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New Nuclear Waste Dump Slated for INL

The Department of Energy (DOE) announced plans to construct a new highly radioactive remote-handled waste dump at the Idaho National Laboratory (INL). DOE released a final Environmental Assessment (EA) for the dump that EDI believes has significant deficiencies.

This short-cut EA and attached Finding of No Significant Impact is a violation of the National Environmental Policy Act (NEPA) that – if appropriately applied - would require a full Environmental Impact Statement (EIS) given the major potential environmental, health and safety impact of this proposal. Moreover, given DOE/INL gross mismanagement of existing nuclear waste disposal at the INL over the past six decades – resulting in extensive contamination of the underlying Snake River Aquifer, the public has no confidence that this new remote handled low-level landfill dump will not further impact their health and safety. [1] Thus, at the minimum, a full scale EIS must be conducted.

"DOE classifies some of the [low-level waste] LLW generated at the INL as remote-handled LL W because its potential radiation dose is high enough to require additional protection of workers using distance and shielding. Remote-handled wastes are those with radiation levels exceeding **200 millirem** per hour at the surface of a container, and includes debris, used materials (i.e., gloves, tools, hardware, and other activated metal components), ion-exchange resins, and filters." [2]

Specific Deficiencies of this Environmental Assessment (EA)

* No definitive statement that this new dump is a permanent waste disposal site;
* No detailed waste characterization (including curie content) of known waste streams slated for dump internment;
    1. Naval Reactor Facility (Naval Nuclear Propulsion Program) ;
    2. Advanced Test Reactor;
    3. Materials and Fuels Complex (MFC) (formally Argonne National Lab – West) to include the restart of the Transient Reactor Test Facility;
    4. Idaho Nuclear Engineering and Technology Complex (INTEC) formerly called Idaho Chemical Processing Plant (ICCP);
    5. Other specific INL operations to include RWMC non-compliant WIPP/ICDF waste;
    6. Other Non-INL waste shipped to INL (past/future);
* No cumulative radioactive/curie content of annual/final estimate waste dumped;
* Inadequate flood plain documentation;
  The proposed candidate dump(s) are above the Snake River Plain Aquifer and right beside to the Big Lost River;
* No disclosure of Greater than Class-C Low-level waste slated for the dump. According to Nuclear Regulatory Commission regulations, GTCC waste is prohibited from shallow landfill dumps and must be interred in a deep geologic repository; [3]

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[1] See EDI Snake River Plain Aquifer Report available at, www.environmental-defense-institute.org

[2] EA-1793, pg. 1

[3] Title 10 Code of Federal Regulations (CFR) Subsections 72.3 and 61.55

* No disclosure of credible onsite interim "road-ready" storage currently operating;
* No cumulative doses from all INL operations to the aquifer – the public has a right-to-know how much this new dump will add to existing INL contamination to the aquifer and general environment;
* No discussion of "Consent Order" compliance that all high-level , transuranic and alpha-emitting waste is to be shipped out of state for permanent disposal. [4]

The Environmental Protection Agency and the Idaho Department of Environmental Quality are complacent in this decade's long mismanagement of INL waste disposal because they failed to exercise their regulatory/legal oversight. These regulatory agencies with jurisdiction must demand a full EIS of the INL new dump and make their comments available to the public. Neither the Environmental Protection Agency, Nuclear Regulatory Commission, nor the Idaho Department of Environmental Quality bothered to even comment on the Greater-than-Class-C (GTCC) Waste EIS despite DOE's disclosed intent to construct a new GTCC and Transuranic waste dump at INL. Where is the "due-diligence?"

The EA states: "No other federal or state agencies were formally consulted during preparation of this Environmental Assessment." [5] DOE's Notice of Intent states: "In addition, DOE proposes to include DOE LLW and **transuranic waste** having characteristics similar to GTCC LLW and which may not have an identified path to disposal (herein referred to as GTCC-like waste) in the scope of this EIS." [emphasis added] [6]

DOE fails to disclose if this new dump is permanent. "At the end of the operational life [50 years] of the disposal facility, an engineered cover would be placed over the disposal vaults." [7] This sounds permanent by any reading.

The EA states: "Before DOE authorizes disposal of LLW under DOE Order 435.1, it must be demonstrated that the disposal facility will do the following:

"Before sited, designed, operated, maintained, and closed such that the total all-pathways exposure to the public is less than 25 mrem/year effective dose equivalent (EDE) from the facility and to less than 30 mrem/yr EDE for all potential sources of radionuclides.

"Limit the radionuclide concentrations for near surface disposal so that the potential exposure received by an inadvertent intruder (more than 100 years post-closure) would be limited to **100 mrem/year for acute exposure and 500 mrem total EDE for chronic exposure**." [emphasis added] [8]

"Dose to representative members of the public shall not exceed **25 mrem** (0.25 mSv) in a year total EDE from all exposure pathways, excluding the dose from radon and its progeny in air. Dose to representative members of the public via the air pathway shall not exceed **10 mrem** (0.10 mSv) in a year total EDE, excluding the dose from radon and its progeny." [9]

The EA also states: "The Idaho Ground Water Quality Rule (IDAPA 58.01.11) establishes minimum requirements for protection of groundwater quality through standards and an aquifer categorization process. These limits are typically specified as a maximum contaminant level

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[4] U.S. District Court for the District of Idaho, Settlement Agreement and Consent Order, Cv. No. 91-0035-S-EJL and 91-0054-S-EJL, 8/17/95; and Agreement to Implement U.S. District Court Order Dated 5/25/06, signed 7/1/08.
[5] EA-1793 pg. 6-1
[6] Federal Register / Vol. 72, No. 140, DOE Notice of Intent, 7/23/07.
[7] EA-1793, pg. 2-5
[8] EA-1793, pg. 2-1
[9] EA-1793, pg.5-1

(MCL). The MCL for beta-gamma-emitting radionuclides is the concentration that, assuming an ingestion rate of about one-half gallon of water per day for 365 days per year, the dose equivalent to the whole body or critical organ does not exceed **4.0 mrem/year**." [emphasis added] [10]

DOE fails to disclose all INL contaminate contributions to the underlying Snake River Plain Aquifer. The EA only discloses some contributors and ignores to RWMC. The EA states: "Assessing the cumulative impacts to groundwater requires consideration of other sources of contaminants that either exist in the aquifer currently or will enter the aquifer in the future. Locations of the sources include upgradient [sic] contaminants that could migrate through the aquifer volume potentially impacted by the remote-handled LLW disposal facility, nearby sources that could overlap the impacted region, and those sources downgradient [sic] that might be affected by the remote-handled LLW disposal facility. The potential for cumulative impacts to groundwater were analyzed for each candidate onsite location (INL 2011a)." [11]

Based on Environmental Defense Institute's Freedom of Information requests limited information, the below document previous waste streams at INL. Clearly, DOE/INL is failing to disclose detailed characterization (including radiation/curie content) of the nuclear waste slated for the new dump.

For instance, this EA does not disclose Materials and Fuels Complex (MFC's) underground transuranic/GTCC waste site Radioactive Scrap and Waste Facility (RSWF) which – according to previous DOE documents has 81 cubic meters of waste containing 9,823,000 curies of radioactive materials including 40.73 grams of plutonium. [12] The RSWF consists of a large array of vertical carbon steel pipes that contain the waste. The EA states: "In addition, DOE is continuing to remove and process for disposition remote-handled waste that was placed in storage at the Radioactive Waste and Scrap Facility at MFC between 1965 and 2007 (DOE 2009)." [13] DOE fails to disclose the current RSWF inventory/characterization slated for the new dump. Also the MFC's pyrophoric REB-II sodium coolant post-treatment residual waste is not disclosed.

INTEC's Integrated Waste Treatment Unit (IWTU) incinerator - currently operating to treat 900,000 gallons of high-level liquid waste remaining in the Tank Farm – post treatment waste destination is not disclosed. [14]

DOE fails to fully characterize Advanced Test Reactor (ATR) waste slated for the dump. The EA states: "At the ATR Complex, change-out of reactor core components generates remote-handled activated-metal approximately every 8 years. These components are stored in water-filled canals to allow radioactivity to decay." [15] This designated waste includes irradiated reactor fuel and irradiated experimental fuel units and "reactor core components."

"INL also provides infrastructure and research, development, and testing for other federal tenants and sponsors. Remote-handled LLW could be generated over the next 50 years from other INL support facilities and operations as part of ongoing activities (such as spent nuclear fuel management) or from potential new missions." [16]

"The alternative of interim storage involved storage of remote-handled LLW at either the

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[10] EA-1793, pg. 4-2
[11] EA-1793, pg. 4-13
[12] See DOE/INL document # ID-10054-81, page 19
[13] EA-1793 pg. 2-2
[14] Idaho Cleanup Project Progress Report 2009, CH2M-WG.
[15] EA-1793 pg.2-1
[16] EA-1793 pg. 2-2

generator facilities or another acceptable, safe location until disposal capability is available. The generator facilities have very limited storage capacity available and there are no plans to expand interim storage capability. No other facilities exist or are planned onsite that could accommodate the remote-handled LLW for interim storage. Even if storage were available, implementation of an alternative for storage instead of disposal does not provide for permanent disposal of remote-handled LLW generated at the INL site beyond 2017." [17]

The EA states: "The alternative of storage for decay considered storage of remote-handled LLW for sufficient time to enable its radioactive source term to decay to levels that would make it acceptable for disposal as contact-handled LLW. Storage for over 80 years would be required to provide time for the remote-handled LLW isotopes to decay to contact-handled LLW. Storage facilities do not exist to support this alternative. Even if storage were available, disposal capability for 80 to 130 years in the future is uncertain. In addition, an alternative for storage instead of disposal does not provide for permanent disposal of remote-handled LLW generated at the INL site beyond 2017." [18]

The above EA statements are grossly miss-leading because it fails to acknowledge existing onsite temporary "road-ready" storage of highly radioactive waste. The INL INTEC has for many years managed (Independent Spent Fuel Storage Instillation) – under NRC permit – heavily shielded dry casks filled with waste as interim-storage pending final geologic disposal facility availability.

"The Naval Nuclear Propulsion Program is a joint Navy and DOE organization responsible for all matters pertaining to U.S. nuclear-powered submarines and aircraft carriers. At the INL site, NRF supports the Naval Nuclear Propulsion Program by receiving, examining, and processing spent fuel assemblies as part of preparations for final disposition. Naval spent nuclear fuel is shipped by rail in shielded shipping containers from naval shipyards to NRF, where it is removed from the shipping containers and placed in water pools for examination. The assemblies are then prepared for dry storage prior to shipment for final disposition. The process for preparing spent fuel assemblies involves removing non-fuel structural components (activated metals), which are remote-handled LLW that require disposal. Filtration of water in the NRF pools as part of ongoing maintenance also generates spent ion-exchange resins that are remote-handled LLW." [19]

Additionally, the Naval Reactor Facility (NRF) continues to use its dry cask storage for highly radioactive waste and thus is obliged to continue storing its own waste until a permanent geologic repository is permitted. See below attached NRF pictures that document the Navy's existing extensive capacity to generate "road-ready" nuclear waste for interim storage. There is no credible/legitimate reason these and/or comparable interim storage facilities cannot be used for all INL nuclear remote-handled low-level waste.

In the interest of the public environmental health and safety, clearly, this highly radioactive remote-handled nuclear waste must be placed in INL on-site, above-ground interim road-ready temporary storage until a permanent geologic repository is established. This onsite interim storage at the generator site applies to commercial nuclear power waste.

Environmental Defense Institute's comprehensive comments on this new radioactive waste dump are available on EDI's website; http:www.environmental-defense-institute.org

[17] EA-1793 pg. 2-4
[18] DOE/EA-1793, page 2-5
[19] EA-1793 pg.2-2

Nuclear Regulatory Commission Agrees to Public Request to Review Dangerous Vents on US Fukushima-Style Reactors and Lack of Emergency Power for Cooling Waste Pools

Paul Gunter and Kevin Kamps co-directors of Beyond Nuclear report in Common Dreams 1/2/12; " A December 13, 2011 decision by a Nuclear Regulatory Commission (NRC) safety panel that accepts several key publicly requested actions regarding safety at US Fukushima-style reactors, is publicly noticed today in the Federal Register, (dated January 3, 2012.)

On April 13, 2011, one month after the Fukushima nuclear disaster began, Beyond Nuclear – later joined by 8,000 co-petitioners – formally submitted emergency action requests to an NRC safety review panel regarding safety concerns at the 23 US operating Fukushima-style reactors. The petition also included the permanently closed – but nuclear waste laden – Millstone nuclear power plant.

The NRC's chief safety officer, Eric Leeds, agreed that the NRC will now review several key publicly requested actions including revoking federal approval of the current failed GE Mark I containment venting system; and ordering all Mark I operators to install backup emergency power systems to ensure cooling in the reactors' densely packed rooftop irradiated fuel pools.

"We are encouraged that NRC has agreed to look into revoking its prior approval of dangerous venting systems installed on these Fukushima-style reactors,[1]" said Paul Gunter, Director of the Reactor Oversight Project at Beyond Nuclear. "The nuclear industry is advocating for the status quo, which is unacceptable post-Fukushima. If these reactors can't meet their original licensed condition for containment as 'essentially leak tight' then they shouldn't be allowed to operate," he charged.

Beyond Nuclear has launched a national coalition effort to "Freeze Our Fukushimas" which aims to permanently suspend operations at all 23 General Electric Mark I Boiling Water Reactors in the United States similar to the dangerously flawed reactors that melted down and exploded in Japan following the March 11, 2011 earthquake and tsunami.

Leeds dismissed a request from the petitioners for "immediate" enforcement action without which, the petitioners argue, US reactors can remain dangerously vulnerable to failure for decades.

The NRC safety panel also agreed with the public petitioners to review emergency back-up power systems (alternating current from generators and direct current from battery banks) be installed to cool densely-packed high-level radioactive waste cooling ponds that sit six to ten stories up in the Mark I reactor building where, per unit, hundreds of metric tons of highly radioactive and thermally hot spent fuel is being stored.[2]

""Every community living in the shadows of these reactors with a rooftop high-level radioactive waste dump wants the emergency power systems installed now," said Kevin Kamps, Radioactive Waste Specialist with Beyond Nuclear. "The industry must be able to ensure cooling can be supplied to hundreds of tons of irradiated nuclear fuel when the lights go out," "Our recommendation is a significant upgrade over the current NRC task force's aim to only supply emergency power to 'makeup water,' as we call for prevention of boil off in the first place," he said. "We're asking questions about the unintended consequences from that condensation raining down on control room electrical circuits and elsewhere," he concluded.

A recent scientific study has provided compelling evidence that in fact a high-level radioactive waste fire at Fukushima Daiichi Unit 4 in Japan did occur, and caused large-scale releases of

hazardous, radioactive cesium-137 directly into the environment, as the storage pools are not located within radiological containment structures.[3] Individual GE Mark 1 storage pools in the U.S., as at Vermont Yankee, Pilgrim near Boston, and Fermi 2 near Detroit, hold more high-level radioactive waste than all four failed units at Fukushima Daiichi put together.

"Fermi 2 in Monroe, Michigan is the largest Fukushima Daiichi identical twin reactor in the world, and without electricity the storage pool will begin boiling away within four hours and twelve minutes, according to Detroit Edison documents,"[4] said Kamps. "The potentially catastrophic reactor and radioactive waste risks at Fermi 2 could harm the entire Great Lakes and beyond," he added. *For more information go to; www.beyondnuclear.org*

Questions Swirl Around $6 billion Nuclear Lab

Jeri Clausing reports in the *Associated Press*, Dec 4, 2011; "SANTA FE, N.M. (AP) — At Los Alamos National Laboratory, scientists and engineers refer to their planned new $6 billion nuclear lab by its clunky acronym, CMRR, short for Chemistry Metallurgy Research Replacement Facility. But as a work in progress for three decades and with hundreds of millions of dollars already spent, nomenclature is among the minor issues.

Questions continue to swirl about exactly what kind of nuclear and plutonium research will be done there, whether the lab is really necessary, and — perhaps most important — will it be safe, or could it become New Mexico's equivalent of Japan's Fukushima?

As federal officials prepare the final design plans for the controversial and very expensive lab, increased scrutiny is being placed on what in recent years has been discovered to be a greater potential for a major earthquake along the fault lines that have carved out the stunning gorges, canyons and valleys that surround the nation's premier nuclear weapons facility in northern New Mexico.

Final preparations for the lab — whose the high-end price tag estimate of $5.8 billion is almost $1 billion more than New Mexico's annual state budget and more than double the lab's annual budget — also comes as a cash-strapped Congress looks to trim defense spending and cut cleanup budgets at contaminated facilities like Los Alamos. It also comes as the inspector general recommends that the federal government consider consolidating its far-flung network of research labs.

Despite the uncertainty, the National Nuclear Safety Administration, an arm of the Department of Energy that oversees the nation's nuclear labs, is moving forward on final designs for the lab. Project director Herman Le-Doux says it has been redesigned with input from the nation's leading seismic experts, and the NNSA has "gone to great extremes" to ensure the planned building could withstand an earthquake of up to 7.3 magnitude.

Most seismic experts agree that would be a worst-case scenario for the area. But many people who live near the lab — and have seen it twice threatened by massive wildfires in 10 years — see no reason for taking the chance.

"The Department of Energy has learned nothing from the Fukushima disaster," said David McCoy, director of the environmental and nuclear watchdog group Citizens Action New Mexico, at a recent oversight hearing. That's become a common refrain since last year's earthquake and tsunami in Japan caused a meltdown at one of its nuclear plants. "The major lesson of Fukushima is ignored by NNSA: Don't build dangerous facilities in unsafe natural settings."

Lab officials say CMRR is needed to replace a 1940s era facility that is beyond renovation yet

crucial to supporting its mission as the primary center for maintaining and developing the country's stockpile of nuclear weapons. While much of the work is classified, they insist the lab's mission is to do analytical work to support the nearby Plutonium Facility, or PF-4, which is the only building in the country equipped for making the pits that power nuclear weapons.

Watchdog groups, however, call it an effort by the DOE and NNSA to escalate the production of new nuclear weapons and turn what has largely been a research facility into a bomb factory. And they are not giving up their efforts to halt the project. The Los Alamos Study Group, headed by Greg Mello, one of a number of area activists who have made a career out of monitoring LANL, has two lawsuits challenging the project and what he says is the federal government's refusal to look at alternatives despite the increased seismic threats uncovered in 2007 that have sent the price tag soaring.

Mello spends his days poring over every available public document on Los Alamos and the nation's nuclear program. And he makes frequent trips to Washington to lobby against funding for CMRR, which he says is an unnecessary attempt to "open the door for an overall expansion in intensity and scale" of the nation's nuclear weapons program.

At just about every public hearing related to the labs, Mello lines up with a regular group of aging hippies, retired scientists, former lab employees, residents of nearby pueblos as well as housewives and grandmothers from Santa Fe and other neighboring communities to oppose CMRR and anything and everything related to an expansion or continuation of the nuclear mission at Los Alamos.

While much of the public outcry over Los Alamos in recent years has focused on lagging cleanup efforts of radioactive waste and hazardous runoff into the canyons that drain into the Rio Grande, earthquake danger and the potential for catastrophic releases of radiation from existing facilities was front and center at a recent meeting in Santa Fe of the Defense Nuclear Facilities Safety Board, appointed by Congress to oversee the nation's nuclear facilities.

"The board believes that no safety issue problem in (the nation's nuclear complex) is more pressing than the plutonium facility's vulnerability to a large earthquake," the board's chairman, Peter Winokur said in reference to efforts to reinforce PF-4.

The board has worked closely with NNSA to ensure CMRR is designed to withstand a major quake, so Winokur said the board is not concerned about that project — "as long as they follow through."

It's that follow through that has watchdogs concerned. "Los Alamos doesn't have that safety ethos needed for a facility that will store the bulk of the nation's stockpile of plutonium," Mello said. Winokur agreed that safety remains a concern at the lab. Since the last contractor took over operations in 2006, he said, "It's fair to say they have improved safety at the sites." But he pointed to two recent memos about deficiencies in nuclear safety programs that he said underscore the fact "that the operations out there are very challenging and that there is plenty of room for improvement."

Asked if he thought it was wise to spend billions of dollars to keep the nation's nuclear weapons operations centered on an earthquake-prone mesa, Winokur said his mandate from Congress is to oversee safety, not second guess major policy decisions.

"I'll leave that to Congress and DOE about whether or not they want to build a facility of that nature in that region of the country where they do have a fairly large earthquake threat," Winokur said.”””

Debating Downwind in Nevada

Katrina vanden Heuvel reports in *The Nation*; "The Democratic Party moved the Nevada caucus up on the election calendar--third after Iowa and New Hampshire--to allow for a greater range of regional diversity in early voting than in the past. (South Carolina was also awarded an early primary spot). One issue that won't be debated in Iowa or New Hampshire but will loom large in the Silver State is Yucca Mountain.

Watch for each candidate to oppose Yucca Mountain and the disastrous plan to ship our nation's nuclear waste thousands of miles by road and rail to be buried in an area with a record of earthquake activity.

Lurking behind those two words is an important living nuclear history in the state which deserves attention. Between 1951 and 1992, 928 above-ground and below-ground nuclear tests were conducted at the Nevada Test Site, just miles from where the candidates will be debating in Las Vegas. Initially, the public was assured "there is no danger" and urged to "participate in a moment of history" by watching the tests.

But, in fact, people downwind of the tests--downwinders--continue to suffer and die from the lethal fallout they were exposed to. Exposed, a new play by downwinder Mary Dickson, examines the Utah playwright's own struggle with thyroid cancer and her sister's death from lupus at the age of 46. It uses transcripts of hearings to explore similar experiences of other victims who became sick, and lost friends and loved ones. The government denied any link to radiation. The play spans fifty years, and downwinders keep "cancer charts" chronicling the afflictions of their neighbors. It also addresses the Bush Administration's proposed Divine Strake in 2007--a sub-nuclear test blast--and the downwinders' organizing efforts that helped to defeat it. The play ends with the reading of the names of downwinders who have died, and new names are added after each show.

We cannot forget this living history. As Dickson told me, "Understanding the full extent of that reckless human experiment should inform any decision on both the development of new nuclear weapons and the illusory promise of nuclear power. Without that understanding, politicians will be too easily swayed to consider mini nukes and bunker busters as strategically viable weapons in the 'war on terror'--just as they will too readily embrace nuclear power as a solution to global warming. The development of any new nuclear weapons inevitably opens the door to resumed testing in Nevada and leads to the destabilizing proliferation of nukes--both of which are a disastrous course that only put us more at risk. Nuclear power is an illusory solution to climate change--one propagated by the nuclear industry, which still cannot answer the vexing question of what to do with the dangerous waste it generates. Until the waste can be addressed, nuclear power is neither a viable nor a responsible option."

This living history is nowhere to be found at the Las Vegas' taxpayer-funded Atomic Testing Museum. The exhibits excise the stories of nuclear testing victims--instead celebrating nuclear weapons as "safe, patriotic and just plain fun." As the New York Times wrote, "the history of testing, as told [in the museum], is largely the history of its justification."

That living history, as told by Dickson, should inform voters in this election as the Bush Administration and its allies (and too many Democrats) look to create a new generation of usable nuclear weapons. It should inform us as Big Nuclear ignores the "serious issues of nuclear plant safety, security against sabotage and terrorist attack and waste disposal" in promoting new plants. And it should inspire participation in renewed anti-nuclear activism as the nuclear industry lobbies for new subsidies for its self-proclaimed "nuclear renaissance."”