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Court Rules No on Reclassification of Nuclear Waste

A federal district court judge ruled July 3 that the Department of Energy violated the law when it granted itself the authority to reclassify high-level nuclear waste so that it could abandon it at three nuclear weapons facilities. In his ruling, Judge B. Lynn Windmill at the U.S. District Court in Boise, said, "DOE does not have discretion to dispose of defense [high-level waste] somewhere other than a repository established under [the Nuclear Waste Policy Act]."

"This ruling is a great victory for the environment and communities near high-level radioactive waste sites," said Geoffrey Fettus, staff attorney at Natural Resources Defense Council who argued the case on behalf of NRDC, the Yakama Nation, the Shoshone-Bannock tribes and the Snake River Alliance. "It's stunning that the Energy Department was trying to cut corners when dealing with a substance as dangerous as high-level nuclear waste. It was prepared to create 'national sacrifice zones' at three sites, which would have posed a long-term threat to public health."

Dr. Thomas Cochran, a physicist and director of NRDC's Nuclear Program, noted that "this case is the most egregious of several ongoing efforts by the Department of Energy and the nuclear industry to 'solve' their nuclear waste problems by relaxing regulatory standards instead of cleaning up their mess."

The NRDC February 2002 complaint argued that DOE, by awarding itself the authority to reclassify high-level nuclear waste as "incidental waste," violated federal law and would allow the agency to use a substantially less protective standard of cleanup for some 100 million gallons of the nation's most highly radioactive waste. Most of this waste is located in underground tanks at the Hanford nuclear reservation in Washington; the Idaho National Engineering and Environmental Laboratory (INEEL) near Idaho Falls; and the Savannah River site near Aiken, South Carolina. Several tanks in Washington and South Carolina are leaking.

The court agreed with NRDC and its co-plaintiffs that DOE is required by the Nuclear Waste Policy Act to bury of all of its high-level radioactive waste deep underground in a geologic repository. To abandon tens of thousands of gallons of high-level waste in corroding tanks would ensure that waste would eventually leach into the groundwater adjacent to the Columbia River in Washington, the Snake River Aquifer in Idaho, and into the water table at the Savannah River site.

Despite the court ruling, major uncertainties remain. DOE spokesman Joe Davis said in recent news articles that an appeal to the court decision is being considered by the agency. Judge Windmill never issued an injunction blocking any DOE attempts to precede with its illegal tank closure plans stating: "There is no indication, however, that DOE will ignore this decision and continue with any plan inconsistent with the NWPA. Thus, the Court finds no need at this time to issue injunctive relief. Should that need arise in the future, plaintiffs are free to re-open this case and pursue that relief."

Additional uncertainties include how far along the INEEL high-level waste tank closure plan progressed after the State's approval date in April 2002. This approval by the State of Idaho and EPA was in blatant disregard to the NRDC suit filed two months earlier. [i] The Idaho regulators apparently chose to ignore not only NRDC's Federal Court challenge filed in February 2002, but also amicus (friend of the court) briefs filed by four states in support of NRDC.

The State of Idaho issued a Public Notice in March 2002 for the closure of two out of the eleven INEEL high-level waste tanks. This would have allowed DOE to leave thousands of gallons of waste permanently in these two tanks alone. Idaho is hiding behind a previous questionably legal agreement with DOE to put the tanks in "interim status" which is a regulatory term for "grand-fathering" existing operations. Even the most pedestrian review of the chronology would conclude that Idaho and DOE were intent on tank closure, regardless of public and ultimately court challenges to the program.

The Environmental Defense Institute filed several petitions to the Idaho Department of Environmental Quality protesting the agency's approval of the INEEL tank closure permit. [ii] None of these EDI petitions were substantively responded to by State of Idaho regulators. Apparently the only review that Idaho and DOE will pay attention to is a court order!

Over the past 50 years, U.S. nuclear weapons facilities have generated some 100 million gallons of high-level radioactive waste. In 1982, Congress passed the Nuclear Waste Policy Act, which requires the Department of Energy to dispose of this waste in a deep, geologic repository. Although the government recently selected a site in Nevada for burying this waste, it still sits in more than 200 massive underground storage tanks at three DOE sites: the Hanford Reservation in Washington near the Columbia River, the Idaho National Engineering and Environmental Laboratory (INEEL) above the Snake River Aquifer, and the Savannah River Site in South Carolina. Managing these tanks is DOE's most expensive and technically complex problem. The agency has considered numerous plans and implemented some, including transferring pumpable liquids from single-shelled tanks to double-shelled tanks at Hanford; heating the waste to convert it to a powdery form, a process called calcining, at INEEL; and vitrifying the waste - stabilizing it by mixing it with molten glass - in anticipation of burying it in a geologic repository. Regardless, hundreds of thousands of gallons of high-level radioactive waste have leaked from these storage tanks into the environment.

Prior to this recent court ruling, DOE was trying to exploit a loophole in its rules to violate the Nuclear Waste Policy Act, allowing it to leave high-level radioactive at the three sites, which would seriously threaten public health and the environment.

DOE's plan creates three national sacrifice zones for high-level radioactive waste. Leaving tens of thousands of gallons of high-level radioactive waste in INEEL, Hanford, and Savannah River waste tanks will result in a potentially catastrophic dispersal of radioactivity into the environment and, at a minimum, require significant land-use restrictions, maintenance, and monitoring for thousands of years. The incidental waste exemption is a clear violation of the letter and spirit of the Nuclear Waste Policy Act, whose goal is to ensure that high-level radioactive waste does not "adversely affect the public health and safety and the environment for this or future generations," according to NRDC.

The environmental, public health and fiscal implications of this case are staggering. The budget for cleaning up the underground tanks is the single largest item in the DOE cleanup program, a program with an annual budget that roughly equals that of the Environmental Protection Agency -- approximately $7 billion. NRDC's win in this case will dramatically shift the costs of cleaning up high-level radioactive waste. Instead of paying for institutional controls and water treatment systems in perpetuity for national sacrifice zones, the agency would have to devise a more comprehensive plan to clean up and remove the waste. This would likely cost more over the short term, but much less when the cost is amortized over 250,000 years of dangerous radioactivity.

As a result of this litigation, the Energy Department is asking Congress to amend the definition of high-level radioactive waste to allow it to exempt thousands of gallons of high-level radioactive waste from Nuclear Waste Policy Act requirements. NRDC is concerned that an appropriations or defense authorization bill could be the vehicle for such an effort early this year. Such an act by Congress would sanction DOE's plans, which would have catastrophic, long-term consequences for the environment and public health in Idaho, Oregon, South Carolina and Washington. Moreover, if Congress passes such an amendment, it will undermine its own authority, as well as state authority, to oversee DOE radioactive waste cleanup.

Tragically, the Republican-controlled General Accounting Office testimony before Congress this month recommended that DOE ask Congress to amend the Nuclear Waste Policy Act to avoid compliance with the District Court ruling and the current statutory requirements.[iii] The GAO is apparently more interested in saving money for other Bush Administration priorities than in protecting the health and safety of Americans living near these leaking nuclear waste tanks. In Idaho, alone, hundreds of thousands of Snake River Aquifer users and millions more of down-stream Snake River water users remain at risk. The nuclear waste at INEEL has already contaminated the aquifer. This makes the government's attempt to change a law they don't want to comply with even more egregious. For more information also see www.nrdc.org

DOE Appeals Forced Cleanup of INEEL Buried Waste

The U.S. government is apparently appealing yet another Idaho Federal District Court decision ordering it to dig up buried transuranic waste at the INEEL and ship it out of Idaho. Margaret Windborne reports in the Idaho Falls *Post Register* that the government filed its notice to appeal the decision to the Ninth Circuit Court of Appeals in San Francisco. Windborne notes that:

"The appeal continues a years-long argument over language in a specific paragraph in the 1995 Settlement Agreement, which restricts what kind of nuclear waste can enter Idaho, and sets deadlines for cleaning up waste at the Idaho National Engineering and Environmental Laboratory. DOE officials have argued the agreement between the U.S. government and the state of Idaho calls for the removal of about 65,000 cubic meters of transuranic waste **stored** above ground at the Radioactive Waste Management Complex. Idaho officials maintain the agreement stipulates that all transuranic waste, including that **buried** in 10 to 15 acres of the [Pit-9] landfill, be dug up and shipped out of state. U.S. District Court Judge Edward Lodge ruled in the state's favor on March 31. Gov. Dirk Kempthorne supports Lodge's ruling and maintains that **all** really does mean **all,**' said the governor's spokesman Mark Snider. 'The judge's ruling should really be the end of the issue and we should move forward on cleaning up all waste at the site,' he said."

Kempthorne is being considered by the Bush Administration to replace former EPA Administrator Christine Todd Whitman. It is uncertain how strenuous the State of Idaho's legal defense will be with Idaho's Lieutenant Governor who will apparently assume Kempthorne's leadership if he takes on the EPA position.

The State of Idaho reopened the1995 litigation as then Governor Batt said "to get the nuclear waste out of Idaho" because DOE is reneging on its agreement to exhume all the buried high-level and transuranic radioactive waste currently in shallow burial at INEEL. This 97 acre radioactive and hazardous waste dump includes trenches, pits, and soil vaults that would not even meet municipal garbage landfill regulations. DOE claimed in court documents that the 120,000 cubic meters of **buried** transuranic waste was not a part of the court ordered Settlement Agreement, and that only the 65,000 cubic meters of above ground **stored** waste is to be shipped out of Idaho. [iv]

Idaho is justifiably concerned because it is the buried waste that poses the immediate hazard to the Snake River Aquifer due to documented contaminate migration from the dump into the underlying groundwater.[v] Judge Lodge's March ruling in favor of Idaho states:

"The express language of the [Settlement] agreement, when taken as a whole, expressly requires that all transuranic waste be removed from INEEL. The parties specifically define transuranic waste without any limitation as to its location within INEEL nor any limitation to amount. Thus the Court is able to unequivocally state that in viewing the document in the light most favorable to the United States, the plain language of Paragraph B.1 [of the Settlement Agreement] clearly represents the parties intent at the time the agreement was drafted that the United States remove all transuranic waste located at INEEL."

Although, DOE is not publicly acknowledging the fact, its internal reports show the INEEL buried waste contains 11,000,000 curies [vi] of radioactivity including 1,455 kilograms of plutonium from Rocky Flats alone. [vii] The total **buried** plutonium contains 700,400 curies of radioactivity.[viii] The total stored and buried plutonium amounts to 1,174,000 curies (473,600 + 700,400). The buried waste alone represents potentially 17 times more radioactivity than the **stored** waste DOE is willing to ship out of Idaho.

DOE's Rocky Flats Plant conducted a mass balance inventory of plutonium and determined that 1,191.8 kg of plutonium was "unaccounted" for. Part of this shortfall was attributed to an estimated 300 kg in the ductwork and gloveboxes, and the remaining 891 kg shortfall was shipped to INEEL for disposal and was not included in the shipping manifests. Limits of 267 grams of plutonium-239 that could be disposed in the same container were regularly exceeded. [ix] The numerous fires at Rocky Flats and the resulting cleanup operations that shipped the decontamination waste to INEEL added to the accounting errors. Therefore, the total Rocky Flats plutonium dumped in the Subsurface Disposal Area could be as much as 2,346 kg (1,455 + 891).

For more information see EDI's website
http://personalpages.tds.net/~edinst

New Nuclear Bomb Testing Slated for Nevada

Carl Hulse and James Dao reported in the *New York Times* 5/27/03 that the U.S. shift on nuclear arms stirs concern and that critics are not reassured by smaller weapon designs.

"New authority from Congress gives the Bush administration the flexibility it says it needs to embark on a new nuclear weapons regimen, but Democrats say they fear the move could set off another nuclear arms race. Measures approved by the [Republican] House and Senate in late May will relax a 10-year-old ban on research into smaller nuclear weapons, cut the lead time for initiating underground tests and pay for study of converting existing nuclear weapons for penetration of underground bunkers.

"Administration officials say that the United States must consider retrofitting its Cold War-era atomic arsenal for the 21st century, and that existing restrictions on research have been 'chilling' potential progress in the field of nuclear weaponry. It is unrealistic to think we are going to go ahead and even test but not use these nuclear weapons, particularly with the expressions and statements that have been made by the administration,' said Senator Edward Kennedy, Democrat of Massachusetts. Kennedy and his allies, who were unable to block the nuclear proposals in a series of votes, last week, say the push for new nuclear capacity is reckless and ill-conceived, given the White House demand that other nations disavow nuclear force. Senator Dianne Feinstein, Democrat of California, called the juxtaposition 'diabolical' in a floor speech."

Democrats and arms control advocates dispute the administration's arguments. They contend that conventional weapons can be modified to destroy deeply buried targets as effectively as nuclear weapons. They say that even low-yield nuclear weapons will release large amounts of radioactive debris. And they argue that any moves by the United States to develop new nuclear weapons will encourage similar behavior in other countries.

William White writes in the (7/20/03) *Salt Lake Tribune* that "Utahans downwind of the Nevada Test Site should be concerned with the Bush administration's plan to research and test the next generation of "bunker-busting" and other small-yield nuclear weapons. Their rationale for reopening Pandora's box is: 1) the deterrence of adversaries who have built bunkers in tunnels hundreds of feet deep, and 2) the vaporization or neutralization of chemical or biological weapons by 5-kiloton or less nuclear explosives.

"Unfortunately, like their rationale for getting us into the quagmire in Iraq, the evidence is fatally flawed. The maximum estimated penetration depth of a free-falling bomb is 12 meters, yet a nuclear device of 1 kiloton would have to penetrate 167 meters in order for the radioactive fallout to be contained. Further, in order to eliminate chemical or biological weapons the bomb would have to hit with pinpoint accuracy; otherwise the agents would be dispersed along with the radioactive fallout. Finally, the administration's 'deterrence' has North Korea, possibly Iran and again Russia developing their own nuclear weapons. As Rep. Ed Markey, D-Mass., has said, 'It's like those who would teach temperance from a barstool.' Downwinders should be concerned as President Bush will, in essence, be testing nuclear weapons on us."

Mary Dickson reports in the *Salt Lake Tribune* that "I carry a credit-card-sized map in my wallet. It's from Richard Miller's book, *Under the Cloud: The Decades of Nuclear Testing* and it shows where fallout from the 12 years of above-ground atomic testing in the 1950s and 1960s went. Utah and Nevada are almost completely blacked out, but the black ink spreads as far north as New York and Canada, with heavy pockets scattered throughout the country including Idaho.

"I carry that map as a reminder, not so much to myself, but as a way of bearing witness. I don't need any reminders of what fallout did to people living in those areas of black on Miller's map. In the spring before my 30th birthday, I was diagnosed with thyroid cancer, the most common cancer in those exposed to fallout as children. They cut out my thyroid and the lymph nodes around it, and then gave me a radioactive cocktail to destroy what cells were left. In the following years, tumors necessitated a hysterectomy.

"Another 125 nuclear blasts were conducted above ground at the Nevada Test Site. When atmospheric testing was banned in 1963, tests moved underground, continuing until 1993. Miller writes that there's really no such thing as a "totally underground test" since so many of them leaked, including the notorious 1970 Baneberry shot, which spewed radioactive debris 8,000 feet into the skies.

"It's impossible to prove how many cancers or other illnesses across this country may be linked to fallout. The National Academies of Science said last February that detailed studies of cancer risk in Downwinders are unnecessary. It's not in the government's interest to know how many victims it has created. Declassified documents show that our government knew the facts -- about fallout, about contaminated milk, about the susceptibility of children -- and that it lied to us. We were the expendable victims of the Cold War.

"If the Bush administration continues on its course, we very well could see another round of underground

testing at the Nevada Test Site, along with the hollow assurances that testing is safe and that it is necessary for national security.

"Have we learned nothing from our past? As a Downwinders, I have earned the right to be outraged at this administration's callous abandonment of the hard-won ban on nuclear testing. I am even more dismayed that Utah's Sens. Bob Bennett and Orrin Hatch and Rep. Chris Cannon, all of whom have battled for more research and compensation for Downwinders, voted last month to pave the way for nuclear testing as part of the massive defense funding bill. Our congressional delegation betrayed us when they agreed, as part of that bill, to lift the test ban on low-yield nuclear weapons and allow research into new ground-penetrating "bunker buster" nuclear weapons, weapons intended solely for first use against non-nuclear nations and terrorist groups. Only Rep. Jim Matheson voted for a failed amendment that would have prevented a resumption of testing.

"The testing plan is an unconscionable and hypocritical step backwards that gives other nuclear nations an excuse to ignore test bans, or worse, to employ first-use weapons. Additionally, the bunker buster is of such high yield that testing it underground, if it comes to that, in effect would become an above-ground test.

"Once more, we become expendable in the name of 'national defense.' If we learned anything from being the unwitting subjects of the massive experiment of atomic testing, it is that we are all down-winders. How ironic that our government, under the pretext of securing our safety, is so willing to sacrifice it." Mary Dickson wrote *Downwinders All, and Learning to Glow.*

Hanford Lawsuit Says Radioactive Emissions Higher than Government Claims

Karen Doran Steele - Staff writer for the *Spokesman Review* reported (6/5/03) in an article that: "A federal judge newly assigned to the Hanford radiation exposure case has made public a scientific expert's report kept under seal for nine years. In an order filed Tuesday, U.S. District Judge Frem Nielsen unsealed the report by Thomas Pigford, a nationally prominent nuclear engineer chosen as a neutral scientific expert for the case. The report says a $27 million, taxpayer-funded study of past radiation releases from the Hanford Nuclear Reservation is flawed and may underestimate radiation doses to Hanford Downwinders. It also says the Hanford Environmental Dose Reconstruction study didn't address the health risks from billions of radioactively "hot" particles from Hanford plants to people living in Washington, Idaho and Oregon during the 1940s and '50s. This year, McDonald recused himself from the Hanford case after failing to disclose his ownership in an orchard near Hanford that he swore was radiation-free.

Nielsen took over the case in April. At a status conference last month, he asked lawyers for both sides whether there was any reason to keep the Pigford report under seal. Nobody had an objection to unsealing it. In this week's orders, Nielsen consolidated three related Hanford cases with 6,000 plaintiffs and established a road map for the litigation. He also set a tentative trial date in March 2005. The Hanford case was filed in 1991 in the Eastern District of Washington, shortly after the U.S. Department of Energy admitted that Hanford's Cold War radiation releases could have harmed people living downwind. Last June, the 9th U.S. Circuit Court of Appeals reversed a 1998 ruling by McDonald that rejected the claims of most of the plaintiffs -- remanding the case for trial."

Allen Benson, PhD. (technical scientific consultant on the Hanford Downwinders suit) agrees that the radioactive particle emissions from Hanford must be included with the iodine-131 emissions to accurately estimate the impact on the down-wind populations. The Thomas Pigford report, commissioned by US Federal Court as an independent analysis has considerable credibility according to Benson. The Lewiston, Idaho area also according to Benson got a significant dose that was further substantiated by J.W. Goffman, Ph.D. in his studies of DOE and other commercial nuclear operations, due to the air currents that flowed up the Columbia River drainage canyons. Benson adds that: "if the court ever releases my report, it will blow the socks off of all the government claims on Hanford radioactive releases."

The public's concern is that this crucial information in federal court records is currently bound up in the litigation process, and if the government "settles" the suit and "seals" all the reports filed in the suit, we may never know the truth about what Hanford/DOE did to us as down-winders.

Hanford Thyroid Disease Study Challenged

Few government reports have generated as much scientific and public outrage here in the northwest as the CDC's Hanford Thyroid Disease Study (HTDS). This ten year, $18 million study was intended to determine if there was an impact on the downwind population as a result of some 739,000 curies of radioactive iodine-131 released between 1945 and 1963 from reactor fuel reprocessing at Hanford. In subsequent weeks after CDC's press barrage that "showed no relationship between thyroid disease and exposures to radioactive Iodine-131 released from the Hanford site," independent researchers started to unravel CDC findings.

CDC chose to ignore the January 18, 1999 National Research Councils' (NRC) negative peer review of the doses used in study noting that the Iodine-131 in the milk consumed by children that was based on highly misleading assumptions.

SENES Oak Ridge Inc Center for Risk Analysis showed that the doses used by the HTDS were understated by 400% in 1950, 300% for 1951, and 600% for 1952. [x]

It should be noted that many of these challenges to CDC's dose estimates were generated by the law firm Harrimann and Harrimann in preparation for the Hanford Downwinders class action litigation that is slated for trial this year. This is the first indication of the extent to the scientific war of numbers that will soon be fought in court. CDC is already running for cover before the judge has even raised his gavel.

As reported by Karen Dorn Steele of the *Spokesman Review*, critics contend that, "Top CDC officials and their Seattle researchers exaggerated the HTDS negative findings, buried contradictory data, and released it in 1999 in a way that caused maximum harm to Hanford Downwinders."

CDC eventually admitted that there are mistakes in the Iodine-131 dose estimates and that the doses will all have to be recalculated on the 3,441 individuals in the study. The HTDS researchers characterized the study cohort as containing a rough comparison between two groups. One group consisted of Columbia Basin counties closest to Hanford, and the other group consisted of Okanogan, Stevens, and Ferry counties further to the northeast of Hanford. Karen Dorn Steele notes that CDC's hypothesis was that the Columbia Basin counties closest to Hanford had higher Hanford-related radiation doses than the northern counties. Tim Connor (former head of a CDC advisory committee) said, "The problem is, these were all exposed people."

Only a glance is required of the dispersion maps that show where the radiation went after leaving the Hanford stacks, to see that CDC deliberately chose counties all along the plume trajectory, and yet called them unexposed.

Another major problem that the HTDS failed to account for is the high numbers of sick and dead people as well as the elevated levels of thyroid disease. According to Steele, "Some 525 of the 5,991 people originally sought out for the study were dead - 20 percent higher than normal for a group of middle-aged people in Washington state."

In a letter transmitted to CDC just 10 days before the HTDS was released, the National Research Council Committee on the Assessment of CDC's Radiation Studies, raised and emphasized problems with the uncertainties of individual doses calculated with the Hanford Environmental Dose Reconstruction methods used in conjunction with the HTDS study. '[I]t should be noted,' the Committee reported, 'that the inherent uncertainty associated with the individual doses will decrease the likelihood of determining a meaningful risk coefficient for the effects of radioiodine on the target population.'"

The joint letter says that, "It is appalling that CDC would go forward with the release of the HTDS under such circumstances, and so quickly after its NRC review committee had identified such major problems."

"Unfortunately, it will be extremely difficult to repair the harm done to CDC's credibility as a result of this fiasco. It is simply hard to imagine that any community in America, concerned about environmental exposures to pollutants and subsequent health outcomes, would welcome CDC to come in and conduct, sponsor, or otherwise oversee an epidemiologic study. We are deeply troubled by this," the joint letter to Jackson finally concludes.

Craig Pushes Funding for New INEEL Reactor

U.S. Senator Larry Craig, R-Idaho, continues to work toward his hope for the construction of a new-generation nuclear reactor at the Idaho National Engineering and Environmental Laboratory.

Craig has positioned Idaho at the forefront of America's nuclear research effort by successfully including $20 million for the design of a Generation IV reactor, the new standard in nuclear reactors, in the 2004 Energy Bill. The money, assuming it stays in the bill and that it passes through Congress and earns President Bush's signature, will be

a huge boon to the eastern Idaho nuclear research site. It will ensure the long-term survival of the site beyond the prescribed cleanup.

Craig also hopes the new reactor will demonstrate a new benefit to nuclear technology. The reactor currently slated for the site would produce electricity, as well as hydrogen fuel that could one day power automobiles, generators, and other devices that presently use fossil fuels like oil and coal. Hydrogen is a clean burning fuel that leaves water behind as its only emission. Current technology requires hydrogen be created by stripping atoms from a natural gas molecule, and the nation is dealing with a natural gas shortage these days.

This new reactor could potentially be the hydrogen production operation for the revived Space Nuclear Thermal Propulsion Rocket that the government has been trying to build at INEEL for the last decade. This rocket uses hydrogen as a coolant/propellant because it is lighter than air; therefore, easier to launch into space. Hydrogen is also explosive, which makes ground testing extremely hazardous if it malfunctions. The Air Force released a declassified environmental impact statement in 1993 for the project. After wide spread public opposition the project code named "Timberwind" faded back into secrecy until recently.

A similar INEEL project called the Aircraft Nuclear Propulsion program in the 1960's spewed out over 4.6 million curies of radiation into Idaho's air before President Kennedy canceled the operation. [xi]

Endnotes

i. Idaho Department of Environmental Quality Public Notice issued March 15, 2002 with a comment period ending April 15, 2002. RCRA closure permit was subsequently issued at the close of the comment period. See IDEQ Docket # 10HW-0204 Public Notice dated 3/15/02. Phone conversation with IDEQ Mike Spomer (7/23/03) indicate that the INTEC high-level waste tanks are currently under an "interim status" category and therefore are not required to get a RCRA closure permit, only an approved "closure plan" that is yet to be released to the public. This regulatory obfuscation prevents public comment and review.

ii. Environmental Defense Institute submitted petition to the Idaho Department of Environmental Quality related to closure of the INEEL high-level waste tanks on, April 18, 2002; May 28, 2002; and July 11, 2003. See EDI's website for the text of these petitions.

iii. United States General Accounting Office, Testimony Before the Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, House of Representatives. GAO-03-930T.

iv.Advanced Mixed Waste Treatment Plant, Final Environmental Impact Statement, January 1999, page 1-4.

v. Aquifer at Risk, Environmental Defense Institute, June 2003.

vi. A Comprehensive Inventory of Radiological and Non-radiological Contaminates in the Waste Buried in the Subsurface Disposal Area of the INEL RWMC During the Years 1952-1983, Volume 1, Idaho National Engineering Laboratory, EG&G Idaho, Inc., June 1994, page 6-25, herein after referred to as EGG-WM-10903.

vii. EGG-WM-10903, page 2-76 and C-5 Table C-1. This estimate is ONLY plutonium shipped from Rocky Flats to INEEL's Subsurface Disposal Area between 1952 and 1983. Therefore the total quantity of plutonium from all sources is significantly more than the 1,455 kg. Internal Rocky Flats report estimates an additional 800 kg of unaccounted plutonium was shipped to INEEL SDA that was not recorded in shipping manifests.

viii. EGG-WM-10903, page xxix, Table S-2.

ix. A History of the Radioactive Waste Management Complex at INEL, September 1979, EG&G Idaho, PR-W-79-038, page 30

x. Evaluation of the HEDR Source Term and HTDS Power Calculations, F. Owen Hoffman, SEENS Oak Ridge, Inc., Centers for Risk Analysis, March 1999.

xi. Citizens Guide to INEEL, Environmental Defense Institute, 1998, page 23.