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DOE Plans to Operate the Advanced Test Reactor for 71 Years

A recently released Department of Energy report lays out plans for extending the operating life of the Advanced Test Reactor (ATR) at the Idaho National Laboratory (INL). This report states: "The ATR was designed in the late 1950s and started full power operations with inpile [sic] experiments in 1969 and is now being evaluated for extending its role in materials testing through the year 2040. …This extended operation will result in a 71-year operating lifetime for the ATR. It is unlikely that, at the time of the original design, the design lifetime was evaluated for this length of service. … However, as noted in the February 2004 special review, budgetary shortfalls over the previous ten years have resulted in the necessary maintenance, upgrades, and infrastructure being threatened." [1]

This is the functional equivalent to buying an airline ticket to Hawaii and finding out the plane is a Korean War vintage DC-2 that has no independent Federal Aviation Administration inspection certification, "necessary maintenance and upgrades" due to company "budgetary shortfalls." The crucial difference here is the 30 Hawaii ticket-holders can refuse to board the plane, however, Department of Energy (DOE) does not offer that choice to the hundreds of thousands of residents living downwind of the antiquated Advanced Test Reactor (ATR) that is an accident waiting to happen.

The forty-year-old ATR poses an immediate threat to populations living in southeastern Idaho, western Wyoming and northeastern Utah because radiation released during a major accident would be nearly half that released from Chernobyl. This imminent (but preventable) threat warrants investigation by state and federal regulatory agencies. Failure of the ATR decrepit safety systems could result in a hydrogen or steam explosion which would spread 175 million curies of radiation to the environment. [2] This is an amount of radiation in the league of the Chernobyl release which contaminated thousands of square miles and spread a cloud of radiation around the earth.

This new ATR life extension plan would not pass any independent Nuclear Regulatory Commission regulatory analysis because of the current materials knowledge base on the "aging effect" of radiation on reactor system components that limited the original ATR design-life to 20 years which should have ended for the ATR in 1989. Even the Congressionally mandated Defense Nuclear Facility Safety Board has been blocked from inspections since 1994 presumably because DOE did not like the negative DNFSB reports on the ATR.

DOE reports gained through the Freedom of Information Act, for instance state: "The M-85 [primary coolant system] PCS heat exchanger developed a leak in the shell side. The leak was repaired, but further investigation utilizing non-destructive examination indicated pitting corrosion occurring in all the PSC heat exchangers…**The ATR PCS/Secondary Coolant System (SCS) heat exchangers are operating beyond 200% of their 20-year design life.**" [3] Leaks in the heat exchangers go to the cooling towers for evaporation directly to the atmosphere. The ATR cooling towers are not continuously monitored for radioactive emissions.

In 2003 INTEC (where ATR liquid waste is processed) atmospheric emissions were 6,020 curies and Reactor Technology Center (RTC), where ATR is located were 1,180 curies. [4] In 2000, the RTC/ATR main stack released 1,802.69 curies. Included are 0.39 curies of iodines; 2.3 curies of mixed

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[1] Advanced Test Reactor Life Extension Program Plan, Battelle Energy Alliance (BEA), March 2006, USDOE, page 13 &1 , hereinafter referred to as LEPP.

[2] Final Programmatic Environmental Impact Statement for Accomplishing Extended Civilian Nuclear Energy Research and Development and Isotope Production Missions in the United States, Including the Role of the Fast Flux Test Facility, December 2000, DOE/EIA-0310, Section I.1.1.1.2.

[3] Facility Certification Report No. 29, for Advanced Test Reactor, 4/7/05, Page 26, USDOE. FOIA Doc. # 50.

[4] DOE/Environmental Impact Statement-0373D page 3-26

fission products.[5] This represents a huge amount of radioactive emission to the atmosphere. Radionuclides are so biologically hazardous that EPA regulatory limits are listed in pico-curies or one trillionth of one curie. These high emissions from RTC/ATR suggest liquid waste (from leaking heat exchangers) is first sent to the ATR cooling towers w/o treatment and the precipitates are then pumped to INTEC un-permitted liquid waste evaporators and/or the waste percolation ponds.

The ATR basic safety reports are not even maintained. DOE's report states: "**As noted … a complete baseline of controlled design basis and supporting design information documentation does not specifically exist for the ATR."** [6] DOE further states: "Design codes and standards have evolved significantly during the life of the [ATR] plant. Efforts over the years to demonstrate facility safety by comparison to modern design codes and standards have resulted in a **partial application** of new codes and standards to applicable portion of the ATR facility, based on independent cost/value determinations made on a case-by-case basis. This **partial application updated codes and standards**, combined with the long operating history and obscure documentation for the basis of some of the rationale for applying updated standards, has resulted in confusing design documentation that is difficult to utilize or apply. In consequence, the established baseline of facility design documentation require special experience and perseverance to use." [7] [emphasis added]

"Partial application of codes and standards"??? This is a clear acknowledgement of violation of DOE's own internal regulations and statutory requirement to meet Nuclear Regulatory Commission Guidance as well as other applicable statutes and regulations (Resource Conservation Recovery Act, Clean Air Act, Clean Water Act).[8]

Backlogs in Maintenance Don't Express the Real Squeeze on Engineering Support and Money for Maintaining the ATR. According to Dave Richardson ATR Operations Manager, "**ATR has about 75 man-years of maintenance backlog without design basis reconstitution [facility construction upgrading].**" As of 3/05 ATR contractor (BEA) was still negotiating with DOE for "…funding for the seismic **evaluation** at the ATR of $2M." [9] The backlog of ATR system upgrades, called Engineering Change Forms (ECF) increased dramatically in "2005 to 91 ECF that either directly or indirectly support the operation of the ATR." [10] There are no apparent cost estimates on how much these existing upgrades or near future upgrades to the ATR will cost. Even a pedestrian cost-benefit analysis would conclude the ATR is not worth any additional investment and should be shutdown.

A more recent (3/06) DOE report states: "The total backlog of work is normally presented in man-hours of work. For July [2005] **the ATR deferred maintenance and engineering backlog totaled almost 115,000 resource-hours** at an average hourly rate of [redacted] for craft personnel and approximately [redacted] per hour burdened for engineering, this translates into approximately $5 million in work that must be completed ($2.5 million for deferred maintenance and $2.4 million for engineering) for the overall work backlog to be reduced to the level that engineering and maintenance organizations can routinely maintain." [11] [emphasis added]

This is an apparent violation of DOE Management Control Procedure that states; "When modifications are performed or the facility mission is extended or changed, additional detail to support the justification for the design adequacy will be required." [12] DOE has known about these violations of its own regulations for over a decade, yet no substantive physical ATR upgrades to safety systems has occurred.

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[5] DOE/Environmental Impact Statement-0287 pg.4-30

[6] LEPP pg. 16

[7] LEPP pg. 15.

[8] DOE Order 5480.23 and 10 CFR 830 and US Nuclear Regulatory Commission Guidance 1.60 and 1.70.

[9] Meeting on Safety of Reactor and Nuclear Facility Operations, March 1-3 2005, National Institute of Standards and Technology, Summary Report, http://www.ornl.gov/nuclear operations/2005-03-01/.

[10] Facility Certification Report No. 29 for the ATR, 4/7/05, page 29. FOIA Doc. # 50.

[11] Advanced Test Reactor Life Extension Program Plan, BEA, March 2006, USDOE

[12] DOE Standard, Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23 Nuclear Safety Analysis Reports, DOE-STD-1027-92, page 11; also see DOE Management Control Procedure (MCP-3480) Environmental Instructions for Facilities, Procedures, Materials and Equipment (Appendix F) "Routine Maintenance Activities" as well as DOE-STD-1027-92 Facility's Stage in its Life-Cycle.

One of the most revealing and crucial issues related to the ATR, is that DOE currently has no legal way to dispose of the past and current waste generated by the reactor. For instance, DOE has no foreseeable means of disposing of the beryllium blocks in the reactor core used to reflect neutrons back into the core. "The uranium impurity when irradiated resulted in classification of the beryllium blocks as transuranic (TRU) waste, when they are removed from the core. … Currently, there is no identified path for disposal for this TRU waste which is not allowed to be disposed in the [INL] Radioactive Waste Management Complex - Subsurface Disposal Area shallow dump. Contact-handled TRU waste that is 'defense related' is permitted to be disposed at the Waste Isolation Pilot Plant (WIPP). However, the WIPPP Land Withdrawal Act limits the total radioactive inventory for all isotopes to 5.1 MCI [5.1 million curies]. The ATR reflector components would consume almost two-thirds [3.4 MCi] of the total TRU inventory allowable within WIPP, which is currently not acceptable. The ATR would also be required to submit a justification for meeting the 'defense-related' definition for approval by DOE. Finally, there is no shipping cask currently available due to the high gamma radiation levels from cobalt-60. Approximately 30 years is necessary for cobalt-60 to decay to levels acceptable to ship in the 72-B cask, and by that time, it is estimated that WIPP will be full and closed to additional shipments. The final potential disposal facility considered is Yucca Mountain. That facility's waste acceptance criteria only provides acceptance of spent nuclear fuel and high-level waste. The beryllium components do not meet either definition.

"At this time, 20 beryllium reflector blocks and 55 [outer shim control cylinder] OSCCs from previous [core internals change-out] CIC (including the most recent in 2005) are being stored in the east canal deep well section. … Even though storage capacity exists based on current schedule to 2040, special approval was required from DOE Headquarters to remove the most recent beryllium blocks and OSCCs from the reactor as 'newly generated waste' with no path forward for disposal. This approval was limited to the beryllium waste generated during the recent CIC and does not apply to beryllium to removed in future CICs. Removal of blocks during future CIC may result in additional National Environmental Policy Act (NEPA) actions such as preparation of an environmental impact statement.

"In addition, the remaining storage capacity in the ATR canal may become limited quicker if the anticipated new gas test loop is installed, as this is expected to burn more fuel and expend the reflector core faster than is currently utilized." [13] Beryllium is a RCRA listed hazardous waste. [14] ATR's beryllium waste is then appropriately characterized as a mixed hazardous/ TRU radioactive waste. Storing the above mixed TRU beryllium waste in the ATR canal conflicts with Settlement Agreement with the State of Idaho discussed below. Storage beyond 90 days also violated RCRA.

"Along with beryllium blocks, other waste from past [core internals change-out] CICs stored in the ATR canal does not have a clear path for disposal. For example, these items include cut fuel end boxes and in-core sections of inpile tubes from past CICs. As mentioned in the previous section, material profiles for this type of waste remote-handled low-level waste need to be developed and evaluated by possible disposal entities. … If future CICs occur on a more frequent basis, canal storage capacity will decline more rapidly." [15] "The [INL] Subsurface Disposal Area (SDA) of the Radioactive Waste Management Complex, used for low-level waste (LLW) disposal, is scheduled for closure in 2009. This disposal area is the predominate disposal site for ATR LLW. Accelerated Idaho Cleanup Project (ICP) DD&D activities will generate significant quantities of LLW that may consume the remaining disposal capacity sooner than previously expected, leaving ATR with no disposal facility for its LLW."

"Currently, the ATR has a LLW storage capacity for 398 cubic meters (11 cargo containers). Waste is collected weekly from the ATR and placed in cargo containers. Weekly collections are essential to **control fire loading issues** with shipment of one cargo container every 6-8 weeks as typical. Storage capacity would be quickly met if no disposal capacity is available elsewhere. New storage areas would have to be established with appropriate safety documentation for excess waste storage." [16] [emphasis added]

"One cargo container (~36 cubic meters) every 6-8 weeks = ~326 cubic meters per year ATR

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[13] LEPP pg. 20
[14] EPA hazardous Waste Code Number P015 (40 CFR 268.40).
[15] LEPP pg. 21.
[16] LEPP pg. 19

LLW dumped at the RWMC. The above statement "**control fire loading issues**" suggests these wastes are RCRA mixed hazardous/radioactive waste in the category of "Ignitable Characteristic Wastes" [17] Over the years, the RWMC has had numerous spontaneous fires from wastes dumped in the landfill.

In an effort to reduce spent nuclear fuel (SNF) storage volume, DOE systematically cuts off the non-fissile top and bottom ("fuel end boxes") of the fuel elements. The "in-core sections of inpile tubes" are part of the reactor core components and equally highly radioactive. This remote-handled waste, as part of the SNF element and reactor core components are extremely radioactive and both should be appropriately classified as "Class C" or "Greater-than-Class C" Low-level Waste.

Nuclear Regulatory Commission regulations state: "Such [waste] must be disposed of in a geologic repository as defined in part 60 of this chapter unless proposals for disposal of such waste in a disposal site licensed pursuant to this part are approved by the [NRC] Commission." [18] Past and current dumping of this ATR Class C and/or Greater-than-Class C waste in the shallow burial RWMC SDA dump site would be a violation NRC regulations if it were an NRC licensed disposal site.

The INL SDA dump is currently undergoing Superfund cleanup where buried waste is being exhumed and shipped off-site. It's an outrage that DOE is at the same time illegally dumping more waste in the SDA. The fact that DOE admits above that there is no path forward for ATR Low Level Waste (LLW) is a clear indication that this is Class-C and/or Greater-than-Class-C LLW requiring a deep geologic disposal/ repository, and that none exist off-site, because numerous NRC licensed LLW dumps are currently available for Class A and Class B-LLW. The SDA would be in violation of Executive Order 11988 and NRC's Disposal site suitability requirements for land disposal that state in relevant part: "The disposal site must be generally well drained and free of areas of flooding or frequent ponding. Waste disposal shall not take place in a 100-year flood plain, coastal high-hazard area or wetland, as defined in Executive Order 11988, ``Floodplain Management Guidelines." [19] The SDA lies in a regional depression some 40 feet below the nearby Big Lost River, and has flooded many times in the recent past. [20]

"**The 1995 Settlement Agreement** between DOE, the U.S. Navy, and the State of Idaho requires that underwater storage basins be emptied and wet storage of SNF be discontinued after 2023, For purposes of the settlement agreement, the ATR canal is not considered a 'spent nuclear fuel storage basin.' The settlement agreement also requires that all SNF be shipped out of the State of Idaho (presumably to a federal repository) by 2035." [21]

There is no apparent exception in the Settlement Agreement exempting the ATR Canal SNF and TRU waste inventory, and the State of Idaho would take issue with any DOE claim otherwise. Given that there is no "federal repository" for SNF and/or other high-level waste and Special Nuclear Material [22] that DOE now considers waste, there is no path forward for ATR SNF, MTRU, and Class-C and >Class-C LLW waste. This is also an apparent violation of DOE regulations and possibly RCRA prohibiting "newly generated waste" with no disposal path forward.

DOE Cleanup Plan at INL INTEC is Flawed

Department of Energy's (DOE) recent mailings to the public describing Idaho National Laboratory (INL) Idaho Nuclear Technology and Environmental Center (INTEC) cleanup plans are attractive from a public relations perspective, however, they lack basic crucial information the public needs in order to make an informed decision about the adequacy of the program's various cleanup alternatives. [23] This persistent and deliberate trivialization of waste characterization leads the public to believe that there is no major problem - nothing to worry about.

DOE's deficiencies of full disclosure are rampant in DOE's June and August 2006 public mailing

[17] EPA hazardous "Ignitable Characteristic Wastes" Waste Code D001 [40 CFR 268.40].
[18] 10 CFR 61.55 and 61.56
[19] 10 CFR 61.50 (a)(5)
[20] Environmental Defense Institute, "Aquifer at Risk" report. http://environmental-defense-institute.org
[21] LEPP pg 22.
[22] LEPP pg 23
[23] Proposed Plan for Tank Farm Soil and Groundwater at the Idaho Nuclear Technology and Engineering Center Operable unit 3-14, August 2006.

describing the cleanup plan for the INL high-level waste tank farm soils and groundwater located at the INTEC. DOE, Environmental Protection Agency, Idaho Department of Environmental Quality are complicitus in this misinformation because they ALL approved of this mailing. For instance, the public mailing only states that "strontium-90 contamination exceeds the Idaho groundwater quality standard" but fails to say how much it exceeds that standard, or when DOE claims CPP-15 only "released kerosene and condensate" but failed to state that the estimated 120 gallon release contaminated soils at 778,000 pico-curies per gram. [24]

Environmental Defense Institute (EDI) review of DOE's Administrative Record documentation shows the total source term release of mixed hazardous and radioactive contaminates from major leaks in the INTEC tank farm states: 37,324.56 curies from more than 22,990 gallons of leaks. [25] This is an enormous amount of contamination that eventually will end up in the Idaho's sole source Snake River Aquifer under INL. Additionally, DOE public mailings fails to disclose the maximum soil contaminate levels and the crucial depth listed below. [26]

INTEC Soil Sampling Summary (pico-curies per gram)

Maximum Contaminate Level	Cesium-137 pCi/g	Strontium-90 pCi/g	Plutonium-238 pCi/g	Plutonium-239/240 pCi/g	Europium-154 pCi/g	Amercium-241 pCi/g
	8,990,000	20,700,000	41,800	23,600	9,620	8,970
Depth in feet	18-20	22-24	18-20	34-36	18-20	18-20

[pico-curies, a unit of radiation measurement (one-trillionth of one curie) is used in EPA regulations because radiation exposure is so biologically hazardous to humans]

INTEC High-level Waste Tank Contribution to Soil Contamination Hazard

At INL, the primary facility for reprocessing irradiated nuclear reactor fuel is the INTEC formerly known as the Idaho Chemical Processing Plant (ICPP), although some reprocessing is ongoing at the Materials and Fuels Complex, formerly called Argonne National Laboratory-West that now is merged with INL. The INTEC underground high-level Tank Farm, consisting of eleven 300,000-gallon tanks with a current volume of about 1.4 million gallons, [27] is only part of a large complex of an additional 127 high-level waste tanks that are part of the INTEC high-level waste operations. EDI has listed these 127 tanks, their location and what process they are attached too, however the waste volume of their sediment contents is uncertain. [28] Some of these tanks are a significant criticality hazard due to the high concentration of fissile (uranium and plutonium) material content of the tanks. [29]

If DOE's new attempt to obfuscate the legal requirements and allow **permanent in place "**disposal" in these already leaking waste tank units is not stopped, more pollution will migrate to the aquifer, further putting the general public at risk. [30] DOE's own reports show radioactive groundwater contamination under INTEC greater than 60,000 times, and at nearby Reactor Technology Center (RTC) formerly called the Test Reactor Area 176,000 times, the EPA-regulated maximum radionuclide concentration level for drinking water. [31] Citing the RTC contamination is germane because of their close proximity, overlap of contaminate plumes, and the fact that these contaminate sources must be considered collectively in making cleanup decisions that will impact the aquifer.

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[24] Cahn, L. S. et. al. 2006 , Operable Unit 3-14 Tank Farm Soil and Groundwater Remedial Investigation -Baseline Risk Assessment, DOE/NE-ID-11227, USDOE, Table 5-2, page 5-4, also page 5-51.. hereinafter referred to DOE/NE-ID-11227.

[25] DOE/NE-ID-11227, USDOE, Table 5-2, page 5-4

[26] DOE/NE-ID-11227, Table 5-7, page 5-12.

[27] Idaho High-Level Waste and Facilities Disposition Draft Environmental Impact Statement, December 1999, DOE/EIS-0287D, page C.9-10, herein after called HLW/EIS.

[28] Environmental Defense Institute Amicus Curiae Brief filed in federal court 8/2/02, Natural Resources Defense Council et al. vs. Department of Energy, Case No. 01-CV-413 (BLW).

[29] HLW/EIS, page 5-206.

[30] IEER, October 2001, page 54, citing Environmental Science Foundation, July 1997.

[31] INEEL Test Reactor Area Record of Decision, Perched Water Systems, December 1992, OU-2-12, page 14 - 16.

The hazard is intensified by the fact that the U.S. Geological Survey report shows that the top ground level of the INTEC high-level Tank Farm is within the Big Lost River 100-year flood plain, which means the bottom of the tanks are some 50 feet **below** the flood levels. [32] Flooding of these tanks and the related high-level waste soil contamination will flush pollutants into the aquifer and endanger the general public, since these radionuclides are toxic for tens of thousands of years.

Recent INL contractor reports show significant groundwater intrusion into INTEC below grade operations. This data (gained via FOIA requests) includes "sumps" that collect either leaks or other groundwater contributions to the waste accumulation outside of the "original" containment unit. These "sumps" are accumulating some 36,633 gallons per year. [33] This data (not publicly disclosed by DOE, EPA, or IDEQ) clearly indicates either serious leaks or an equally serious surface/groundwater contributor to INTEC contaminate dispersion into the underlying Snake River Aquifer.

1995 INTEC (ICPP) Well Sample Data [34] .

ICPP Well	Gross Alpha (pCi/l)	Gross Beta (pCi/l)	Strontium-90 (pCi/l)
CPP-55-06	7,290	191,000	65,600
MW-2	4,700	925,000	516,000
MW-5	520	211,000	110,000

[INEEL-95/0056@2-162] [INEEL-95/0056 @ 5-25]

2002 INTEC Perched Ground Water Sample Data [35]

Contaminate	Concentration pCi/L	Regulatory Std. pCi/L [36]	Number Times Over Standard
Gross Alpha	1,100	15	73.3
Gross Beta	590,000	4 millirem/yr	-*-
Tritium	40,400	20,000	2.02
Strontium-90	136,000	8	17,000
Plutonium-238	0.0501	7.02	< 1
Americium-241	0.0374	6.34	< 1
Iodine-129	3.0	1	3
Technetium-99	457	900	< 1
Uranium-233/234	15.3	13.8	1.02
Uranium-235/236	0.142	14.5	< 1
Uranium-238	6.94	14.6	< 1

* Beta particle/photon radioactivity shall not produce annual dose equivalent to the total body or internal organ greater than 4 millirem per year.

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[32] Preliminary Water-Surface Elevations and Boundary of the 100 Year Peak Flow in the Big Lost River at the Idaho National Engineering and Environmental Laboratory, Idaho, US Geological Survey, Water-Resources Investigations Report 98-4065, DOE/ID-22148

[33] Tripp, J.L. et al., INEEL Radioactive Liquid Waste Reduction Program, Presented to theWM'99 Conference, 2/29-3/4/99. http://www.wmsym.org/wm99/pqsta/43/43-6.pdf

[34] INEL-95/0056; Waste Area Group 3 Comprehensive Remedial Investigation/Feasibility Study Work Plan (final) Volume 1, August 1995, Lockheed Idaho Technologies Co.

[35] DOE/EIS-0287, page 4-52 and 4-57

[36] 40 CFR 140 and 141

DOE's Contaminate Modeling is Flawed

DOE's computer modeling of contaminate fate and transport is fundamentally and deliberately flawed. DOE's own internal report states "The modeling results indicated that actions on Tank Farm Soil alone will not meet Snake River Plane Aquifer Remedial Action Objectives." [37] INTEC is in the Big Lost River flood plane and has been flooded numerous times in the recent past. Flood waters travel horizontally in the alluvial soils at INTEC and will generate "recharge" to flush INTEC soil contamination into the perched zones and ultimately to the aquifer.

DOE additionally fails to disclose how much of the INTEC high-level waste tank sediments will be left in the tanks, what specific contaminate concentrations are in the sediments, and how ineffective the "grouting" of these sediments permanently in place. DOE's own studies show that the grout cannot mix with the tank sediments and therefore cannot provide a waste disposal medium that meets regulatory compliance.

Again, DOE fails to offer comprehensive INL site-wide groundwater contaminates levels, overlapping contaminate plumes at RTC/ATR, and the corresponding Maximum Concentration Level limits in EPA's standards. This data is crucial for the public to fully understand the severity of the problem and draw their own conclusions on the appropriate cleanup.

The DOE's own internal INL documents indicates comments by INL officials that show grouting cannot be appropriately accomplished because (1) the tanks sit on a sand bed; (2) grouting under the tanks will be necessary, but the grouting of the non-RCRA compliant concrete tank vault containment structures will float the tanks and bend and distort the tank bottoms so that the grouting may bend or break the wastes grouted inside the tanks so that the waste will not be immobilized; and (3) there will not be any homogenous mixture formed within the tanks between the grout and the wastes; (4) the side panels and side walls and floors of the vaults are contaminated with radioactive and mixed (RCRA) wastes; (5) Vessel Off-gas Systems (VOG) problems are avoided as “outside the scope of this study”; (6) nine out of eleven tanks do not meet seismic criteria. The DOE report shows that mixing of the grout and the tank sediments will not occur. The displacement grout will simply “roll over” the solids, leaving potential High-Level Waste, Transuranic, and/or Greater than Class C Low Level Waste at the tank bottoms which is not immobilized. Comments indicate that adequate hydraulic studies have not been performed.

One DOE official comment states “since the new grout in the vault will not travel under the tanks and nine of them sit on sand, will this be a problem when the regulators see it or should we say right now that the sand will be contained by the grout and the old floor and therefore any waste or leakage will be contained, or something similar to this?" Another DOE commenter states, “The grout will roll over the solids.” Another commenter states, “The grout will not encase the solids, they will sandwich them between the grout and the bottom of the tank. Underneath the tank is sand. Under the sand is the existing tank vault. The vault has been proven to leak from the infiltration of rainwater.” The clear indication of these comments is that Idaho will not be protected by grouting from the High Level Waste contained in the tanks.

Numerous comments address problems which exist respecting how to “wash down” the tanks, i.e., removal of solids from the tanks by the use of a “mixing pump”. No backup plan exists for solids removals from the tanks in case the mixing pump plan doesn’t work. The mixing pump will not likely be sufficient to remove a significant fraction of the potential solids. There is no backup for solids removal from the tanks in case the mixing pump plan doesn’t work. The mixing pump will not likely be sufficient to remove a significant fraction of the potential solids and the mixing pump design has not been established. One commenter states in part, “This clean/wash/rinse activity will have little or no effect on the chemical composition of the solids since they are insoluble even in 2-3 molar nitric acids. This activity may or may not physically move the solids inside the tank or remove them from the tank. This clean/wash/rinse activity may also have little effect on the liquid SBW [Sodium Bearing Waste] held interstitially by the solids depending on the turbulence involved.”

The lack of a mixing pump design comment is resolved by stating that “Establishing the actual agitation and mixing effectiveness is beyond the scope of this study.”DOE commenter state that doubles containment should be required by IDEQ. The existing concrete vaults do not qualify with the double containment required by Resource Conservation Recovery Act. [5]

[37] INTEC RI/FS, DOE/NE-ID-11227, page 4-1.

A reference in the document was deliberately deleted to avoid the problems about 30,000 gallon tanks which sit on a gravel bed. Any liquid that might accumulate on top of the grout is handled as "being beyond the scope of work for this study." None of the tanks initially passed a seismic analysis and analyses have not been performed. Corrosion rates may be well beyond design value for INTEC liquid waste storage tanks.

Comments in the document also disclose that the grout will not commingle/mix with the tank heels and therefore will not meet any of the EPA Land Disposal Regulations applicable to this waste even for deep geologic burial (i.e. Waste Isolation Pilot Project/Waste Acceptance Criteria).

The most egregious DOE action is trying to change the high-level tank waste classification to a lesser category it concocted called "incidental waste." The Natural Resources Defense Council together with tribal governments is currently litigating this arbitrary waste reclassification as a violation of Nuclear Waste Policy Act. This case has been the courts for a number of years and the outcome will affect how INL can proceed with closure of its high-level waste tanks.

Environmental Defense Institute Cleanup Recommendations

EDI recommends implementing a **MODIFICATION** of what DOE calls "Alternative 3a hot spot removal, capping, and monitoring that would be completed before interfering infrastructures are removed or while they are still in use." EDI believes that **ALL** INTEC contaminated soils must be removed (at minimum to the depth of the bottom of the high-level waste tanks) along with all the high-level waste tank service lines in conjunction with full cleanout of **ALL** of the tank sediments and vaults prior to grouting. Cleanup alternatives absolutely must be considered within the context of other INTEC and RTC contaminate sources that threaten the underlying aquifer and ultimately the public. DOE refuses to commit to these cleanup criteria so the public must demand that DOE implement a **NEW** credible cleanup of the INTEC that will minimize the ongoing contaminate migration into the Snake River Aquifer.

For more information on this issue see EDI's "Aquifer at Risk" report on our website. http://environmental-defense-institute.org For more information and filing comments to DOE see http://Idahocleanupproject.com and INL Administrative Record http://ar.inel.gov/

Atomic Veterans' Compensation Denied by Court Ruling

Michael Doyle reports 8/26/06 in *McClatchy Deseret News*, " Radiation exposure took Alice Broudy's husband a generation ago. This week, a court ruling sliced away at her bid for redress. In a quiet ruling that nonetheless resonates nationwide, a federal appellate court rejected efforts by Broudy and others seeking claims on behalf of "atomic veterans," exposed to radiation during nuclear tests and in post-war Japan. The same court simultaneously rejected bids by other veterans exposed to biological and chemical agents. Taken together, the dual rulings by the D.C. Circuit Court of Appeals will likely impede many veterans hoping for compensation. At the very least, it will complicate future claims.

"It's a significant ruling," Washington-based attorney David Cynamon, who represented veterans in both cases, said Friday. "Unfortunately, it's a significantly bad ruling."

A Department of Veterans Affairs spokesman couldn't be reached to comment. Broudy, a resident of California's Orange County, has long been seeking full compensation for the death of her husband, a Marine major who was repeatedly exposed to radiation. She has company.

George Woodward, who lives north of Wichita, Kan., in the town of Miltonvale, was exposed to radiation during a 1955 test blast. Kathy Jacobovitch, a resident of Vashon Island, Wash., lost her father through exposure to contaminated ships in Puget Sound. Ernest Kirchmann, a 62-year-old Navy veteran who lives south of Minneapolis in tiny West Concord, who's filed a separate lawsuit, was exposed during a 1964 nuclear submarine accident.

"It isn't just my personal case," Broudy said Friday. "It's the entire veterans community. It makes me so angry." Broudy married her husband, Charles, in 1948. Three years earlier, he'd walked the war-poisoned streets of Nagasaki. Within a decade, he was facing radiation in the Nevada desert. He died of lymphatic cancer in 1977. Though she has since received partial compensation, Broudy has been confronting the federal government for more. She has now lost three separate lawsuits.

"This closes the door," Cynamon said of the latest appellate court ruling, which was issued Wednesday. "It will make it very difficult, if not impossible, for individuals who are victimized by government cover-ups."

All told, an estimated 220,000 U.S. soldiers were allegedly exposed to radiation in the 1940s and 1950s. Some, such as William Yurdyga of Sacramento, Calif., claimed in an earlier lawsuit that they were exposed following the Hiroshima or Nagasaki atomic blast. Others claimed exposure during Cold War testing.

The three-member appellate panel wasn't ruling on whether the atomic veterans deserve compensation. A 1988 law provides that. To succeed, though, veterans must prove they were present at a radioactive site and that they contracted a radiation-related or were exposed to a cancer-causing radiation level. The three-member appellate panel wasn't ruling on whether the atomic veterans deserve compensation. Required military test records can be elusive. A 1973 fire destroyed many veterans' records, and veterans consider alternative "dose reconstruction" estimates inaccurate.

"You send a Freedom of Information Act request," Broudy said, "and you wait and you wait and you wait, and then maybe you get a piece of it, or you get nothing at all because they say it's classified."

The latest lawsuit sought to force Pentagon officials to release all relevant records. In the opinion written by Appellate Judge Thomas Griffith, appointed by President Bush last year, the court panel agreed unanimously that atomic veterans couldn't compel a massive release of all the Pentagon's relevant documents. Instead, individual veterans must file individual claims.

If the Pentagon is "covering up records of medical tests that describe the amount of radiation to which these veterans were exposed, FOIA (the Freedom of Information Act) provides a potential remedy," Griffith wrote.

A new study by Melinda Podgor for the Elder Law Journal found that 18,275 atomic veterans had filed for compensation as of October 2004. Only 1,875 claims were granted.

On a separate but related legal track, veterans such as Columbia, S.C., resident John Goricki and Homestead, Fla., resident Richard B. Holmes were pursuing claims following exposure during the Shipboard Hazard and Defense project of the 1950s and 1960s.

Project SHAD allegedly exposed up to 10,000 soldiers and sailors to biological and chemical agents. Like the atomic veterans, SHAD survivors claim that the Pentagon clings to secret information. Like the atomic veterans, they couldn't persuade the appellate court to order the release of all relevant documents. The veterans 'can still seek, through FOIA, the documents they believe they need to pursue their benefits claims,' the appellate panel ruled."

U.S. to Conduct Non-nuclear Experiment at Nevada Test Site

The *Associated Press* reported August 28, 2006 that "Government scientists were preparing Monday to conduct another in a series of underground non-nuclear experiments at the Nevada desert proving ground, the National Nuclear Security Administration said.

The so-called subcritical test, dubbed Unicorn, was being conducted at the Nevada Test Site by scientists from the government's Los Alamos National Laboratory in New Mexico, said Kevin Rohrer, a spokesman for the NNSA in North Las Vegas.

The planned test, scheduled Wednesday, would be the 23rd subcritical experiment since 1997 at the 1,375-square-mile federal reservation 85 miles northwest of Las Vegas. Subcritical tests involve the detonation of explosives around radioactive material in a vault deep underground at the Nevada Test Site. The explosions are designed not to reach critical mass necessary for a self-sustaining nuclear reaction.

Federal officials call subcritical experiments essential to maintaining the safety and reliability of the U.S. nuclear arsenal. Anti-nuclear groups criticize the experiments as contrary to the spirit of the 1996 Comprehensive Test Ban Treaty on nuclear arms. The U.S. has observed a moratorium on full-scale nuclear testing since 1992, but has not ratified the treaty. The test site hosted 928 full-scale nuclear tests involving 1,021 nuclear detonations from 1951 to 1992."