid and re-circulates it back into the ILWMS process.

40 CFR 260.10 Definitions State:

"(11) Combustion devices used in the recovery of sulfur values from spent sulfuric

⁸⁰ PMR page 1-D-104

⁸¹ PMR page 1-D-104

⁸² PMR page 1-D-105

acid.

"(13) Such other devices as the Administrator may, after notice and comment, add to this list on the basis of one or more of the following factors:

- (I) The design and use of the device primarily to accomplish recovery of products;**
- (ii) The use of the device to burn or reduce raw materials to make a material product;**
- (iii) The use of the device to burn or reduce secondary materials as effective substitutes for raw materials, in processes using raw materials as principal feedstock's;**
- (iv) The use of the device to burn or reduce secondary materials as ingredients in an industrial process to make a material product;**
- (v) The use of the device in common industrial practice to produce a material product; and**
- (vi) Other factors, as appropriate." [Emphasis added]**

40 CFR 191 states:

"Note 4: Treatment of Fractionated High-Level Wastes. In some cases, a high-level waste stream from reprocessing spent nuclear fuel may have been (or will be) separated into two or more high-level waste components destined for different disposal systems. In such cases, the implementing agency may allocate the Release Limit multiplier (based upon the original MTHM and the average fuel burnup of the high-level waste stream) among the various disposal systems as it chooses, provided that the total Release Limit multiplier used for that waste stream at all of its disposal systems may not exceed the Release Limit multiplier that would be used if the entire waste stream were disposed of in one disposal system.

"Note 5: Treatment of Wastes with Poorly Known Burnups or Original MTHM. In some cases, the records associated with particular high-level waste streams may not be adequate to accurately determine the original metric tons of heavy metal in the reactor fuel that created the waste, or to determine the average burnup that the fuel was exposed to. If the uncertainties are such that the original amount of heavy metal or the average fuel burnup for particular high-level waste streams cannot be quantified, the units of waste derived from (a) and (b) of Note 1 shall no longer be used. Instead, the units of waste defined in (c) and (d) of Note 1 shall be used for such high-level waste streams. If the uncertainties in such information allow a range of values to be associated with the original amount of heavy metal or the average fuel burnup, then the calculations described in previous Notes will be conducted using the values that result in the smallest Release Limits, except that the Release Limits need not be smaller than those that would be calculated using the units of waste defined in (c) and (d) of Note 1.

"Note 6: Uses of Release Limits to Determine Compliance with Sec. 191.13. Once release limits for a particular disposal system have been determined in accordance with Notes 1 through 5, these release limits shall be used to determine compliance with the requirements of Sec. 191.13 as follows. In cases where a mixture of radionuclides is projected to be released to the accessible environment, the limiting values shall be determined as follows: For each radionuclide in the mixture, determine the ratio between the cumulative release quantity projected over 10,000 years and the limit for that radionuclide as determined from Table 1 and Notes 1 through 5. The sum of such ratios for all the radionuclides in the mixture may not exceed one with regard to Sec.

191.13(a)(1) and may not exceed ten with regard to Sec. 191.13(a)(2). For example, if radionuclides A, B, and C are projected to be released in amounts Q_a , Q_b , and Q_c , and if the applicable Release Limits are RL_a , RL_b , and RL_c , then the cumulative releases over 10,000 years shall be limited so that the following relationship exists:"

Section VII: Regulatory Definitions

40 CFR 260.10

"Infrared incinerator means any enclosed device that uses electric powered resistance heaters as a source of radiant heat followed by an afterburner using controlled flame combustion and which is not listed as an industrial furnace."

"Miscellaneous unit means a hazardous waste management unit where hazardous waste is treated, stored, or disposed of and that is not a container, tank, surface impoundment, pile, land treatment unit, landfill, incinerator, boiler, industrial furnace, underground injection well with appropriate technical standards under part 146 of this chapter, containment building, corrective action management unit, unit eligible for a research, development, and demonstration PMR under 40 CFR 270.65, or staging pile."

"Ancillary equipment means any device including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps, that is used to distribute, meter, or control the flow of hazardous waste from its point of generation to a storage or treatment tank(s), between hazardous waste storage and treatment tanks to a point of disposal onsite, or to a point of shipment for disposal off-site."

"Containment building means a hazardous waste management unit that is used to store or treat hazardous waste under the provisions of subpart DD of parts 264 or 265 of this chapter."

"Disposal means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters."

"Disposal facility means a facility or part of a facility at which hazardous waste is intentionally placed into or on any land or water, and at which waste will remain after closure. The term disposal facility does not include a corrective action management unit into which remediation wastes are placed. Drip pad is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants."

"Drip pad is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood

preserving plants."

"Liner means a continuous layer of natural or man-made materials, beneath or on the sides of a surface impoundment, landfill, or landfill cell, which restricts the downward or lateral escape of hazardous waste, hazardous waste constituents, or leachate."

"Tank means a stationary device, designed to contain an accumulation of hazardous waste which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, **plastic**) which provide structural support."

"Thermal treatment means the treatment of hazardous waste in a device which uses elevated temperatures as the primary means to change the chemical, physical, or biological character or composition of the hazardous waste. Examples of thermal treatment processes are incineration, molten salt, pyrolysis, calcination, wet air oxidation, and microwave discharge. (See also ``incinerator" and ``open burning".)"

"Totally enclosed treatment facility means a facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment. An example is a pipe in which waste acid is neutralized."

40 CDR 264.1031 Definitions

"Process vent means any open-ended pipe or stack that is vented to the atmosphere either directly, through a vacuum-producing system, or through a tank (e.g., distillate receiver, condenser, bottoms receiver, surge control tank, separator tank, or hot well) associated with hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations."

"Distillation operation means an operation, either batch or continuous, separating one or more feed stream(s) into two or more exit streams, each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and vapor phase as they approach equilibrium within the distillation unit."

"Fractionation operation means a distillation operation or method used to separate a mixture of several volatile components of different boiling points in successive stages, each stage removing from the mixture some proportion of one of the components."

"Distillate receiver means a container or tank used to receive and collect liquid material (condensed) from the overhead condenser of a distillation unit and from which the condensed

liquid is pumped to larger storage tanks or other process units."

Respectfully submitted
on behalf of the Environmental Defense Institute
and
Keep Yellowstone Nuclear Free

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Attachment B

EPA Region 10 February 26, 2007 Ruling on Environmental Defense Institute, et al. Comments Opposing EPA's November 9, 2006 Proposed Rule, "Idaho: Proposed Authorization of State Hazardous Waste Management Program Revision."