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# Feds Want Reactor: Critics Knock Plan to Produce Plutonium Isotope in Old Eastern Idaho Facility

Cory Hatch reports 6/30/10 in the *Jackson Hole News & Guide; "*The U.S. Department of Energy is seeking money to produce plutonium-238 in the Advanced Test Reactor at the Idaho National Laboratory 90 miles west of Jackson Hole, raising alarms with nuclear watchdogs. The plutonium isotope is needed to provide long-term electrical power for NASA projects, including missions to Mars, through 2030, according to a report to Congress that Assistant Secretary for Nuclear Energy Warren F. Miller Jr. made in June. Plutonium-238 would also be used for unspecified national security applications, Miller said.

The substance is "among the most toxic substances known to man," said Kit Des-Lauriers, interim executive director of the nonprofit Keep Yellowstone Nuclear Free. It would be created at a 47-year-old reactor that was designed to last only 20 years, said Chuck Broscious, president of the board of directors of the Environmental Defense Institute. Plutonium-238 is a very hazardous carcinogen that can also be used to make nuclear weapons, according to the Institute for Energy and Environmental Research in Maryland.

"It's important that people realize that this is the plan that has been submitted to Congress," Des Lauriers said. "Keep Yellowstone Nuclear Free will continue to follow this development and let the community of Jackson Hole know more as soon as we do." The watchdog group was formed in 1999 in Jackson Hole to oppose the construction at the nuclear site near Idaho Falls of an incinerator designed to dispose of low-level radioactive material. The site is upwind of Jackson Hole and Yellowstone, and the group was successful in stopping the plan.

Plutonium-238 has been used successfully on space missions for 50 years and can be made without worry, said Alice Caponiti, Department of Energy program director. "It's something that we can build safely and use safely," she said. Battery units are designed to contain radiation in the event of an accident. "What we would do is design our systems to not have them release radioactive material, so there would not be an exposure," she said.

The Environmental Defense Institute and Keep Yellowstone Nuclear Free just won a lawsuit against the department that requires the agency to conduct a safety review of the reactor, Broscious said. Adding another task for the reactor is "ironic and disingenuous" given the need for a safety review, he said. "You have to look at the health impacts of a major accident at the ATR," Broscious said. "We've done extensive reviews. ... It would be catastrophic to everyone downwind in eastern Idaho and western Wyoming. Expanding the mission of the [Advanced Test Reactor] to include plutonium-238 is just exacerbating that potential."

Initial phases of the project would cost up to $90 million, with $30 million needed for fiscal year 2011. The Obama administration has included a funding request in the federal budget for next year. In addition to production at the reactor at the Idaho National Laboratory, the isotope would likely be created and processed at the High Flux Isotope Reactor and other facilities at Oak Ridge National Laboratory in Tennessee. "Radioisotope power systems uniquely enable missions that require a long-term, unattended source of electrical power and/or heat in harsh and remote environments," Miller wrote in the report. "The Pu-238 in these units serves as the source for generating heat and electricity."

To critics, cost is another problem. "This is taxpayer money that should be going into wind energy or solar ... energy," Broscious said. Space agencies in other countries have successfully used solar panels to meet their electricity and heat needs, he said. "The U.S. is the only one that seems to be hard-linked into nuclear power," he said. Both the Advanced Test Reactor and the High Flux Isotope Reactor have been scrutinized under the National Environmental Policy Act analyses for the process, Caponiti said. "The [INL] reactor doesn't require modification," she said. Most of the processing would likely occur at the Oak Ridge site. "We would be using facilities designed for this purpose," she said. Plutonium-238 was last produced in the U.S. at the Department of Energy's Savannah River Site in South Carolina in 1988, Miller said in his report to Congress. Starting in 1992, the country's supply was obtained from Russia in an agreement that prohibited the use of the material for national security. Last year, Russia requested a renegotiation of the agreement, a process that could "delay the next delivery of material for three to four years," the report said. Such an arrangement "will always be a risk to NASA missions," Miller wrote.

The report states that NASA's need for plutonium-238 can likely be met by the production of 1.5 kilograms per year, about 3.3 pounds. 'Using existing facilities with some modifications, DOE expects to produce up to 2 kilograms of Pu-238 per year and to accommodate an average annual

production rate of 1.5 kilograms on a sustained basis,' the report said."

*Editors Note; As of this writing, DOE/ID continues obfuscate release of EDI/KYNF 6/10 Freedom of Information Act request related to Advanced Test Reactor documents.*

# Plutonium Wastes from the U.S. Nuclear Weapons Complex

by Robert Alvarez

**C**haracterization of radioactive wastes at nuclear weapons sites can reduce fissile material uncertainties necessary for deep nuclear arms reductions while serving to protect the human environment. In this regard, a preliminary estimate based on waste characterization data indicates that from 1944 to 2009 about 12.7 metric tons of plutonium was discarded at U.S. nuclear weapon production facilities. This is more than three times than the U.S. Department of Energy's (DOE) last official estimate of waste losses (3.4 tons) made in 1996. Of the 12.7 tons, about:

- 2.7 tons in high-level radioactive wastes are stored as liquids in tanks and as granulated material in bins on the sites of former U.S. military reprocessing plants;
- 7.9 tons are in solid waste, which DOE plans to dispose at the Waste Isolation Pilot Project (WIPP) a geological repository in New Mexico for transuranic wastes. About half is already emplaced; and
- 2.1 tons are in solid and liquid wastes buried in soil prior to 1970 or held up in facilities at several DOE sites. The DOE considers most of this plutonium to be permanently disposed.

The dramatic increase from the DOE's 1996 waste estimate appears to be due to: reclassification as waste of process residues originally set aside for plutonium recovery for weapons; underestimates of production losses; and improvements in waste characterization data. The amounted of discarded plutonium also increases the estimate of the total amount of plutonium produced by the U.S. Government from about 0.4 to 3 tons. It's possible that inventory at other sites may have also been reclassified as waste at other sites, which may also explain the increase. If so this would be more compatible with the plutonium production equation used by DOE. There remain uncertainties over how much plutonium was produced and disposed because of gaps in record keeping during the first 25 years of weapons production.

DOE should update its Nuclear Materials Management and Safeguards System to take into account recent radioactive waste characterization data. The Hanford site in Washington State is responsible for nearly a third of DOE's plutonium wastes (4 tons) – more than any site in the U.S. nuclear weapons complex. Despite evidence of significant deep subsurface migration, DOE currently plans to leave about 0.7 MT of plutonium disposed before 1970 behind in the ground at the conclusion of its environmental cleanup at Hanford. DOE should, however, remove as much buried plutonium as possible at Hanford for geologic disposal, as it is doing at the Idaho National Laboratory.

Finally, WIPP is the world's first operating deep geological disposal site for waste that includes significant quantities of weapon-usable material. DOE requires the plutonium-239 content of each waste container to be measured. WIPP therefore could be brought under IAEA monitoring prior to its closure, currently planned for 2030. This would be seen internationally as an indication of strengthened U.S. commitment to nuclear disarmament and the Nuclear Non-Proliferation Treaty.

This paper does not address about 7.6 tons of plutonium contained in DOE spent reactor fuel, and 61.5 tons of plutonium declared excess for weapons purposes with the exception of 3.5 tons discarded at the Rocky Flats Plant which is included in the 61.5 tons "excess" declaration. About 41.8 metric tons of the U.S. excess plutonium is expected to be processed so it can be mixed with uranium for fabrication into mixed oxide fuel for use in commercial nuclear power plants and subsequently disposed.

Disposition options for 5 tons of "non-pit" plutonium include mixing with defense high-level wastes to be vitrified or direct disposal in WIPP. More plutonium may be declared excess as a result of the 2010 Russia-U.S. strategic arms reduction agreement.

*Robert Alvarez is Senior Scholar, Institute for Policy Studies, Washington, D.C. and an EDI Board Member. To access Alvarez's full report and also DOE's "Start-up Plan for Plutonium-238 Production for Radioisotope Power Systems; go to EDI's website/publications; http:environmental-defense-institute.org*

# A Review of Data Triples Plutonium Waste Figures

**M**atthew L. Wald reports 7/10/10 in the *New York Times*; "The amount of plutonium buried at the Hanford Nuclear Reservation in Washington State is nearly three

times what the federal government previously reported, a new analysis indicates, suggesting that a cleanup to protect future generations will be far more challenging than planners had assumed.

Plutonium waste is much more prevalent around nuclear weapons sites nationwide than the Energy Department's official accounting indicates, said Robert Alvarez, a former department official who in recent months reanalyzed studies conducted by the department in the last 15 years for Hanford; the Idaho National Engineering Laboratory; the Savannah River Site, near Aiken, S.C.; and elsewhere.

But the problem is most severe at Hanford, a 560-square-mile tract in south-central Washington that was taken over by the federal government as part of the Manhattan Project. By the time production stopped in the 1980s, Hanford had made most of the nation's plutonium.

The plutonium does not pose a major radiation hazard now, largely because it is under "institutional controls" like guards, weapons and gates. But government scientists say that even in minute particles, plutonium can cause cancer, and because it takes 24,000 years to lose half its radio-activity, it is certain to last longer than the controls.

The fear is that in a few hundred years, the plutonium could reach an underground area called the saturated zone, where water flows, and from there enter the Columbia River. Because the area is now arid, contaminants move extremely slowly, but over the millennia the climate is expected to change, experts say.

The finding on the extent of plutonium waste signals that the cleanup, still in its early stages, will be more complex, perhaps requiring technologies that do not yet exist. But more than 20 years after the Energy Department vowed to embark on a cleanup, it still has not "characterized," or determined the exact nature of, the contaminated soil.

The department has been weighing whether to try to clean up 90 percent, 99 percent or 99.9 percent of the waste, but because the extent of contamination is unclear, so is the relative cost of the options. For now, the preferred option is 99 percent.

Government officials recognize that they still have a weak grasp of how much plutonium is contaminating the environment. "The numbers are changing," said Ron Skinnerland, a radiation expert at the Washington State Department of Ecology, which is trying to enforce an agreement it reached with the Energy Department in 1989 for the federal government to clean up Hanford.

So far, the cleanup, which began in the 1990s, has involved moving some contaminated material near the banks of the Columbia to drier locations. (In fact, the Energy Department's cleanup office is called the Office of River Protection.) The office has begun building a factory that would take the most highly radioactive liquids and sludges from decaying storage tanks and solidify them in glass.

That would not make them any less radioactive, but it would increase the likelihood that they stay put for the next few thousand years.

In 1996, the department released an official inventory of plutonium production and disposal. But Mr. Alvarez analyzed later Energy Department reports and concluded that there was substantially more plutonium in waste tanks and in the environment.

The biggest issue is the amount of plutonium that has leaked from the tanks, was intentionally dumped in the dirt or was pumped into the ground.

Mr. Skinnerland said much of the waste was 90 or 100 feet underground, too deep to dig out. Some contaminants can be pumped out, but that does not work well for materials that contain low concentrations of plutonium.

The Energy Department has researched the possibility of shooting electric currents through the soil to create glasslike materials that would lock up contaminants, but it has not analyzed whether the technique would work at those depths.

Inés R. Triay, the assistant secretary of energy for environmental management, did not dispute Mr. Alvarez's new analysis of department figures. She said that decisions on the long-term cleanup would rely not on the 1996 inventory but on a systematic sampling of the waste, which she said had yet to begin.

Mr. Alvarez's report has been accepted for publication later this year by Science and Global Security, a peer-reviewed journal published by Princeton University's Woodrow Wilson School of Public and International Affairs.

Another problem raised by the inaccuracies in the 1996 figures is that they could complicate the negotiation of new agreements with Russia or other countries about destroying bomb fuel, said Frank N. von Hippel, a professor of public and international affairs at the Woodrow Wilson School and a co-chairman of the journal's board of editors.

Gerry Pollet, executive director of the environmental group Hearth of America Northwest, said the government should embrace a cleanup plan that assures that even thousands of years into the future, an unsuspecting public will not be overexposed.

"What is reasonably foreseeable is that there are people who will be drinking the water in the ground at Hanford at some point in the next few hundred years," Mr. Pollet said. "We're going to be killing people, pure and simple."

Plutonium was first manufactured in World War II for

use in bombs. (The one that destroyed Nagasaki in 1945 originated with plutonium made at Hanford.) For decades, the government produced it in military reactors by bombarding a natural element, uranium, with subatomic particles called neutrons, converting uranium to plutonium, and then using chemical processes to harvest the plutonium.

The new analysis indicates that the chemical separation process was not nearly as efficient as the government claimed and that a lot of the plutonium was left behind in various stages. It also suggests that estimates of plutonium production by the Energy Department and its predecessors, including the Atomic Energy Commission and the Manhattan Project, were not nearly as accurate as scientists and bureaucrats said they were.

Releasing declassified figures in 1996, the Department of Energy said that 111,400 kilograms (about 123 tons) of plutonium had been produced at Hanford or taken there from civilian reactors or foreign sources.

Of that, 12,000 kilograms were “removed,” the department said. Some of that plutonium was consumed in weapons tests or in bomb attacks like the one on Nagasaki, but 3,919 kilograms of plutonium were stored as waste at Hanford, it reported.

However, Mr. Alvarez’s analysis, based entirely on Energy Department documents, shows that the amount discarded as waste was actually 11,655 kilograms, nearly three times as much, and that the total inventory of plutonium produced and acquired was closer to 120,000 kilograms, not 111,400.

Mr. Alvarez’s estimate indicates that enough plutonium is buried at Hanford to create 1,800 Nagasaki-size bombs, he said, but he played down any possibility of a weapons threat. ‘I don’t think anybody stole anything,’ he said.”

# Obama Seeks to Revive Space Nuclear Power

**K**arl Grossman reports in the *Huffington Post* 6/25/10; “Despite its huge dangers, the Obama administration is seeking to revive the use of nuclear power in space. It wants the U.S. to produce the plutonium isotope that has been used for electric generation in space and is also looking to build nuclear-propelled rockets for missions to Mars.

Plutonium-238 has been used to generate electricity on space probes and rovers and also satellites. But in 1964 a satellite with a plutonium-fueled generator, after failing to achieve orbit, fell to Earth, breaking up as it hit the atmosphere and dispersing 2.1 pounds of Pu-238 from its SNAP -- (for Systems Nuclear Auxiliary Power) 9A system. A study by a group of European health and radiation protection agencies reported that "a worldwide soil sampling program in 1970 showed SNAP-9A debris present at all continents and at all latitudes." Dr. John Gofman, professor of medical physics at the University of California at Berkeley, long linked that fall-out to an increase of lung cancer on Earth. The accident caused NASA to pioneer the use of solar panels on satellites.

NASA still used Pu-238 for space probes claiming there was no alternative -- even when there was. For example, NASA and the Department of Energy (DOE) insisted, including in court testimony, that there was no choice but plutonium power on the Galileo mission to Jupiter launched in 1989. Subsequently, through the Freedom of Information Act, I obtained a study done by NASA's Jet Propulsion Laboratory finding that solar panels could have worked. Currently, NASA is preparing to send its Juno space probe to Jupiter next year -- and it's to get all its on board electricity from solar panels. Rovers have also used solar panels.

Still, in a report titled "Start-up Plan for Plutonium-238 Production for Radioisotope Power Systems" just sent to Congress, the DOE, noting it was acting "consistent with the President's request," is calling for a return of Pu-238 production by the U.S.

Nine space missions which DOE says need Pu-238-generated electricity are listed. This includes the Mars Science Laboratory, the name given to a rover to be launched in November, and other missions to the Moon, Mars and other planets through 2030.

The report proposes that Pu-238 be produced at Oak Ridge National Laboratory and Idaho National Laboratory. "DOE's preliminary cost range estimate to implement this Pu-238 production scheme is $75-90 million," it says. The total for the fiscal year 2011 is $30 million. Facilities in the U.S. for making plutonium-238 have been closed and the nation since 1992 has been purchasing it from Russia. The processing of plutonium-238, an especially hot variant of plutonium, itself the most toxic radioactive substance known, led to worker contamination and environmental pollution here.

The notion of nuclear-powered rockets goes back more than a half century. Starting in the 1950s, there was a program called NERVA (for Nuclear Engine for Rocket Vehicle Application) followed by Projects Pluto, Rover and Poodle. No nuclear rocket ever flew, although billions of dollars were spent. There were worries about an atomic rocket blowing up on launch or crashing back to Earth. During the Reagan presidency there was development of

the "Timberwind" nuclear-powered rocket for lofting heavy equipment for the "Star Wars" space weapons program and also for trips to Mars. NASA in 2003 began Project Prometheus to build nuclear rockets but canceled it three years later.

Charles Bolden, a former astronaut and Marine major general appointed NASA administrator by Obama, favors nuclear-powered rockets -- specifically a design of Franklin Chang-Diaz, a fellow ex-astronaut. Bolden acknowledges public opposition to nuclear rockets. In an address before the Council on Foreign Relations on May 24, he said "most people... in the United States are never going to agree to allow nuclear rockets to launch things from Earth." He proposed instead having a nuclear rocket launched conventionally and then in space moving with atomic energy. "If we can convince people that we can contain it and not put masses of people in jeopardy, nuclear propulsion for in-space propulsion" would make, stressed Bolden, for a faster trip to Mars. Chang-Diaz's ion engine, he said, "would enable us to go from Earth to Mars in a matter of some-time significantly less than it takes us now."

Having nuclear systems activated only after space devices were in orbit was the procedure of the Soviet Union -- because of having undergone many launch pad explosions. That didn't help, however, when a satellite, Cosmos 954, with an on board atomic reactor activated only after launch, fell from orbit in 1978, disintegrating and spreading radioactive debris over 124,000 square miles of the Northwest Territories of Canada.

Obama, in a speech on "Space Exploration in the 2lst Century" at the Kennedy Space Center on April 15, avoided saying nuclear rocket when he declared "we will increase investment... in groundbreaking technologies that will allow astronauts to reach space sooner and more often, to travel farther and faster" and by 2025 "we expect new spacecraft designed for long journeys to allow us to begin the first-ever crewed missions beyond the Moon into deep space."

"I want to repeat this," he added. "Critical to deep space exploration will be the development of breakthrough propulsion systems and other advanced technologies."

But U.S. Senator Bill Nelson of Florida, who was on the platform with Obama and introduced by him at the start of the speech, appeared on *Hardball With Chris Matthews* later that day and spoke of nuclear rockets as what's needed -- specifically the Chang-Diaz design. "One of my crewmates," noted Nelson, a member of the Senate Science and Transportation Committee who flew as a passenger on a shuttle flight in 1986 with Chang-Diaz, "is developing a plasma rocket that would take us to Mars in 39 days."

Meanwhile, the trade publication *Space News*, in a March 1 editorial -- "Going Nuclear" -- applauded the Obama 2011 proposed budget for not only having $30 million in it for Pu-238 production but because it: also includes support for nuclear thermal propulsion and nuclear electric propulsion research under a $650 million Exploration Technology and Demonstration funding line projected to triple by 2013.

After leaving NASA in 2005, Chang-Diaz founded the Ad Astra Rocket Company of which he is president and CEO. In an interview with Seed.com last year, he said: "People have fears of nuclear power in space, but it's a fear that isn't really based on any organized and clear assessment of the true risks and costs."

As with Pu-238-generated electricity, alternative ways for powering spacecraft are being developed. In May, Japan launched what it called a "space yacht," now on its way to Venus, powered by solar sails which make use of ionized particles emitted by the Sun.

But the Obama administration would turn to nuclear power in space -- and on Earth. We have been seeing -- for two months now -- the damage of technology run amok in the Gulf of Mexico. Consider the consequences of dangerous, expensive, unnecessary nuclear-powered technology running amok above our heads."

## Two New Reactors - Obama Announces Financing for Two Nuclear Reactors

**N**uclear Power Daily reports 2/15/10; "President Barack Obama announced plans for the government to help finance the construction of two nuclear reactors -- the first in nearly 30 years, a top US official said. Obama, who has advocated reducing foreign energy dependency and cutting back on greenhouse gases, will use a 2005 law that authorizes the Energy Department to guarantee loans to projects that help reduce greenhouse gas emissions. Obama "has long believed that nuclear power should be part of our energy mix," a senior administration told AFP, speaking on condition of anonymity.

The 18.5 billion dollars in existing loan guarantee authority will be used to help finance the construction and operation of two new nuclear reactors at a Southern Company plant in Burke, Georgia.

There have been no new nuclear power plants built in the United States since the 1979 Three Mile Island nuclear accident in the eastern state of Pennsylvania. Currently only 20 percent of the country's energy needs are met by

nuclear power. The operation will result in some 3,000 construction jobs, and eventually some 850 permanent jobs, the official said, citing company figures.

According to the official, Obama's 2011 budget "triples loan guarantees for nuclear-power plants to more than 54 billion dollars."

# Billions of Dollars in Tax Breaks for Each New Reactor Under Kerry-Lieberman Wipe Out Risk for Utilities Already Benefiting from Massive Loan Guarantees

***Earth Track Analysis Finds That Just Two of the Subsidies Add Another $1.3 Billion to $3 Billion in Tax Breaks Per Reactor; May Make It More Likely Taxpayers Will Face Downside Risk.***

**F**riends of the Earth reports 6/17/10: " The nuclear industry could end up facing no risk under massive tax break subsidies in the Kerry-Lieberman climate bill, according to an important new analysis conducted for Friends of the Earth by the research organization Earth Track. These tax breaks totaling $9.7 billion to $57.3 billion (depending on the type and number of reactors) would come on top of the Kerry-Lieberman measure's lucrative $35.5 billion addition to the more than $22.5 billion in loan guarantees already slated for nuclear power.

Friends of the Earth President Erich Pica said: "Doling out an additional $1.3-$3 billion in tax breaks per new reactor means the industry would be at the table playing almost entirely with taxpayer money. Industry will have little to lose when a reactor goes belly up. While taxpayers are bankrolling the industry's nuclear gamble they would share in none of the reactor's financial returns. In fact, all taxpayers will receive if the reactors are built is responsibility for disposing of the waste. By contrast, investors stand to make billions with no risk should their reactor gambit goes belly up and enter bankruptcy."

Earth Track Founder Doug Koplow said: "These substantial tax breaks for new reactors greatly impede market access for competing energy sources and worsen the already substantial risks to taxpayers from a nuclear build-out. As has clearly been shown in U.S. mortgage markets, the likelihood of bad financial decisions rises sharply if only other people's capital is at risk. Kerry-Lieberman's nuclear tax breaks do just this by replacing investor equity with taxpayer money, and allowing investment tax credits to be claimed even before the reactor is operating. The provision to recover credits in the event a reactor is cancelled or suspended is unlikely to be effective in the most likely cause of termination – a bankruptcy due to poor economics."

The memo evaluates three tax break subsidies, describing how they work and estimating their subsidy value to recipients in the nuclear power sector:

* 5-year accelerated depreciation period for new nuclear power plants (Kerry-Lieberman section 121).

* Investment tax credit (ITC) for nuclear power facilities (K-L section 1122) and the related grants for qualified nuclear power facility expenditures in lieu of tax credits (K-L section 1126).

* Modification of credit for production from advanced nuclear power facilities (K-L section 1124).

According to the Earth Track analysis:

* The K-L tax breaks would be worth billions per reactor. The new subsidies will be worth between $1.3 billion and nearly $3.0 billion on a net present value per new reactor. This is equivalent to between 15 and 20 percent of the total all-in cost of the reactors, as projected by industry. In fact, the new nuclear tax break subsidies would be worth 15 to more than 50 percent of the expected market value of power the plants will produce. This is *over and above* the many other subsidies the nuclear projects would already receive.

* The new K-L tax breaks will undermine equity requirements of the nuclear loan guarantee program**.** In theory, the current rules require investors to hold a 20 percent equity stake in the new project. A key goal of this requirement is to ensure investors have a strong interest in the long-term success of the venture. However, the K-L bill would in effect allow investors to recover funds equal to this equity share within the first few years of plant operation. Financial risks from project failure would then rest almost entirely with taxpayers.

* Total tax subsidies to new reactors could reach tens of billions of dollars from K-L's two main tax breaks alone. The national cost of K-L's tax provisions can be benchmarked by evaluating two build-out scenarios: six reactors, matching the number likely to be supported under K-L's expanded nuclear loan guarantee pool; and 22 reactors, matching the number going through NRC licensing as of May 2010. As not all reactors will be the same type, the calculations assume half are AP1000s and half Areva EPRs. Under a six-reactor scenario, K-L will add $9.7 billion to $15.6 billion in tax subsidies to nuclear power. Under a 22-reactor scenario, the net present value of subsidies on offer just through 5-year depreciation and

ITCs reaches $35.7 billion to $57.3 billion. Neither of these other subsidies have any national caps under Kerry-Lieberman."

*Editors notes: See U.S. Code Title 42, Chapter 23, Subchapter XIII, ss 2210" Indemnification and limitation of Liability" for Nuclear Regulatory Commission licensed commercial nuclear power reactors and Department of Energy nuclear operations to an aggregate $500 million. This legislation further completely indemnifies DOE contractors from any liability. Despite the fact that this indemnification and limitation of liability is grossly inadequate when significant population regions are affected – the bottom line is the U.S. taxpayer will pay for operations miss-management and/or regulatory dysfunction. Does the BP debacle in the Gulf of Mexico ring any bells on what is at risk ?*

*Also see U.S. Code of Federal Regulations 10 CFR 840.5 that limits Department of Energy "Criterion II – Substantial damages to persons offsite or property offsite"… where "DOE finds that $2,500 or more of damage offsite has been or will* ***probably*** *be sustained by any person, or $ 5 million … in the aggregate."*

# INL Plans for Storing Spent Nuclear Fuel

Sven Berg reports in the ID Falls Post Register 7/17/10 Politics Clouds Spent-fuel issue; "Dry storage casks like at the Idaho Nuclear Technology and Engineering Center on the Idaho National Laboratory site can hold more than 100,000 pounds of spent nuclear fuel. As the U.S. eyes a nuclear renaissance, the policy of what to do with spent fuel is becoming a hotly debated and politically charged issue.

The most difficult part of understanding the issue of what to do with spent nuclear fuel may be sorting out how this country's dominant political parties form their opinions on the matter.

Republicans generally take the stance that fuel should be packaged and permanently stored in Nevada's Yucca Mountain as soon as it's ready to be shipped.

Nevada Senator and Senate Majority Leader Harry Reid, on the other hand, has fought to shut down the Yucca Mountain project almost as long as he's been in Congress, and President Barack Obama has been his ally in that mission. Reid and other Democrats say Yucca hasn't been demonstrated to be a safe, long-term storage facility for spent-fuel and that fuel should be left where it is: at the sites of national laboratories and commercial nuclear reactors around the country.

What the parties' respective stances on the technical issues of spent fuel have to do with their political platforms is not entirely clear. What is clear is that as long as a Democrat is in the White House and Reid is the Senate majority leader, the Yucca Mountain repository most likely won't be developed. After taking steps to close Yucca, President Barack Obama recently formed the Blue Ribbon Commission on America's Nuclear Future. The commission is tasked with developing a set of options for how to handle spent fuel.

The commission's findings will be closely watched here in eastern Idaho, where hundreds of tons of spent fuel are stored on the Idaho National Laboratory site. A 1995 settlement agreement between the federal government and the state of Idaho requires the government to remove all of that fuel from Idaho by 2035. If Reid gets his wish and Yucca is closed forever, the federal government would have to find some other place to store the spent fuel that's currently in Idaho or pay as much as $60,000 per day in fines to the state after 2035.

While everyone agrees that spent fuel is nasty stuff if it's not packaged and stored carefully, many nuclear scientists say there's no need to rush into a policy on where to put it all. "It's extremely hazardous because it's radioactive, but it's highly concentrated," said David Hill, INL's deputy director.

But Peter Rickards, a Twin Falls doctor who has spent years speaking out about the dangers of nuclear energy, said he doesn't believe the casks are as foolproof as they're cracked up to be. He said the tests that nuclear experts have conducted on the casks aren't rigorous enough. Subjecting them to explosions or extended periods of fire could cause them to rupture, he said.

"The best solution is to store (spent fuel) on-site ... in bunkers, and basically make it retrievable and in-spectable," he said. "The very last thing you would ever want to do is force this waste deep into Yucca Mountain or any other state."

*Editors Note; Not mentioned in the above article, much of INL's inventory of Spent Nuclear Fuel (SNF) is stored in the Idaho Nuclear Environmental Center (INTEC) Underground Fuel Storage Facility (CPP-749) that is in a flood zone and extremely vulnerable. The INTEC above-ground dry SNF storage is still in the flood zone but only less vulnerable to flooding. Additionally, according to DOE historical documents – about 90 metric tons of SNF and a significant quantity of SNF parts from the Naval Reactors Facility has been dumped in INL Radioactive Waste Management Complex (RWMC) burial ground that has been flooded in numerous in recent years. For more information on INL buried waste see EDI Citizens Guide to INL on EDI's website.*