

Environmental Defense Institute

News on Environmental Health and Safety Issues

April 2005

Volume 16 Number 3

Radioactive Fallout Didn't Pass Over Southern Idaho ??

Leslie Dean of Twin Falls, Idaho questions the implications in a recent *Times-News* editorial "Fallout didn't pass over southern Idaho? The *Times-News* article brought to mind an experience with fallout in Twin Falls. I cannot believe that Blaine County received significant fallout while Twin Falls, Jerome, Minidoka, Lincoln and Gooding did not. Draw a line from Yucca Flats to Sun Valley. It is pretty hard to miss the southern counties!

"I can attest to the fact that substantial radiation occurred in the vicinity of Twin Falls shortly after a 1950s test of a nuclear device in Nevada. I vividly recall a situation, which leads me to state unequivocally that Twin Falls vicinity did receive substantial radiation from at least one Nevada nuclear blast. The significance of radiation was not as well understood at that time and, hence, exact dates were not recorded.

"One of the Nevada nuclear tests that was set off was followed in Twin Falls by a rain shower. I took my scintillator, a sensitive radiation detection system, out into my yard on Falls Avenue West after the shower passed and the reading simply went 'off the scale,' indicating a very large amount of radiation. At the time, this did not occasion alarm and we simply went on with our normal activities. In retrospect, we all should have been very concerned.

"The fact remains that the Twin Falls area did receive a very substantial quantity of radiation fallout, and if counties to the north of the Magic Valley are to be included as 'downwinders,' it defies all logic to exclude other more southerly counties.

I cannot prove my claim of detecting heavy radiation in Twin, but I have personal knowledge of measured radiation far far in excess of normal. It seems most likely that heavy radiation fallout has impacted a wider area than just Blaine, Gem, Custer and Lemhi counties. It may not be possible to positively identify the many health-related problems as being due to radiation, but Twin Falls, at the very least did receive a very heavy fallout from at least one NTS blast." [\(1\)](#)

Fallout from CDC Hanford

Thyroid Study

Karen Dorn Steele, Staff writer for the Spokane, Washington Spokesman-Review wrote the following article titled, "Fallout from thyroid study, Critics fault CDC for early release of Hanford results, unreviewed research."

The U.S. Centers for Disease Control and Prevention deserves an "F" for its presentation of the results of the Hanford thyroid study, a chorus of critics in the Northwest say.

Top CDC officials and their Seattle researchers exaggerated the Hanford Thyroid Disease Study's negative findings, buried contradictory data, and released it Jan. 28, 1999 in a way that caused maximum harm to Hanford downwinders, they say.

Some of the critics are nationally known scientists who've flagged several errors - including mistakes in the dose estimates that have already forced the CDC to start recalculating radiation doses for most of the 3,441 people in the \$18 million study.

While standing behind his science, the study's chief researcher admits its release was bungled. "I couldn't agree more that we should have waited" for a thorough review by other scientists, said Dr. Scott Davis of Seattle, a Fred Hutchinson Cancer Research Center epidemiologist.

The researchers "clearly went over the line" when they told people they'd found no connection between Hanford's Cold War radiation releases of Iodine-131 and thyroid disease, said Tim Connor of Spokane, chairman of a CDC advisory committee on nuclear - related health studies.

The decision to release the study as a preliminary draft was made at CDC headquarters in Atlanta.

The agency reacted to public pressure to release the report as soon as it was finished last fall, said Dr. Paul Garbe, director of epidemiology in the agency's radiation studies branch. The CDC did an internal review and released the draft after the National Academy of Sciences said it would have to be made public before the academy would review it, Garbe said. "We didn't want to release it in someone else's public meeting," he said.

The 10-year study found that 3,441 people born closest to Hanford in the Columbia Basin from 1940 to 1946 had no more thyroid disease than people living in Eastern Washington counties slightly farther away. In a prepared statement, the CDC said the results "show no relationship between thyroid disease and exposures to radioactive Iodine-131 released from the Hanford site."

"They crammed some negative findings down the throats of downwinders while burying contradictory data," Connor said. Garbe disagreed. "I think we have a very well-designed and conducted study," he said. But there are several problem areas, including the following.

1.) Mathematical uncertainties in the dose responses. This is critical to the study's statistical power - whether it clearly shows a negative correlation between Hanford and thyroid disease, or whether the results might be artificially negative. The calculations are being checked. Fred Hutchinson researchers think their study has "more than adequate power," Davis said.

2.) Errors in a Hanford contractor's computer estimates used to assign individual radiation doses to the thyroid study subjects born in the area from 1940-46, identified by several reviewers. The researchers relied upon a previous Hanford study by Battelle's Pacific Northwest National Laboratory to assign doses to the people they examined, based on where the subjects lived as children. The Battelle estimates were produced for the 1994 Hanford Environmental Dose Reconstruction Project. The project underestimated by nearly three times the Iodine-131 doses from Hanford after 1950, according to a recent critique by SENES Oak Ridge Inc.'s Center for Risk Analysis. ⁽²⁾ The review was presented recently to the National Academy of Sciences panel reviewing the CDC study. The mistake means most of the 3,441 thyroid study doses will have to be recalculated, Garbe said. As a result, the Washington Department of Health has put the brakes on a program announced last October to provide Hanford dose estimates to more than 9,000 downwinders who have requested them. While the error may not dramatically skew the overall results of the CDC study because the heaviest Hanford doses were in the 1940s, "we do feel we need to wait for the new doses. They will now be delayed until at least April," said John Erickson, head of the state Health Department's radiation protection division.

3.) There are additional criticisms of Battelle's doses from the chairman of the National Academy committee that reviews CDC radiation studies, delivered three days before the thyroid study was released. The Dose Reconstruction Project model assumes cows ate sagebrush instead of grass in passing the Iodine-131 along to children through milk, an assumption that could be "highly misleading," said Dr. William Schull of Houston. While the project model is satisfactory in many aspects, Battelle made mistakes, Schull said. The model's assumptions, he said, should have been tested on Hanford events for which there were real measurements, like the 1949 Green Run, a deliberate and secret release of a radiation cloud that plastered Eastern Washington and was tracked by Air Force pilots. Because of the uncertainty, the project's doses do not necessarily represent an accurate dose to a specific individual, Schull said. He called on Battelle to correct the errors. They will be looked at "very carefully" by Battelle and CDC in the next few weeks, Davis said.

4.) The hypothesis that the Columbia Basin counties closest to Hanford had higher Hanford-related radiation doses than Okanogan, Stevens and Ferry counties also is under debate. There's evidence from the 1997 National Cancer Institute study of bomb fallout that counties far from the Nevada Test Site often had far higher doses than the counties close to the bomb site. Hanford downwinders also were exposed to bomb fallout. The researchers "bet the farm" on proving a dose response - that downwinders living closest to Hanford would have the most thyroid disease, Connor said. "The problem is, these were all exposed people," he said. Davis, however, said the study had its own internal control group: people born near Hanford who moved away immediately. They had as much thyroid disease as people who stayed in the area, he said.

5.) Another problem area is the puzzle of unexpectedly high numbers of sick and dead people among those located for the CDC study. The group's thyroid disease rates are higher than would

be expected in an average population. ``They can't account for all the thyroid disease they found," said Judith Jurji of Seattle, a Hanford downwinder who served on the study's advisory committee. Some 525 of the 5,991 people sought out for the study were dead - 20 percent higher than normal for a group of middle-aged people in Washington state. The politics and public relations aspects of the CDC study also are under siege. The CDC imposed a news blackout on public health officials for weeks before the study's release. The embargoed report was stamped ``sensitive."

Congress paid for the study, and by law the CDC was obligated to report to Capitol Hill first, Garbe said. But the extraordinary secrecy meant the CDC was able to get its spin on the study before citizens had any chance to review it. The CDC owes a better response to sick people who were lied to for decades about Hanford's secret radiation releases, Connor said. ``An epidemiological study is a very rigorous test. You are often left with inconclusive results and a community feeling deprived of their experience. This scientific team is now complicit" in the damage caused by Hanford, Connor said. ``They did some good work, but they should have been more cautious and thoughtful,"

Karen Dorn Steele wrote this article in 1/28/99 and is generally considered the most knowledgeable journalist covering Hanford environmental health and safety issues for over two decades. Steele can be reached at karend@spokesman.com.

So what happens when the sky begins to fall?

Karl Grossman wrote the following article in the Idaho Boise Weekly 3/16/05 "The Case Against the Plutonium Space Race"

Twenty years ago, I began to learn about plutonium-238, the isotope of plutonium used in space. I was familiar with plutonium-239, built up in nuclear power plants and used in nuclear weapons. My first book on nuclear technology, *Cover Up: What You ARE NOT Supposed to Know About Nuclear Power*, was published in 1980. I was reading, in 1985, a Department of Energy publication about plans by NASA, working with the DOE and several national laboratories, to launch two space shuttles carrying plutonium-fueled space probes the following year. One of the shuttles was to be the Challenger.

The publication, *DOE Insider*, stated that DOE had considered "postulated accidents" including "launch vehicle aborts, reentry, and impact and post impact situations." Knowing about the lethality of plutonium-long described as the most toxic radioactive substance with a particle less than a millionth of a gram lodged in a lung capable of being a fatal dose-I filed a Freedom of Information Act request with NASA, DOE and the national labs. The *DOE Insider* said "postulated accidents" on the shuttle shots were studied-what were the results?

I met a wall of resistance. Finally, after protesting the apparent cover-up, I was sent information in late 1985. There would be serious impacts, it was acknowledged, if the plutonium was released in an accident-although NASA and/or DOE personnel had spent considerable time and Liquid Paper censoring the numbers of people who would be affected.

The agencies maintained, there was "a very small risk of releasing plutonium-238" because of the "high reliability inherent in the design of the space shuttle." They gave one-in-100,000 odds for a catastrophic shuttle accident.

"Far more than seven people could have died if the explosion that destroyed Challenger had occurred during the next launch," I wrote in a front-page editorial for *The Nation*. And I've been deeply involved doing investigative reporting on the space nuclear issue ever since.

NASA, incidentally, changed the odds of a catastrophic shuttle accident soon afterwards-from the one-in-100,000, concocted out of whole cloth, to one-in-76, about right in light of the subsequent Columbia shuttle accident. And consider if Columbia had had plutonium on board: radioactive debris would have splattered over Texas and Louisiana.

Of the then two-dozen U.S. space nuclear shots, three involved mishaps. The most serious: in 1964, a satellite with a SNAP-9A plutonium-238 power system on board failed to attain orbit and fell to Earth. It broke up dispersing its 2.1 pounds of plutonium-238 fuel as fine particles. The release caused an increase in global lung cancer rates, according Dr. John Gofman, professor emeritus of medical physics at the University of California at Berkeley.

It was relatively easy to identify where the plutonium-238 spread, for plutonium-238 is rare compared to plutonium-239. "A worldwide sampling program carried out in 1970 showed SNAP-9A debris to be present at all continents and at all latitudes," determined a report done by Europe's Organization for Economic Cooperation and Swedish National Institute of Radiation Protection. All continents and all latitudes!

And, I learned about the extreme toxicity of plutonium-238. The good news is that plutonium-238 is not fissile like plutonium-239; it won't explode. The bad news is that because it has a half-life of 87.8 years compared to 24,500 years for plutonium-239, it is radioactively hotter. That's why it's used in space: the intense heat of it breaking down is coupled in what's called a radioisotope thermoelectric generator (RTG) to produce electricity.

"Plutonium-238 is about 270 times more radioactive than plutonium-239 per unit of weight," notes Dr. Arjun Makhijani, the physicist who heads the Institute for Energy and Environmental Research. A factor of 270 to 280 is cited by physicists.

As a result of the SNAP-9A accident, NASA began doing pioneering solar energy development. Now all satellites are powered by solar energy, as is the International Space Station. But NASA and the DOE insist that to send space devices out into the solar system, plutonium-238 is needed to provide electricity.

The danger in this program is getting more severe. In 1997, NASA launched the Cassini space probe with the most plutonium-238 ever used on a space device-72.3 pounds. Moreover, it had Cassini do two "slingshot maneuvers" around the Earth-coming back from space and flying in low and fast and taking advantage of the Earth's gravity to increase its velocity so it could reach Saturn.

If on either of these Earth "flybys" Cassini had dipped into the atmosphere, it would have disintegrated and the plutonium-238 released and "5 billion ... of the world population ... could receive 99 percent or more of the radiation exposure," acknowledged the NASA's *Final Environmental Impact Statement for the Cassini Mission*. The death toll was estimated by independent scientists as anywhere between 950,000 to 40 million.

Is this kind of enormous risk necessary?

Not at all.

Last March, the European Space Agency launched its Rosetta space probe powered by new high-efficiency solar cells-and ESA made a point of stressing it was not using plutonium-fueled RTGs on this mission. Rosetta is to rendezvous with a comet near Jupiter. It will be 800 million miles from the sun yet energized by solar power.

But the U.S. would stick with plutonium-and now is greatly expanding its space nuclear program. The \$3 billion Project Prometheus has begun-with much work to be done at Idaho National Laboratory, where also the production of plutonium-238 is to be "consolidated."

Not only is there to be more plutonium-238 generating systems used in space but under Project Prometheus, the U.S. would rocket back to the past and build nuclear-propelled spacecraft-a scheme on which \$10 billion was spent from the 1950s to 1972, when the undertaking was cancelled largely because of the still-present problem of an atomic rocket falling back to Earth.

For propelling spacecraft, new safe energy technologies have also been developed. There are "solar sails"-utilizing the ionized particles emitted by the sun that constitute a force in space. A space device with solar sails, built in Russia for the International Planetary Society, is to be launched in coming weeks.

Solar-electric propulsion is being used now on NASA's Deep Space 1 probe. Indeed, there is a group within NASA, its Photovoltaics and Space Environment Branch, which stresses the feasibility of solar power in space. On its Web site, Dr. Geoffrey, a scientist at the branch, declares: "In the long term, solar arrays won't have to rely on the sun. We're investigating the concept of using lasers to beam photons to solar arrays. If you make a powerful-enough laser and can aim the beam, there really isn't any edge of sunshine."

Then why the push for space nuclear power?

It's coming from a combination of interests. As "Deep Throat" instructed Bob Woodward in the Watergate investigation: "Follow the money." Lockheed Martin, the manufacturer of the

plutonium-238 space systems, lobbies heavily for them. Both Lockheed Martin and Boeing want the business of building nuclear-propelled rockets under Project Prometheus and push hard for them. Then there are the national laboratories-including Idaho National Laboratory-promoting space nuclear power. It's a way to increase their budgets.

Then there is the military connection.

The U.S. military has long been interested in space-based weapons and considers atomic power the ideal way to power them. "The fielding of space-based weapons of devastating effectiveness to be used to deliver energy and mass as force projection" is projected in a U.S. Air Force Board report, *New World Vistas: Air and Space Power for the 21st Century*. As to energizing these weapons, it states: "A natural technology to enable high power is nuclear power in space."

NASA, although established in 1958 ostensibly as a civilian agency, is tied up with the military especially since the most recent administrator, Sean O'Keefe, a former Navy secretary, took over.

As Bruce Gagnon, coordinator of the Global Network Against Weapons & Nuclear Power in Space (www.space4peace.org), says, the relationship between NASA and the military has never been closer. "Now," says Gagnon, the notion of "dual use," a civilian/military linkage, "runs through NASA operations."

In recent days, President Bush nominated Michael Griffin to succeed O'Keefe as NASA administrator. A prior Griffin position: deputy for technology at the Strategic Defense Initiative Organization-the federal agency long involved in developing the Star Wars program. Dual use.

What goes up can easily come down, as Newton said centuries ago.

Putting nuclear poisons above our heads is asking for it. And the production of plutonium-238 at Idaho National Laboratory presents an enormous threat-on the ground, too.

Workers at the facility will be impacted. *The New Mexican* reported in a front-page story-"Radioactive Mishaps Rising at LANL" -in 1996: "Mishaps in which workers and equipment have been contaminated with radioactive substances are on the rise at Los Alamos National Laboratory." The reason? "Lab officials say the rise in radiation exposure and radioactive mishaps since 1993 has one primary cause: the Cassini project [and] an ongoing effort to build radioactive heat sources." Being worked with, it was noted, was "an isotope of plutonium that is particularly difficult to handle, plutonium-238, which is many times more radioactive than the better known plutonium-239 used in nuclear bombs."

People off-site in Idaho can expect radioactive impacts-from accidents and routine operations. The processing of plutonium-238 at Los Alamos and the Mound Laboratory in Ohio has led to plutonium-238 contamination beyond the national laboratory boundaries. It's the wrong stuff for space and Idaho.

DOE Boosts Nuclear Weapons Budget

Jay Coghlan comments on DOE Budget 2006 in the Albuquerque Tribune 3/8/05 on how DOE continues funding nuclear weapons programs while cutting environmental cleanup funds.

The Department of Energy showed its true color - they are not green - in the release of its budget request for Fiscal Year (FY) 2006. Nationally, environmental cleanup of the widely contaminated nuclear weapons complex will be cut by 12.5 percent.

Meanwhile, core nuclear weapons research, testing and production programs for the DOE's semi-autonomous National Nuclear Security Administration will rise to \$6.63 billion, with \$34.67 billion projected in budgets over the next five years.

These annual levels are 50 percent higher than the Cold War average. Requested funding for "Directed Stockpile Work," the refurbishing, modernizing and preserving nuclear weapons, will increase by 11.3 percent. Requested funding for non-proliferation efforts to globally control weapons-usable materials is still only a quarter of core nuclear weapons programs.

Further, the security administration is asking for funding for four controversial nuclear weapons programs that Congress either cut, substantially reduced or redirected in FY 2005. The Robust Nuclear Earth Penetrator is a nuclear "bunker-buster" being designed to destroy hardened, deeply buried targets. Citing the disconnect between developing a militarily new nuclear weapon and asking other countries to forswear their own banned weapons, Congress rejected any funding whatsoever for the Earth Penetrator in FY 2005.

Now the security administration is requesting \$4 million for design and feasibility studies. In an obviously coordinated effort to help possibly mute congressional objections, the U.S. Air Force is simultaneously requesting \$4.5 million for air-drop tests.

The Reliable Replacement Warhead is an effort to eventually produce simpler nuclear weapons designs to replace today's overly sophisticated models. Last year, Congress rejected the security administration's \$9 million funding request for an "Advanced Concepts Initiative" for mini-nukes and possible exotic designs. Congress reallocated the request to the warhead initiative, for which the security administration plans to spend \$97 million over the next 5 years.

The Modern Pit Facility is a proposed industrial-scale bomb plant that would produce plutonium pits of existing and future designs. Congress rejected the security administration's FY 2005 request of \$29.8 million, appropriating only \$7 million. Two of the five candidate pit facility sites are located in Los Alamos and Carlsbad.

Now the security administration is requesting \$7.69 million for FY 2006 and projects spending \$125.76 million over the next five years. Enhanced Test Readiness is an effort by the security administration to reduce the lead time necessary to return to full-scale nuclear weapons testing

from 24 months to 18 months. The administration is requesting \$25 million for FY 2006 with \$121.64 million projected over the next five years. Congress provided only half of the administration's \$30 million FY 2005 request.

What's wrong with these weapons initiatives?

With respect to the nuclear "bunker-buster," the original claims were the Earth Penetrator would somehow be a clean, surgical-strike nuclear weapon. This has been debunked by the limits imposed by physics on penetrating hard rock or concrete, meaning massive collateral damage would still occur, and tons of ejected soil and debris would become radioactive fallout.

Again, it would be a terrible international example if the United States produced a nuclear weapon while pressuring other nations to forswear their banned weapons.

Concerning the effort toward simpler nuclear weapons designs with more "robust" shelf lives, this sends the obvious message that while preaching to others, the United States never intends to eradicate its banned weapons.

As to the last two initiatives, what can be said that is not obvious? Clearly, plans to return to massive nuclear weapons production and accelerated full-scale testing send an entirely wrong message to a world awash with banned weapons threats. Therefore, Americans have a responsibility to pressure for rational national and international nuclear weapons policies and should be strongly active toward that end.

Let's get off our butts and do just that by encouraging Congress to again cut controversial and contradictory nuclear weapons programs.

Jay Coghlan is director of Nuclear Watch of New Mexico (www.nukewatch.org), a nonprofit organization that watchdogs DOE facilities in New Mexico on nuclear weapons policies and environmental issues.

Robert Alvarez, Senior Scholar, Institute

for Policy Studies offers a compelling and detailed analysis of DOE's 2006 Budget

See his presentation posted on EDI's website

<http://www.environmental-defense-institute.org/publications>

**National Academy of Sciences Slams DOE for Conflict of Interest in
Setting Waste Rules**

DOE issued a new Order that effectively reclassified previous high-level nuclear waste currently stored in underground tanks at the Idaho National Laboratory, Hanford, and Savannah River Site.

This action will allow huge quantities of the most lethal material on the planet to permanently remain in place over vulnerable aquifers.

A recent National Academy of Sciences' National Research Council report titled *Risk and Decisions About Disposition of Transuranic and High-Level Radioactive Waste* states: "The credibility of DOE's planning and decision making is reduced by the apparent conflict of interest created by DOE's authority both to propose and approve disposition plans for radioactive waste. The burden of proof for departing from the default disposition option must be on the petitioner seeking alternative [other than statutory requirements] disposition. Allocating the burden of proof to DOE is meaningful only if DOE is not also the decision maker. That is, the burden of proof would be weak indeed if it was simply a matter of DOE convincing itself that it is right. DOE's status as self-regulating agency is problematic because of the perceived and real conflict of interest: DOE is both petitioner and decision maker. Outsiders might reasonably question whether DOE is able to separate these functions so that the agency is neutral in the latter role. DOE should not attempt to adopt these changes unilaterally. Likewise, the exemption process that the committee recommends must be implemented in the context of DOE's existing or renegotiated compliance agreements." ⁽³⁾

The Natural Resources Defense Council, along with Yakama and Shoshone Bannock Native American Tribes and several public interest groups, filed in 2001 a major litigation case against the DOE challenging the reclassifying of formerly high-level radioactive waste as "incidental" and non-high-level waste. Initially, the U.S. District Court ruled in favor of NRDC. DOE then appealed to the U.S. Ninth Circuit Court of Appeals that then reversed a judgment of the Idaho US District Court and remanded deliberation back to district court. ⁽⁴⁾ Currently, the case is back in Idaho U.S. District Court for further review.

Matheson and Bennett Renew Fight to Protect Americans from Nuclear Weapons Testing

Congressman Jim Matheson (D-Utah) announced he has reintroduced legislation that impedes efforts to resume nuclear weapons testing at the Nevada Test Site.

Matheson originally introduced the "Safety for Americans from Nuclear Weapons Testing Act" in 2004 after funds were appropriated to study development of two new types of nuclear weapons and to shorten the time needed for test site readiness. Since then, administration officials have indicated that development of new weapons or problems with the current nuclear weapons stockpile may lead to renewed testing. Without additional legislation, testing can resume at the discretion of the Secretary of Energy.

Utahns are still dealing with the legacy of illness, suffering and death as a result of the government's deceit about the dangers of past nuclear testing. Matheson notes scientific evidence that refutes the Department of Energy's claim that radioactive fallout from underground blasts is completely contained.

"Like thousands of Utah families, I am painfully aware of the federal government's failure to protect its citizens from the dangers of radioactive fallout created during atomic testing in Nevada," said Matheson. "The federal government said we were safe. The federal government knew we were at risk. I will not stand by and let the government take Utah families down that path again."

Matheson said he is very pleased that Sen. Bob Bennett has announced plans to reintroduce companion legislation in the U.S. Senate. Bipartisan efforts in the House and Senate last year resulted in much of the proposed funding for nuclear weapons development being zeroed out from the FY 2005 Department of Energy budget.

The President's fiscal year 2006 budget includes \$8.5 million in both the DOE and the Department of Defense budgets to continue studying the Robust Nuclear Earth Penetrator, or "bunker-buster" weapon. Matheson said he doubts the military would spend half a billion dollars developing new nuclear weapons and then not test them. Matheson and other defense hawks favor research into non-nuclear precision weapons to destroy deeply-buried, hardened bunkers.

"Government studies clearly show past nuclear testing resulted in extensive radiation exposure throughout the country. To date, more than 5,100 Utahns have filed claims under the Radiation Exposure Compensation Act (RECA) for cancer and other illnesses from atomic fallout. More than \$200 million has been paid by the Department of Justice. We need much more accountability from the federal government before we even consider putting citizens at risk again," said Matheson.

"I remember my father telling me about how people in southern Utah would watch the sky light up from the nuclear tests and how Utahns supported the program because they were strong patriots who believed in their country and trusted their government. Many untimely deaths later, we've learned to be skeptical of the government's safety claims regarding this issue," said Matheson.

Broad public support is needed in support of this crucial legislation. Please call your Congressional delegates via the Congressional switchboard at

1-202-224-3121.

End Notes:

1. See Twin Falls, Idaho *Times-News*, 3/5/05, and 2/22/05.
2. More recent scientific research conducted by Napier and Anspaugh for law firms representing Hanford Downwinders found additional Hanford stack emissions. So the SENES 1999 statements that Battele underestimated by a factor of three times the Iodine-131 doses from Hanford are themselves understated. A bigger issue is the lack of peer review given to the HTDS uncertainty analysis and power estimates. F. Owen Hoffman et al. reports in *Health Physics Society* 2002 that Hanford released 800,000 curies of Iodine-131. [page744] By comparison, the

Three-Mile Island considered to be the worst commercial nuclear power plant melt-down, released 13 curies of I-131.

3. National Research Council "Risk and Decisions About Disposition of Transuranic and High-Level Radioactive Waste." ISBN: 0-309-09549-2. <http://www.nap.edu/catalog/11223.html>

4. In the United States Court of Appeals for the Ninth Circuit, Natural Resources Defense Council, et al., v. Spencer Abraham, Secretary; Department of Energy, No. 03-35711, Judgment, 1/28/05. This case challenges the DOE's disposal of nearly 400 million gallons of high-level radioactive waste left over from 50 years of nuclear weapons production. This is some of the most toxic material on earth, currently stored next to major rivers in three states; 1.) Washington (Hanford with 53 million gallons),

2.) Idaho (Idaho National Laboratory with 900,000 gallons), and

3.) South Carolina (Savannah River Site with 340 million gallons). Specifically, the case challenges the DOE's Order 435.1 in which DOE gave itself the authority to reclassify this waste and dispose of it on-site in near-surface disposal, rather than in a deep geologic repository.

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