

**INEEL NEWS**  
**Environmental Defense Institute**  
**News and Information on**  
**Idaho National Engineering and Environmental Laboratory**

February 2003

Volume 14 Number 1

## **INEEL is Violating Air Emission Regulations**

The Environmental Defense Institute (EDI) recently discovered government reports that document hazardous air pollutant emissions from the Department of Energy (DOE) Idaho National Engineering and Environmental Laboratory (INEEL) which significantly exceed the Resource Conservation Recovery Act (RCRA) limits, and the Clean Air Act (CAA) standards.

INEEL currently has over a million gallons of high-level liquid radioactive waste that also has high concentrations of volatile organic compounds (VOC) such as solvents used to dissolve reactor fuel rods and highly toxic heavy metals like mercury and chromium. These VOC's can vaporize easily into a gas and go out the exhaust stack unless the proper filters (i.e., carbon bed) required by the regulations are used to control these emissions. Currently, INEEL only uses dust particle filters, called HEPA filters, which do not stop VOC or volatilized radionuclides like iodine-129 from being discharged into the environment.<sup>1</sup>

Since 1963 when INEEL first started incinerating its high-level liquid radioactive waste to conserve tank space, over eight million gallons have been processed in what DOE calls "calciner" incinerators or processed in High-Level Liquid Waste Evaporators.<sup>2</sup>

High-level liquid waste is the most deadly material in the world not only due to the intense radioactivity but also due to the hazardous chemical and heavy metal constituents. To this date none of these extremely hazardous waste processing operations has ever been permitted due to the fact that none could meet the federal EPA regulatory emission standards.

In April of 2000, the Environmental Defense Institute, Keep Yellowstone Nuclear Free and David McCoy filed a Notice of Intent to Sue DOE and the State and Federal Regulators unless they shut down these radioactive waste incinerators. The "Calciner" was subsequently put on temporary "stand-down."

However, the High-Level Liquid Waste Evaporator and other radioactive waste evaporators continue to

operate. In July of 2002, EDI, KYNF, and McCoy filed another Notice of Intent to Sue DOE and the Regulators over the illegal operation of the high-level waste evaporators.

The Environmental Protection Agency sets numerical regulatory limits on how much hazardous air pollutants can be released on both an hourly as well as annual basis.<sup>3</sup> The Comparison of Hazardous Air Pollutant Table below shows what was released and what the regulatory limit is for that category of emission. The Table shows, for instance, VOC emissions as high as 6,971 as a percent of the hourly standard and 4,000% over the maximum annual average release.

EDI believes the INEEL emission data is significantly understated because the DOE operators do not adequately monitor for these emissions which is in itself a violation of the regulations. DOE claims that it is sufficient to use what they call "process knowledge" to "estimate" emissions. The State regulators are aware of these monitoring deficiencies and emission violations, however have yet to take any regulatory action to shutdown the operations until such time as DOE can demonstrate compliance.

The Idaho Department of Environmental Quality, to its credit, did issue a Notice of Deficiency on DOE's hazardous waste permit application on two of the three waste evaporators. It is not likely a coincidence that these regulators are finally recognizing the non-compliance emission issues after being named along with DOE in Notices of Intent to Sue for violating environmental laws.

For a more complete analysis of this non-compliance emission issue and our challenge on RCRA Permit Application, see EDI's Website Publications on Petition to EPA Office of Enforcement and Compliance Assurance. <http://personalpages.tds.net/~edinst>

## EPA Fines DOE \$175,000 for INEEL Violations

On December 4, 2002, Environmental Protection Agency (EPA) Region 10 in Seattle filed a Notice of Violation Penalty Assessment against the DOE for violations of numerous federal environmental laws for failure to comply with "remedial actions" related to the INEEL's high-level radioactive waste tanks. According to the EPA Notice, the initial penalty will accrue after the first week at a rate of \$10,000 per week until the violation is corrected.

At issue according to EPA is DOE's failure to "establish necessary infiltration controls to reduce infiltration through the High Level Waste Tank Farm Soil by 80% thereby minimizing continued leaching of radionuclides into the underlying aquifer." DOE's current actions, "do not prevent the mobilization of contaminants from the pipes and valves into the soil and eventually into the underlying aquifer since the soil continues to be exposed to precipitation." It must be noted that these initial fines are always drastically reduced via negotiation behind closed doors (called dispute resolution) and not made publicly available. The final fines are the equivalent to a traffic violation that DOE historically just factors into its operational budget as a cost to continue to pollute. This ineffectual "patty cake" regulatory process between sister executive branch agencies has been going on for decades with no fundamental changes that would effectively protect the aquifer.

This is a significant issue given the fact that radioactive and chemical waste continues to migrate from the INEEL site into the underlying Snake River Aquifer as documented by water sample data from the US Geological Survey (USGS) that shows this pollution migration well beyond the INEEL boundary. Leaks and spills from these deadly waste storage areas pose a major hazard for all Idahoans who rely of the aquifer.

The Environmental Defense Institute applauds this EPA regulatory initiative, however it remains fundamentally a band-aid that fails to address the underlying crucial hazards. EPA and the State of Idaho approved a closure plan for two INEEL high-level waste tanks that would allow nearly all of the tank sediments to remain with only some concrete grout to minimally "stabilize" the waste. The Natural Resources Defense Council (NRDC), together with most of the

NW Native American Tribes, has challenged the INEEL, Hanford, and Savannah, tank closure plans in US Federal Court.

The Environmental Defense Institute (EDI) filed an Friend of the Court Brief in support of the NRDC suit against DOE where EDI documented USGS studies that showed these tanks were within the Big Lost River flood plain and thus vulnerable to long term flooding and migration of contaminants into the aquifer. This information shows categorically that this site does not qualify as a high-level radioactive hazardous waste disposal site. ☹

### Happy 2003 New Year

On Behalf of EDI's Board of Directors, volunteer staff and contributing consultants, we want to express our collective heart felt thanks to all of you who found EDI's work worth your financial support over the years. This crucial support is what makes it possible to keep EDI's doors open wide for all to see, and to pay for the research and distribution costs of this newsletter.

### End Notes:

1. Environmental Compliance Inventory of INEEL, Volume I - ECI Results, December 1996, Lockheed Martin, INEEL-96/0389, pg. 2.1-6.
2. Idaho High-Level Waste Environmental Impact Statement, 1999, pg. C.9-11, DOE/EIS-0287D.
3. Under 40 CFR 264.1032(a), and 265.1032 Process Vent Standards that applies to fractionators and evaporators that states: "Reduce total organic emissions from all affected process vents at the facility below 1.4 kg/hr (3 lb/hr) AND 2.8 Mg/yr (3.1 tons/yr), or, "Reduce by use of a control devise, total organic emissions from all effected process vents ...by 95 weight percent."

Under 40 CFR 63.112 Major Source: "Section 112(a)(1) of the Act defines a major source as: any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential - to - emit considering controls, in the aggregate 10 tons per year (tpy) or more of any [hazardous air pollutant] HAP or 25 tpy or more of any combination of HAP." [ FR 57574 10/26/99 final ruling]

Comparison of Hazardous Air Pollutant at INEEL <sup>f</sup>						
1995 <sup>a</sup>		1996 <sup>b</sup>		1997 <sup>b</sup>		
Pollutant or Standard	Maximum Hourly kg/hr	Annual Average kg/yr	Maximum Hourly kg/hr	Annual Average kg/yr	Maximum Hourly kg/hr	Annual Average kg/yr
Volatile Organic Compound	97.6	4,317	59	16,000	37	27,000
RCRA <sup>c</sup> VOC Standard	1.4	2,800	1.4	2,800	1.4	2,800
As % of VOC Standard	6971	154	4214	571	2642	964
Total Hazardous Air (HAP) Pollutant <sup>d</sup>	N/A	10,447	N/A	N/A	N/A	27,000
CAA <sup>e</sup> HAP Standard	N/A	25,000	N/A	25,000	N/A	25,000

**Above Table Notes:**

- a. DOE Programmatic Spent Nuclear Fuel Management and INEEL Environmental Restoration and Waste Management Programs Final Environmental Impact Statement (PEIS) 1995, Volume 1, Appendix B, Table 4.7-1, p 4.7-5. Total organics is derived by adding listed organics.
- b. INEEL Final September 2002 High-level Waste Environmental Impact Statement, Table 4-11 page 4-34 lists Actual Site wide Volatile Organic Compounds emissions.
- c. Resource Conservation Recovery Act (RCRA) 40 CFR 264.1032(a) and 265.1032(a). Contaminant units in the CFR's are Mg/yr = million grams/year. 1000 kg/yr = 1 Mg/yr.
- d. 1995 PEIS (see a above), Table 4.7-1 total of all Hazardous Air Pollutants. There are dozens of other regulated hazardous air pollutants emitted based on RCRA Permit Application Waste Codes, however data available only allows this incomplete summary. The PEIS states at page 4.7-4 "The INEEL is considered a major source, because facility-wide emissions of specific regulated air contaminants exceeded 227 metric tons (250 tons) per year."
- e. See Clean Air Act 40 CFR 63.112. Major Source: "Section 112(a)(1) of the Act defines a major source as: any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential - to - emit considering controls, in the aggregate 10 tons per year (TPY) or more of any [hazardous air pollutant] HAP or 25 tpy or more of any combination of HAP." [FR 57574 10/26/99 final ruling] "The term 'major source' is defined in 40 CFR part 63, Subpart A- General Provisions, and includes the requirement for considering emissions and the potential for emissions from co-located sources when determining major source status. Therefore, the major source determination must be based on facility-wide emissions." [FR 75756 10/26/99]
- f. The data in the above table is incomplete because the information gained through Freedom of Information Act and the State of Idaho's Public Information Requests are incomplete, however partially released data shows significant violation of federal and state environmental laws.