

NUKEWATCH

PATHFINDER

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News & Information on Nuclear Weapons, Power, Waste & Nonviolent Resistance



Photo by John LaForge

Participants in the Aug. 8 action at the Navy's submarine transmitter Project ELF near Clam Lake, Wisconsin, enacted a "die-in" and "shadow project" during the annual commemoration of the U.S. atomic attacks, in 1945, on Hiroshima and Nagasaki, Japan. Tens of thousands of the victims in the Japanese cities were turned to powder and ash by the atomic flash which left their shadows burned into concrete and asphalt. ~~Over 210,000 civilians were killed instantly by the two bombings. More on page 4.~~

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Four Killed In Japanese Reactor Rupture

By John LaForge

MIHAMA, Japan — Two-hundred miles west of Tokyo, inside the Mihama Unit 3 nuclear power reactor, a large corroded pipe carrying superheated steam and pressurized water burst Aug. 9, burning four workers to death. Japanese newspapers reported that 800 tons of pressurized water at 400° F exploded into a room where employees were preparing for an inspection. The steam heat was so intense it started fires. Seven other burn victims were raced to hospitals and may not survive. It was the worst death toll in Japan's accident- and scandal-prone nuclear power history.

The United States had a similar accident in 1986, at the Surry reactor in southern Virginia, when four workers were burned to death after corrosion in a neglected pipe caused an 18-inch duct to explode releasing 30,000 gallons of boiling water and steam.

Likewise, the Japanese government's Nuclear and Industrial Safety Agency disclosed Aug. 19 that nine similar pipe-corrosion accidents have occurred at Japanese reactors — including one this July at another Kansai Electric Power Company (KEPCO) reactor.

The 826-megawatt pressurized water reactor (PWR) at Mihama was designed by U.S.-based Westinghouse. The company sold dozens of PWRs now operating in the U.S. and Japan. *The Japan Times* reported Aug. 19 that the country's nuclear utilities, "have been ordered to check documentation to ensure that inspections on pipes similar to the one that ruptured at Mihama had been carried out." Inspections of record books, that is, not a physical or ultrasound evaluation of the aging pipes themselves.

KEPCO, which operates the three Mihama reactors, immediately shut them all down. All eight of the company's other reactors were shutdown Aug. 13 under demands that they be thoroughly inspected.

The water that burst out of the Mihama system was reported to be non-radioactive because it came from a secondary loop that doesn't have contact with the radioactive fuel rods or the reactor core. However, experts at the Citizen's Nuclear Information Center (CNIC) in Tokyo said that the water could be expected to be contaminated with tritium, a radioactive isotope of hydrogen. CNIC noted

that a 1991 leak at Mihama's Unit 2 reactor dumped radioactive water from the primary loop into the non-radioactive secondary system. The spill spurred a successful nationwide campaign to halt new reactor construction.

The deaths of Hiroya Takator, 29, Kazutoshi Nakagawa, 41, Tomoki Iseki, 30, and Eiji Taoka, 46, are the latest in a string of deadly reactor accidents in that have severely shaken public confidence in the industry. (See list at right.) KEPCO President Yosaku Fuji has announced that he will not resign. But the accident forced his company to admit to a series of safety lapses and rule violations.

KEPCO admitted that the circulation pipe that burst Aug. 9 had never been inspected although the reactor went on line 28 years ago. The company also acknowledged that it was warned in April last year and again in November to inspect the faulty pipes that had become severely degraded. The BBC reported that the manager of Unit 3, Akira Kokado, said the company was told months ago that the pipes needed thorough evaluations.

The nearly 2-foot wide pipe had been allowed to degrade because only visual, not ultrasound, inspections were done. The steel had corroded from a 10-millimeter thickness to 1.4 mm, the company said. A possibility of criminal charges stem from the fact that the minimum legally required thickness for the steel is 4.7 mm.

Police have opened an investigation as to why 221 workers were inside the Mihama reactor building preparing for an annual inspection at the time of the accident. Regulations require the reactor to be shut down in the run-up to inspections — not churning at full power as it was. *Japan Today* reported that the local prefecture's labor bureau has submitted papers to prosecutors urging them to charge KEPCO with illegally forcing employees to work under dangerous conditions.

The Japanese Daily *Asahi Shinbun* reported that experts had earlier complained about KEPCO's lax inspection schedule. The company only requires that one quarter of all the pipes in the secondary system be checked every 10 years. The 40 years it takes to evaluate all the pipes is longer than the licensed life of the reactor.

While Japanese Trade Minister Shoichi Nakagawa said, "We must not undermine trust in nuclear energy," the

industry itself is doing a good job of undermining any trust the Japanese may still have in it.

A Few of Japan's Accidents and Cover-ups

1967: One person died in a fire at a reactor in Ibaraki Prefecture just north of Tokyo.

Feb. 1991: Fifty-five-tons of radioactive primary cooling water leaked into the secondary water circulation system in Unit-2 of the Mihama complex. The accident spurred a national campaign to halt new reactor construction.

Dec. 8, 1995: Toxic liquid sodium leaked from a secondary cooling system at the experimental Monju fast-breeder reactor operated by the state-run Power Reactor and Nuclear Fuel Development Corp, DONEN. The government agency was found to have covered-up videotape proof of extensive damage to the prototype reactor.

March 11, 1997: At least 37 workers were exposed to inhaled doses of radiation after a fire and explosion at a uranium fuel reprocessing site operated by DONEN in Tokai, northeast of Tokyo. Plutonium spewed by the wreck was detected 23 miles away. Again, DONEN was later forced to admit covering up information about the fire, minimizing the amount of radiation released by a factor of 10. Criminal charges were brought against the agency for falsifying accident reports.

Sept. 30, 1999: At Tokaimura, two workers were killed immediately and dozens sickened when an excessive amount of uranium was illegally mixed in a bucket and "went critical," causing a burst of neutron radiation that contaminated the surrounding urban neighborhood. Neutrons pass through almost all substances, causing ionization along the way — for instance making table salt radioactive. Thousands of nearby residents were evacuated and 667 were exposed to dangerous levels of radiation as outside monitors registered levels 15,000 times higher than normal.

Summer 2003: Tokyo Electric Power Company, the nation's largest utility, was forced to close all 17 of its nuclear reactors temporarily after admitting that it had faked safety reports for more than 10 years.

February 2004: Eight workers were contaminated at the Tsuruga reactor in western Japan when they were sprayed with radioactively contaminated water.

Increased Cancer Risk from Plutonium

LONDON — Plutonium may be as much as 10 times more dangerous than previously thought, the magazine *New Scientist* reports July 18. If confirmed, the increased cancer risk from internal plutonium exposure could require recalculating international and national exposure limits.

The danger is highlighted in a British government report prepared by 12 radiation experts and leaked to the magazine. The panel was unanimous in saying that low-level radiation emitted by plutonium and similar radionuclides may cause more damage to human cells than previously believed, saying the margin of uncertainty over the risks "could extend over at least an order of magnitude" (a factor of 10).

Several tons of plutonium have been released into the environment over the last 60 years by nuclear weapons tests, etc., according to *New Scientist*. Some has also been dispersed by the "depleted uranium" munitions used extensively by the UK and the U.S. in their attacks on Iraq and Afghanistan.

Concern over the harmfulness of plutonium is growing because of discoveries about the subtle effects of low-level radiation. Researchers in Europe and North America have shown that the descendants of cells that seem to survive radiation unharmed can suffer delayed damage, a phenomenon called "genomic instability."

Cells adjacent to those that are irradiated can also sustain damage, known as "the bystander effect." And an increase was found in the number of mutations in small pieces of DNA, called mini-satellites, that are passed from one generation to the next. The fear is that these effects could trigger cancers and other ill effects.

The report, which is due to be published in the next few months, was done by the Committee Examining Radiation Risks from Internal Emitters (CERRIE). The committee includes specialists from the British government's National Radiological Protection Board, the nuclear industry, universities and environmental groups.

This "should be borne in mind by those making judgments and policy decisions on low-level internal radiation," says CERRIE's chairman, Dudley Goodhead, the former director of the Medical Research Council's Radiation and Genome Stability Unit at Harwell in Oxfordshire.

*Helen Caldicott notes in *Nuclear Madness* that in 1975, the National Center for Atmospheric Research in Boulder, Colorado, revealed that more than five metric tons of plutonium were thinly dispersed over the earth as a result of nuclear bomb-testing, satellite reentries and burnups, effluent from nuclear reprocessing plants, accidental fires, explosions, spills, and leakages. — *JL*

Sick Weapons, Sickened Workers

LIVERMORE, Calif. — Under a year 2000 congressional mandate, the Department of Labor and the Department of Energy (DOE) are to handle compensation claims from sick atomic weapons workers. The bulk of claims come from 35 large DOE sites located in Colorado, Idaho, Iowa, Kentucky, New Mexico, Ohio, South Carolina, Tennessee and Washington.

The DOE has been sluggish in processing claims and extremely harsh in awarding them. According to the General Accounting Office, the agency granted only 12 of 4,300 claims by former Oak Ridge, Tenn. employees — \$415,000 in workers' compensation benefits — compared to the Labor Department, which in the same time period awarded \$214 million to 1,936 former Tennessee workers.

Out of nearly 25,000 claims nationwide the DOE has approved only 31. The agency blames a shortage of doctors willing to accept low federal pay. Only 12% of claims filed have even been reviewed in a process for appeal that can take six to seven years. Senator Charles Grassley, R-Iowa, has called the program run by the DOE and a contractor "a disgrace" and "a terrible performance." Grassley told his colleagues in a hearing earlier this year, "If this were the private sector, these people would get canned and be out on the street."

"People who are ill with cancer, chronic beryllium disease or silicosis due to on-the-job exposures, and certain family

members, can apply to receive a payment of \$150,000 and medical care costs. Workers with other diseases or exposures to other toxic poisons can get help applying for State Workers' Compensation benefits," said Marylia Kelley, Executive Director of Tri-Valley Communities Against a Radioactive Environment in Livermore, California.

In the program administered by the Labor Dept., sick weapons workers are eligible if they have certain diseases or respiratory problems caused by radiation, beryllium or silica ingestion. The Labor Dept. has paid more than 11,000 former workers or survivors about \$868 million, plus about \$40 million toward medical bills.

On July 23, Representative Ellen Tauscher, D-Calif., announced the opening of the "DOE Sick Worker Resource Facility" at Livermore. According to Rep. Tauscher, "Over 1,000 claims have been filed by sick Livermore Lab employees, retirees or family members of deceased employees. The new resource center is a step in the right direction of finally beginning to provide these workers the fair treatment and justice they deserve." At the new center, former DOE employees will be aided in filing claims for health expenses related to radiation exposure.

The \$900 million in benefits that have been paid in response to claims so far covers just a fraction of those eligible for compensation.

Uranium Weapons Update

Project Censored, the student-run media research group at Sonoma State University in California has awarded the #4 spot in its "Top-10 most-censored stories of the year" to the issue of uranium weapons. The Project's commendation focused primarily on the Uranium Medical Research Center's controversial Jan. 2003 study of uranium contamination resulting from recent U.S. attacks titled, "UMRC's Preliminary Findings from Afghanistan and Operation Enduring Freedom."

"We define censorship as interference with the free flow of information," states Peter Phillips, Director of the Project. Phillips said, "Very important news stories that should reach the American public often fall on the cutting room floor to be replaced by sex-scandals and celebrity updates."

The Project says of the issue, "Civilian populations in Afghanistan and Iraq and occupying troops have been contaminated with astounding levels of radioactive uranium as a result of post-9/11 United States' use of tons of uranium munitions."

U.S. Rep. Jose Serrano, D-NY, has introduced HR 4463. The bill would require that before military personnel are deployed, they must be informed of known or likely use of DU in the area of their deployment and about health risks associated with DU exposure. The bill would also require that deployed forces be trained in how to handle DU and the Pentagon would have to identify those who may have been exposed to DU, provide them with bioassay testing, and notify them of the results.

Hundreds of activists have been arrested at the gates of Alliant Techsystems in Edina, Minnesota, the nation's largest assembler of uranium munitions. This summer, Alliant Action (www.circlevision.org) initiated a weekly line-crossing to increase pressure on the company. The July 28 action drew special attention from the press because Wisconsin Green Party congressional candidate Mike Miles was one of four arrested, along with Nukewatch volunteers Jane Hosking and John Heid and staffer John LaForge, all of Anathoth Community Farm near Luck, Wisc. Miles chose to kick-off his campaign with the action, saying, "Everyone is talking about supporting the troops, but neither the Democrats nor the Republicans admit that uranium contamination is the No. 1 health risk to U.S. troops."

Water Flowing Underground: Groundwater Contamination from Nuclear Bomb-building

By Molly Mechtenberg-Berrigan

Since the beginning of the nuclear age, our groundwater, an unseen, vital natural resource, has been threatened and contaminated by radioactive seepage. The U.S. nuclear weapons complex consists of 13 major National Laboratories located in 10 states. These sites occupy an area equal to the combined size of Rhode Island and Delaware. In addition, the Pentagon and U.S. Department of Energy (DOE) maintain scores of smaller facilities also dedicated to developing the nuclear arsenal.

The production of nuclear weapons, begun in the early 1940s, creates enormous amounts of radioactive, toxic garbage. The "stewards" of the national stockpile have been not just unable to contain this deadly waste and prevent it from contaminating the groundwater beneath nuclear facilities, but the DOE legally and intentionally polluted groundwater with radioactive wastewater.

Weapons facilities were, and are, typically located near large rivers or lakes or directly above groundwater because nuclear reactors and other procedures require large amounts of cooling water. Techniques such as injecting wells and dumping in earthen ponds, and drainage ditches are used to dispose of wastewater and remove it from human contact. These callous disposal methods allow radioactive and toxic chemicals to move rapidly through the environment. Now, over 50 years later, the DOE is spending millions of dollars to try and remedy the damage done, but the problem is compounded by ineffective water treatment, inadequate and inconsistent monitoring of drinking water, mismanagement of waste sites, and the continued production and improper disposal of radioactive waste.

The following summary of past disposal methods, cleanup techniques, and DOE mismanagement of radioactive wastes paints an alarming picture.

Open air dumping

Pouring wastewater directly onto the ground or into area streams was a common practice for decades after the Manhattan Project. The Hanford Nuclear Reservation was created in the early 1940s as the first large-scale plutonium production facility. The complex is located on a 570-square-mile site through which the Columbia River flows. During the decades after Hanford was created, 450 billion gallons of waste from the production of plutonium were dumped onto the desert soil. Solid and liquid wastes in leaky barrels were buried in pits, trenches and landfills. As rainwater passed through, the contamination spread into the soil and groundwater. One hundred and seventy-seven underground tanks are used to contain more than 53 million gallons of high and low-level waste. Sixty-seven of these tanks are leaking into the groundwater. Approximately 80 square miles of Hanford's groundwater has contaminant levels greater than federal and state drinking water standards, and radionuclides are moving toward the Columbia River. Radioactive pollutants include iodine-129, strontium-90, technetium-99, tritium and uranium.

The Savannah River Site (SRS) presents a similar story. SRS is a 310 square-mile complex located near Aiken, South Carolina, near the Georgia border. It was built in 1950 to produce plutonium and tritium for atomic bombs. Between 1953 and 1988, SRS's five reactors produced 36 metric tons of plutonium. The site is now a storage graveyard for intensely radioactive fuel rods.

During its prime years of operation, unknown quantities of radioactive wastewater were released into area streams and groundwater. Low-level wastes were routinely released to 68 earthen seepage basins and ponds. Radionuclides such as tritium moved quickly through streams and groundwater, finding their way to the nearby Savannah River. In addition, 30 million gallons of high-level waste was poured into large steel tanks that have corroded and cracked. A July 2004 federal inspection found that over half the tanks have sprung leaks. Contaminants that have polluted the groundwater include radium, tritium, strontium, chromium, mercury, lead and cesium. A recent report by the Institute for Energy and Environmental Research concluded that the tritium contamination in the Savannah River disproportionately affects minority communities who rely on fish as a significant part of their diet.

Direct injection into wells

Injection wells do exactly what the name implies. Radioactive water is injected deep into the ground through a human-made well. At the Idaho National Environmental Engineering Laboratory (INEEL), built in 1949 to test nuclear reactors, a yearly average of 360 million gallons of contaminated water was pumped down a 600-foot-deep injection well for 21 years, from 1953 to 1984. A 305-foot-deep well was used to dispose of low-level radioactive, chemical and sewage wastewater between 1953 and 1972. Below INEEL lies the Eastern Snake River Plain Aquifer, more than 10,000 square miles in size. The aquifer is a source of drinking water for over 200,000 rural residents, and plays a vital role in the agricultural industry of southern Idaho. Scientists have estimated that the aquifer may contain as much water as Lake Erie.

Filling fish ponds

Discharging waste into ponds is an age-old practice still used today. This method is commonly used to dispose of tailing wastes from uranium refining. While relatively low in radioactivity, mill tailings account for over 95% of the total volume of radioactive waste left from the nuclear fuel cycle: mining, milling, processing, enrichment and fuel fabrication. Primarily in the form of thorium-230, with a half-life of 75,400 years, and radium-226, with a half-life of 1,600 years, the tailings' radioactivity is still hundreds of times higher than levels in ordinary soil. This waste gradually seeps into the groundwater or nearby streams or pollutes surface water and soil when the ponds overflow.

In 2002, residents of the Lincoln Park neighborhood near Canon City, Colorado, discovered widespread uranium and molybdenum contamination in their wells and soils. The contamination is believed to have come from the nearby Cotter Corporation's uranium mill, where waste from the uranium processing was discharged into unlined tailings ponds from 1958 to 1979. Over the years the hazardous waste percolated through the bedrock and soil and moved with groundwater into residents' backyards.

Groundwater "remediation"

The use of cleanup technology to reduce the amount of toxic and radioactive contamination in groundwater is called "groundwater remediation." The U.S. government is required by law to clean up hazardous substances that may endanger public health or the environment. The Comprehensive Environmental Response, Compensation, and Liability Act, commonly known as "Superfund," was enacted by Congress in December of 1980. This federal mandate to clean up radioactively contaminated groundwater at sites throughout the country is a monumental challenge for the DOE and its partner, the Environmental Protection Agency (EPA). Reports on their progress indicate that little has been improved thus far.

Remediation can be divided into three categories: removal, containment, and treatment. Plans differ at each site due to levels of waste, the geology of the area, and the type of contamination.

Removal of the contaminants

Direct removal of existing contamination is the best way to prevent poisons from continually reaching groundwater. Removal involves digging up contaminated soil, debris, and other material and shipping it to a landfill better equipped to deal with radioactive material. Because contaminants travel and spread in the environment over the course of time, the volume of material that must be removed is far greater than the original waste. There are safety issues that must be considered for workers removing the waste and dangers involved in transporting the deadly material. Furthermore, the waste must still be considered a long-term threat at the facility where it is relocated.

"Containment"

Containment policies, which leave the waste in place, are deeply flawed. Some strategies of containment involve the placement of barriers to hold contaminated groundwater in place. In order to fully protect the environment and human health, radionuclides would have to be held in place for thousands of years. Any human-made containment system will eventually wear down over time and leak. Additionally, as wastewater accumulates, it will eventually find a path over, under, or around the barrier meant to contain it. In 2003, nearly half of California landfills were found to have unusually high levels of radiation. Of the 26 landfills with a lining to prevent pollution from leaking into groundwater, measurements at 16 exceeded maximum drinking water safety standards.

"Pump and treat" is another remediation method that attempts to prevent the spread of contamination. Groundwater is intercepted before reaching a potable aquifer, pumped to the surface, treated for removal of contaminants, and pumped back into the ground. However, many contaminants cling to the clays and sands in the ground. Because of this, the typical "pump and treat" process leaves much of the contamination — including tritium and plutonium — in the soil. Lawrence Livermore Laboratory in California, which designs, develops and tests nuclear weapons, has a plume of tritium-contaminated groundwater beneath the 626-acre site. The wastewater is continuously pumped to the surface and reinserted at the rear of the plume. The site will never achieve full decommissioning and to protect the aquifer, the process must continue indefinitely.

A federal report released in July of 2004 concluded that the "pump and treat" method used at the Hanford Nuclear Reservation is largely ineffective. The DOE has spent \$85 million on "pump and treat" over the past eight years, and despite the fact that the effort isn't working well, little has been done to find new approaches.

Groundwater "treatment"

On-site decontamination, or "treatment", involves experimental technologies to remove contaminants from water. Vacuum extraction wells, steam stripping, insitu chemical oxidation, phytoremediation, and the use of anaerobic bacteria are all technologies that are being tested at sites throughout the country. The DOE promotes these

state-of-the-art methods as clean, easy solutions to groundwater pollution. While many are worthwhile pursuits, all have problems which raises many unanswered questions. These technologies are costly to implement and there is no guarantee they will work.

Varying degrees of mismanagement

The DOE's history of wastewater "management" shows a shocking disregard for public safety. Inadequate monitoring of groundwater, lax standards, unreliable estimates of groundwater travel time, improper storage, and mismanagement at contaminated sites has compounded the environmental crisis that began in the 1940s. Below are three examples of how DOE mismanagement put the public at risk.

1) At the Shattuck Superfund site four miles outside Denver, Colorado, levels of radioactivity in groundwater skyrocketed. The soil was contaminated for forty years as several companies processed uranium, radium, and vanadium on the site. After the dump was declared a Superfund site, the EPA made a controversial decision to bury 50,000 cubic yards of contaminated soil rather than ship it to a federally licensed waste dump. The EPA monitored the groundwater in 1994. Four years later, the city reported finding heavy metals in a storm sewer pipe. Ten test wells found contamination levels exceeding the EPA's cleanup standards. The uranium concentration at one well had increased 75 times since 1994.

2) Since 1950, rocket engine tests have been conducted at the 2,800 acre Boeing Rocketdyne Santa Susana Field Lab, overlooking the Simi and San Fernando Valleys in southern California. Recently, a toxic by-product of waste reactor fuel that is used in rocket fuel, perchlorate, has been showing up in drinking water sources statewide. Three hundred and seventy drinking-water sources, 334 of which are in Southern California, show some level of perchlorate. It has also been detected in food and cow's milk, evidence that crops and livestock are being affected by contaminated irrigation or feed.

Perchlorate is linked to thyroid disorders, tumors, cancer, and impairment of brain and nervous system development in fetuses. Studies of laboratory rats have shown that even tiny doses of perchlorate can affect the thyroid's production of hormones that are critical to early childhood development. However, the level at which perchlorate poses a danger to human health is a point of contention between the U.S. EPA, the Pentagon, and the California Office of Environmental Health Hazard Assessment. Each respective body has a vastly different safety standard for perchlorate in water — the EPA stated at one point that perchlorate could be harmful in levels as low as 1 part per billion (ppb). The military sets the standard at 200 ppb, and the California Office has called for a health goal of 6 ppb. The discrepancy in standards reflects different interests — if a stricter standard were set, military contractors would be required to spend millions more on cleanup and containment.

3) Language in the 2005 Defense Authorization bill would reclassify high-level waste as low-level waste. This bill is currently being considered in Congress. Waste classified as low-level can be left on site, saving the DOE time and money. At Hanford, the passage of the bill could mean that much of the waste contained in leaking underground tanks would remain. The DOE plans to siphon out the liquid and sludge waste from the tanks and leave the residue, reclassifying it as low-level waste. State officials fear some dangerous soluble waste could reach the river in as little as a decade once it's in the groundwater. The DOE's historically flawed computer modeling claims it will take thousands of years for any residue to move out of the tanks into groundwater and into the river.

In 1983, the DOE proposed to dispose of high-level waste at a Hanford site, saying that the fastest groundwater travel time to the river was over 1000 years. Greenpeace and the RadioActivist Campaign, a public interest organization that monitors nuclear facilities, studied groundwater pathways and concluded that estimated groundwater travel time under Hanford was one-tenth of the DOE's estimates. The findings discredited the DOE's calculations and the waste project was cancelled.

The production of nuclear weapons has been on hold since the 1989. However, the Bush administration is pushing for several programs that will only exacerbate the toxic and radioactive contamination of groundwater. These include: plans to convert plutonium into MOX fuel; a proposal to create a new nuclear bomb factory called the Modern Pit Facility; plans for dozens of new nuclear reactors; a new tritium production mission; plans for the resumption of full-scale bomb testing at the Nevada Test Site; the development of new nuclear weapons, including the "robust nuclear earth penetrator" and "mini-nuke"; and operation of a \$4.5 billion laser fusion project at Lawrence Livermore Laboratory. All of these projects would complicate cleanup at nuclear weapons sites, create an even greater amount of waste, and divert much needed resources from an already under-funded cleanup budget.



Anger Over Britain's Secret Nuclear Waste Dumping

LONDON, England—Tons of foreign radioactive waste—enough to fill a six-mile-long trench—has been secretly buried on England's west central coast at Drigg, 50 miles from Ireland. The secret dumping violates government promises that Britain would never become an international disposal site for radwaste.

The Aug. 31 *Guardian* newspaper revealed that the waste from overseas power reactors has been buried in several miles of trenches—60 miles west of Leeds—in breach of official policy. The report led to outrage in Ireland and charges of lawlessness against British authorities.

"The mind boggles that scientists and technicians ... have chucked highly active waste into silos with no thought how to get it out," said Laurence Williams, the chief health and safety inspector of Britain's nuclear sites. Mr. Williams told the *Guardian*, "This is what we now have to do, and it is no easy task."

The waste is left from reprocessing highly radioactive fuel rods from nine countries. Thousands of tons of the waste fuel, containing plutonium, cesium and other deadly, long-lived isotopes, are imported under contracts between governments and British Nuclear Fuels Ltd. (BNFL), which does the reprocessing at Sellafield. The dump at Drigg is 10 miles from Sellafield.

BNFL dissolves the fuel in acid to extract plutonium and uranium so it can be returned to those countries. However, "In practice not even this has happened and the plutonium and uranium remain at Sellafield under guard," the *Guardian* said.

Green Party leader Trevor Sargent voiced outrage at the deception by the government and industry. Mr. Sargent said, "The Irish Government was promised, as was the British public, that nuclear waste brought to Britain [for reprocessing] would be returned to its country of origin."

"The report reveals ... also that the British government plans to turn this practice into a money-spinner, which further increases the exposure of Ireland to nuclear contamination risks," Mr. Sargent said.

The *Guardian* said it learned from government documents that Britain is to announce a change in its official policy and start charging foreign governments for the service of storing their waste.

The disclosure, "now means that Britain is to become a nuclear waste dump for Japan, Germany, Italy and Switzerland," Mr. Sargent told the Irish political website *Politics.ie*. "Ireland must not tolerate pollution from the nuclear industry or deception from the British Government," he said.

BNFL said the dump at Drigg, Cumbria, was a repository for low-level waste and that high-level waste was held at Sellafield—the government's giant reprocessing complex. The decision to bury reprocessing waste at Drigg meant the number of international transports of waste returned to overseas customers would be dramatically reduced, BNFL said.

But the *Guardian* reported that the waste was dumped at Drigg because it is expensive to return to the countries that produced it. The waste is part of an ever-increasing mountain of radioactive material stored at more than 20 sites in Britain. According to the giant utility company British Energy, Drigg is the only licensed low-level waste repository in the UK.

The government has said that up to 20 billion cubic meters of the waste will accumulate in Britain in the coming years—and the country has no means of disposing of it.

In Ireland, Fianna Fail party chairman Seamus Kirk condemned government plans, "to establish a global nuclear dust bin on our doorstep." He said Ireland would have to "call on all other countries to boycott this underground environmental time bomb."—*JL*

Sources: *The Guardian* & www.politics.ie; Aug. 31 & *Belfast Telegraph*, Sept. 1, 2004.

Door Opens for New U.S. Nuclear Weapons

By John G. Duesler, Jr.

Now that the 1993 Spratt-Furse Amendment has been repealed by this year's Congress, the road is now clear for the Pentagon to begin their long-desired push to research and develop so called "mini-nukes" (i.e. nuclear weapons that yield less than 5 kilotons in explosive power). While many might be inclined to imagine a smaller version of the nuclear warheads that exist today, the lifting of the Spratt-Furse restriction now makes it possible for the most talented U.S. nuclear engineers to actually blur the line between nuclear and conventional weapons. And this, in turn, will provide the fodder for a possible United States withdrawal from the Comprehensive Test Ban Treaty, which prohibits nuclear testing by the nuclear-capable states.

Department of Defense rationale justifies the work on "mini-nukes" as a necessary component of "bunker-busters," since smaller nuclear explosives may be more able to survive the extreme impact of an earth-penetrating bomb and, therefore, make it more able to be detonated deeply enough to destroy hardened bunkers (i.e. 30 meters). There are non-nuclear alternatives to defeating these bunkers, and, interestingly enough, the two most visible U.S. nemeses in the War on Terror have shunned deep-and-hardened bunkers, opting instead for a very primitive hole in the ground and ancient cave-dwellings.

So what's really going on here? Where does DOD really want to go with their Advanced Nuclear Concepts?

In the short-term, we can still expect work on low-yield nuclear bombs and robust nuclear earth penetrators. In the longer-term, however, the plans are more exotic, with nuclear science meeting at the crossroads of high powered lasers, nanotechnology, and rare metallic isomers. Microfusion

weapons, in theory, will combine miniaturization know-how with the robustness of nuclear weapons to create fourth-generation fusion bombs. Even more disturbing is the notion that the nanotechnology employed in these next generation warheads will NOT require enriched uranium or plutonium triggering mechanisms, thereby allowing proponents of these weapons to label them as "clean" (i.e. not requiring fissile materials). In addition, scientists are already looking towards microfusion technology as a source of energy, as well, so research into this area is quickly gaining priority in the U.S.

Another approach towards developing new families of nuclear bombs employs the use of rare metals that can exist in an excited, high energy state and, therefore, be quite potent as a fuel for explosives. One gram of a rare metal like Hafnium, for example, could theoretically yield explosive power up to 50,000 times that of one gram of TNT. Even more crucial to its military applications, Hafnium could be excited into releasing enough gamma rays to penetrate bunkers and kill humans, as well as any other biological weapons contained in that buried facility.

In each case, the brilliance of these nuclear scientists is dwarfed only by the measure of their work's destructiveness. Sadly, we are only left to imagine the good that could come from the hundreds of billions of dollars and superior brainpower diverted away from new agricultural techniques to feed the starving, new educational methods to teach the impoverished, and new medical advancements to diminish the suffering by the sick.

Instead, these national resources are targeted towards unnecessary Advanced Nuclear Concepts. Sad indeed.

Dr. John G. Duesler, Jr. wrote this analysis for the Nuclear Policy Research Institute's Nuclear Week in Review.

Appeals Court Dumps EPA's Lax 10,000-Year Containment Plan for Fuel Rods

By John LaForge

Proponents of the Yucca Mountain site near Las Vegas, Nevada for a national radioactive waste dump were handed a setback July 9, by the DC Circuit U.S. Court of Appeals.

The appeals court rejected a 10,000-year containment limit proposed by the Environmental Protection Agency (EPA) for high-level radioactive waste, calling it "entirely unreasonable" and "wholly inconsistent" with scientific recommendations.

At the controversial site, the government intends to bury 77,000 tons of intensely radioactive waste fuel rods from commercial power reactors—after moving the material through 40 states for 25 years.

The appeals court found that the often repeated 10,000-year containment plan violates the 1992 Energy Policy Act (EnPA), which requires that the time-line for long-term isolation of radioactive waste be "based upon and consistent with" the findings of the National Academy of Sciences (NAS), the country's most prestigious group of scientists. The three-judge panel found that "EPA wholly rejected the Academy's recommendations."

"Only in a world where 'based upon' means 'in disregard of' and 'consistent with' means 'inconsistent with' could EPA's adoption of a 10,000-year compliance period be considered ... permissible ..." the court said. Quoting the NAS report on the project, the Court said containment of the waste, "... should extend over the period of duration of hazard ... which is on the order of [one million] years."

The court noted that the NAS found "no scientific basis" for limiting the time period of the individual-risk standard to 10,000 years, and "unequivocally recommended a standard pegged to the time when radiation doses reach their peak ... after several hundred thousand years" (emphasis added).

The EPA, DOE and the Nuclear Regulatory Commission (NRC) had all defended the arbitrary 10,000-year limit, admitting that a "significantly longer time period for assessing compliance would be ... unworkable, and probably unimplementable." But the appeals court said, "We think it entirely unreasonable for EPA to have acted inconsistently with NAS findings and recommendations."

The court concluded that the EPA must either issue a revised standard that is "consistent with" the NAS peak dose standard "or return to Congress and seek legislative authority to deviate from the NAS report."

The court's opening remarks put the issue of radioactive pollution into perspective:

"Having the capacity to outlast human civilization as we know it and the potential to devastate public health and the environment, nuclear waste has vexed scientists, Congress, and regulatory agencies for the last half-century.... At lower doses, radiation can have devastating health effects, including increased cancer risks and serious birth defects such as mental retardation, eye malformations, and small brain or head size."

In view of the hundreds of thousands of years that its radiation will threaten the gene pool, nuclear waste will indefinitely remain a vexing issue.

In another potential derailing of the Yucca Mt. project, the National Atomic Safety and Licensing Board ruled Aug. 31, that the DOE failed to make available on the internet all documents related to licensing a Yucca Mt. dump as required by law, the watchdog group Public Citizen announced. Posting all relevant Yucca Mt. documents online allows the public to participate effectively in licensing proceedings.

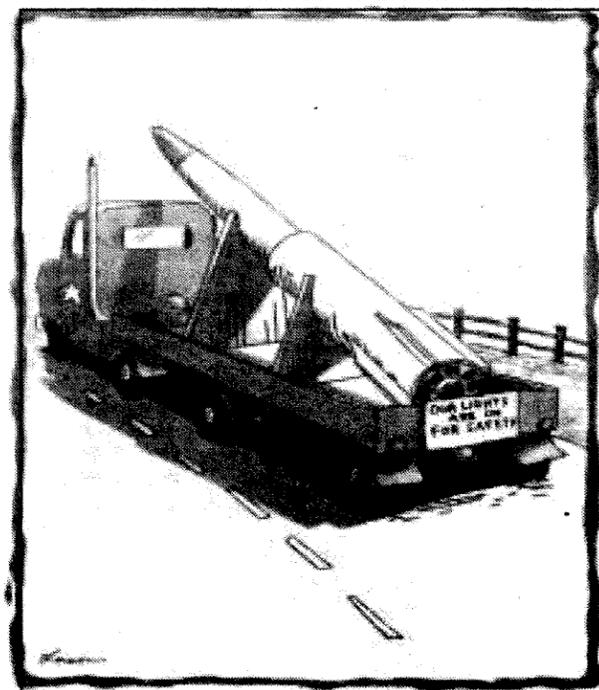
The DOE admitted to the licensing board that out of an estimated 2.1 million documents related to the project, only half were posted online as of June 30.

Under law, the NRC cannot accept the DOE's licensing application for Yucca Mt. until six months after all the documents have been made available. The project will be delayed indefinitely until the documents are posted.

"Together with the recent court ruling that the U.S. EPA illegally set a 10,000-year compliance period for groundwater radiation release standards at Yucca Mt., it is clear that the project is flawed both in its science and in its management and should be abandoned," said Winona Hauter, Director of Public Citizen's Critical Mass Energy and Environment Program.

Nukewatch Staffer Wins Social Courage Award

Nukewatch staffer and *Pathfinder* editor John LaForge has been named co-recipient of this year's Social Courage Award by the Peace and Justice Studies Association, the organization of university peace studies programs in the U.S. The Association will recognize scholarship, lifetime achievement, a student thesis and social courage at its October 15 national conference in San Francisco.



Days of Infamy: August 6 & 9 Commemorated

On Aug. 7, Nukewatch held its 25th anniversary celebration at Anathoth Community Farm. Despite a steady rain, spirits were not dampened and the event was a great success. During the course of the day, 175 people came to the rural community, 10 miles outside of Luck, Wisconsin, to join Nukewatch in celebrating 25 years of education, organizing and nonviolent resistance.

The date was chosen to coincide with the annual ELF gathering in remembrance of the U.S. atomic bombing of Hiroshima and Nagasaki, Japan, in 1945. The mayor of Hiroshima has said the U.S. government has "no right to unilaterally determine the fate of the world," and has urged President Bush to visit Hiroshima to see "what nuclear weapons hold in store."

As part of the fundraising effort, a colorful variety of donated photography, ceramics, quilting, and artwork was on display in the silent auction tent. During the day there were tours of the community, a discussion on jail witness, planning of the ELF presence for the following day and plenty of time for coalition building and visiting.

The evening program began with a dinner prepared by community members Barb Kass and Mike Miles. Musicians Eric Schubring and Phil Kitz played some classic folk tunes. Frida Berrigan, Donna Howard and Matthew Rothschild addressed the gathering and the evening ended with several songs by singer, songwriter and activist Sara Thomsen, who inspired the crowd with her thoughtful music.

Eleven more arrested at Project ELF

On Sunday, Aug. 8, about 100 antinuclear activists from the U.S., England and New Zealand gathered at the U.S. Navy's ELF transmitter near Clam Lake, Wisconsin. The annual gathering commemorated the U.S. atomic bombings of Hiroshima and Nagasaki. Eleven people were cited for trespass during the demonstration.

As part of the nonviolent presence at the facility, those gathered spent 15 minutes in complete silence in memory of the 15 minutes it took the atomic bomb dropped on Hiroshima to travel from the plane to the ground. Dozens of people then participated in a "die-in," representing the 135,000 men, women and children who were killed instantly by the Hiroshima bomb on Aug 6, 1945, and the additional 70,000 who died in Nagasaki three days later. During the "die-in," the eleven who were ticketed for trespass walked under an unlocked gate into the compound.

Seven of those ticketed were from the Chicago-based Christian Peacemaker Teams (CPT), a human rights group that sends volunteers trained in nonviolence to trouble spots around the world. CPT was one of the first groups to call attention to torture and illegal detention of prisoners in Iraq.

Two women, Nukewatch staffer Bonnie Urfer and Gail Vaughn of LaCrosse, Wisc., were taken into custody for

outstanding ELF fines they had refused to pay. Their fines were anonymously paid and both were released later that day.

The nine others arrested included: Suzanna Collard, River Forest, Ill.; Tom Fox, Springfield, Virginia; Christina Gibb, Dunedin, New Zealand; John Lynes, Hastings, England; Michele Naar-Obed and Michael Walli both of Duluth, Minn.; Michael Smith, Gibson City, Ill.; Scott Smith and Annaliese Watson, both of Tillamook, Oregon.

The eleven were ordered to appear in Federal court in Madison Oct. 12 for arraignment. They face a maximum of 6 months in jail and a \$5,000 fine.

A few choice words

Several speakers addressed Nukewatch supporters during our 25th anniversary celebration Aug. 7. Some excerpts follow.

Frida Berrigan, from the World Policy Institute in New York, spoke about the direction the Bush administration is taking U.S. nuclear weapons policy.

... It's sort of a daunting responsibility to talk about why we're going to need a Nukewatch for another twenty-five years.... The threat posed by nuclear weapons has not faded and, in fact, has grown much worse, more pernicious, harder to define, harder to pinpoint, cloaked now in the rhetoric of the war on terrorism — in the lie that brought us to the war and the occupation in Iraq. We have a president who says we will not permit the world's most dangerous regimes and terrorists to threaten us with the world's most destructive weapons. But we have a president who doesn't acknowledge that the United States is the world's most dangerous regime and that nuclear weapons are the world's most destructive weapons.... The Bush administration is planning on building a new generation of atomic weapons and has articulated a policy of preemptive first-use even against non-nuclear states.

At the same time, we see this renaissance of nuclear power and the presentation of nuclear power as a clean and safe alternative to U.S. dependence on foreign oil.... There are three nuclear conglomerates that have applied for new permits to build reactors in Mississippi, in Illinois and in Virginia. Throughout the world there are 440 commercial nuclear reactors. In an article in the New York Times, it was recently reported that another 31 are being built currently or are in some stage of construction. And this is taking place despite the unacceptable risks and the high costs of nuclear energy, and this is a real turning back of the clock on all the decades of antinuclear work.... Beyond the specter of another Three Mile Island or Chernobyl accident, there's another concern about nuclear power. Each nuclear reactor is an atomic bomb factory waiting to happen. They are the building blocks for nuclear weapons. They are a way of bringing the technology and the know-how into one place....

The small black bundles now stuck to the streets and bridges and sidewalks of Hiroshima numbered in the thousands. At the same instant birds ignited in midair. Mosquitoes and flies, squirrels, family pets crackled and were gone."

Robert Jay Lifton, a psychiatrist who refused to work within the orthodox limits of his profession, was one of the first, in his book, *Death in Life*, to interview survivors. A junior college girl in Hiroshima remembered, "The faces of my friends who just before were working energetically are now burned and blistered, their clothes torn to rags.... Our teacher is holding her students close to her like a mother hen protecting her chicks, and like baby chicks paralyzed with terror, the students were thrusting their heads under her arms."

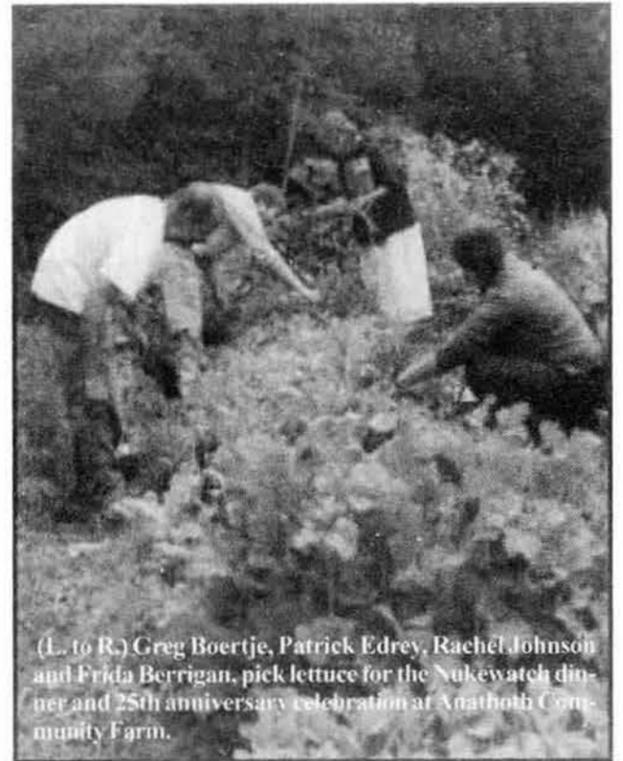
A woman, then a girl in the fifth grade, remembered, "Everybody in the shelter was crying out loud.... I do not know how many times I called begging that they would cut off my burned arms and legs."

One of the first American journalists on the scene after the bombing was John Hersey. His articles in *The New Yorker* were reproduced in the book, *Hiroshima*, and delivered the first shock to an American public still celebrating the end of the war. Hersey interviewed six survivors: a clerk, a tailor's widow, a priest, a doctor, a surgical assistant, a pastor. He found that of 150 doctors in the city, 65 were dead or so badly wounded that they could not work.

Hersey reported on his interview of the pastor, "Mr. Tanimoto ... reached down and took a woman by the hands, but her skin slipped off in huge, glove-like pieces. He was so shocked by this that he had to sit down for a moment.... He had to keep consciously repeating to himself, 'These are human beings.'"

Only with those scenes in our minds can we judge the distressingly cold arguments that go on now, 50 years later, about whether it was right to send those planes out those two mornings in August of 1945. That this is arguable is a devastating commentary on our moral culture.

— Howard Zinn is Emeritus Professor of History at Boston University and author of *A People's History of the United States*, among other texts. This excerpt is from, "*Hiroshima: Breaking the Silence*," in *Critical Mass: Voices For a Nuclear-Free Future*, Greg Ruggiero and Stuart Sahuika, Eds., 1996, Open Media, Westfield, New Jersey.



(L. to R.) Greg Boertje, Patrick Edrey, Rachel Johnson and Frida Berrigan, pick lettuce for the Nukewatch dinner and 25th anniversary celebration at Anathoth Community Farm.

Donna Howard, longtime supporter and plowshares activist, spoke about citizens' direct disarmament.

... There's a creative polarity and tension in the Plowshares movement between symbolism and what's real. Every action is symbolic disarmament. Obviously we can't accomplish disarmament. They're going to rebuild the thing the next day. Whatever it is, they're going to fix it, they're going to replace it. And it was one component out of what Frida was describing as the full nuclear weapons system. But it's also very real with your hammer or whatever your household tool is. You do do real disarmament and there's a creativity there. I think there's polarity and creativity between the extremes of effectiveness and moral responsibility. I have my spiritual, personal, ethical, moral responsibility to do the right thing whether I think it will accomplish anything or not. I mean, if they're going to build the weapon the next day, even if I know the world is going to end tomorrow, I have to do what is right....

Use what you have. Your wits, love, bolt cutters, pen and paper, banners, tax resistance, your voice, your hands, your information, your whole life. Go on strike, refuse to do absolutely everything that this country's paradigm needs for you to do in order to perpetuate itself....

What if we did a Plowshares action all at once? What if we all cut poles together — as many people as there are here tonight cut a pole altogether? That would be something they could not ignore in court. They would have to try 150 people for one cut pole. It's a time for extraordinary courage, brain power, creativity, cooperation and outrageousness.

Matthew Rothschild, editor of *The Progressive* magazine, shared some thoughts on the Administration, the U.S. occupation of Iraq and current nuclear threats.

[Nukewatch began as an effort] to show everyone in this country that H-bombs, the most horrific weapons ever devised, were in our midst, were being constructed in our midst ... to chart the factories where each little element of this nuclear weapons system was put together so that the peace groups ... could raise a protest ... and educate their neighbors and their friends.... And actually that has been Nukewatch's mission for the last 25 years — to educate the American people about this horror, this on-going monster in our midst. Nukewatch has educated a generation of people about this, through the Pathfinder, through your actions, through your writings ... and through your example.... And you've educated a generation of people in the fine art of civil disobedience....

Where are we today in this country? You look at the crowd in Washington and to my mind it's the scariest crowd that's ever been in the White House, with the possible exception of Richard Nixon roaming the halls alone and drunk at night. This group really is drunk with power.... Power ... is an inebriating cocktail and almost everyone who uses it abuses it. But these people are more abusive than others.

... The Iraq war is still going on. Just yesterday the U.S. killed 300 people in Iraq. There have been more than 10,000 Iraqi civilians killed. There have been about 920 U.S. soldiers who have died, about 5,000 have been wounded. There's no solution that our leaders are proposing....

The U.S. has about 2,000 nuclear weapons still on hair-trigger alert, 15 years after the fall of the Berlin Wall. There's no reason why nuclear weapons should be on hair-trigger alert so that a president — who sees on a computer, or the Strategic Command sees on a computer, that there might be something coming in he thinks is a nuclear weapon — has 15 minutes to decide whether to launch or not. There have been many times since 1945 — a couple times even after the fall of the Berlin Wall where an accidental nuclear war almost broke out. Boris Yeltsin, maybe in a not-so-sober moment, thought there were nuclear weapons coming in because the U.S. had a satellite over Norway and a Russian computer technician had to be on the ball there and say, look, maybe this isn't an incoming missile after all....

We are living in an empire. Nuclear weapons are the badge and holster of the sheriff of the empire. They're the pillars upon which the empire is built. They're the advance men for the Pentagon and the Pentagon is just the advance men for U.S. corporations....

Hiroshima Remembered: Breaking the Silence

By Howard Zinn

The bomb dropped on Hiroshima on August 6, 1945 turned into powder and ash, in a few moments, the flesh and bones of 140,000 men, women, and children. Three days later, a second atomic bomb dropped on Nagasaki killed perhaps 70,000 instantly. In the next five years, another 130,000 inhabitants of those two cities died of radiation poisoning.

No one will ever know the exact figures, but these come from the most exhaustive report available, *Hiroshima and Nagasaki: The Physical, Medical, and Social Effects of the Atomic Bombings*, put together by a team of 34 Japanese scientists and physicians, then translated and published in this country in 1981. Those statistics do not include countless other people who were left alive, but maimed, poisoned, disfigured, blinded.

We live in a time where our minds have been so battered by the statistics of death and suffering that figures in the millions leave us numb, and nothing but the personal testimony of individuals, even if it can only faintly represent the reality, is capable of shaking us out of that numbness.

A Japanese schoolgirl, 16 at the time, recalled years later that it was a beautiful morning. She saw a B-29 fly by, then a flash. She put her hands up and "my hands went right through my face." She saw "a man without feet, walking on his ankles." She passed out. "By the time I wake [sic] up, black rain was falling.... I thought I was blind, but I got my eyes open, and I saw a beautiful blue sky and the dead city. Nobody is standing up. Nobody is walking around.... I wanted to go home to my mother."

This was Kimuko Kaskey, speaking in broken English at a Washington, D.C. Senate hearing. We need to recall her testimony and that of another, "A woman with her jaw missing and her tongue hanging out of her mouth was wandering around ... in the heavy black rain ... crying for help."

In *The Making of the Atomic Bomb*, probably the most thorough and most vivid narrative of that long, costly, and secret enterprise on the New Mexico desert known as "The Manhattan Project," Richard Rhodes, scrupulously controlled up to this point, describes the results with unmistakable feeling:

"People exposed within half a mile of the Little Boy fireball were seared to bundles of smoking black char in a fraction of a second as their internal organs boiled away....

Radioactive Waste Shipments Shunned

By Bonnie Urfer

Shipments of radioactive waste in the U.S. look like a shell game in a carnival run by the clowns, or the Abbot and Costello routine, "Who's on first?" Only no one's having fun with the radiation because the DOE and the nuclear industry are facing a crisis.

According to the Transportation Department, "U.S. highways carry an average of 7,000 loads of radioactive material each day, 2.8 million shipments per year," consisting of medical isotopes, X-ray sources for hospitals, food irradiators and industrial welders and all sorts of radioactive waste. Most waste travels by truck but there's a strong industry push for more rail transport based on economic and safety reasons. For the moment, fewer than 100 shipments per year include highly radioactive irradiated fuel rods (HLW) from U.S. and foreign reactors. This will change if a temporary or permanent HLW storage site opens.

Most radwaste shipments include contaminated items such as gloves, clothes, tools, medical waste, etc. Almost every waste production site has a Low-Level Radioactive Waste (LLRW) dump. But the majority of waste shipments for disposal travel to four locations: the federal Nevada Test Site; Barnwell, South Carolina; Hanford in Washington State; and a private mixed-waste dump operated by Envirocare Corp. near Clive, Utah.

The nuclear waste shell game is illustrated by the bizarre mix of shipments from or through New York State in just one year, 1997. The Low-level Radioactive Waste (LLRW) disposal facility in Barnwell, South Carolina received 20%, by volume, of the waste sent from or through New York. The Scientific Ecology Group's LLRW treatment facility in Oak Ridge, Tennessee, received about 16.5% of the waste. Another 12% of the LLRW was transported to treatment facilities in Gainesville, Florida (Perma-Fix) and in Wampum, Pennsylvania (Alaron). About 51% of the waste went to the Envirocare site in Clive, Utah. The remaining 0.5% of the waste was transported to ADCOM Express in Tinley Park, Illinois and Teledyne Brown Engineering in Westwood, New Jersey. In the end, the majority of this waste is transported to Barnwell.

Radioactive dilemmas

Deadly radwaste is the Achilles Heel of the nuclear age. Problems with the industry's complex plans for shipping, storing and dumping nuclear garbage should bring the industry to a halt. A short list looks like this:

- The contractor for Fernald, Ohio's million-dollar-a-day clean-up project, is ready to ship rad waste to Nevada, but Nevada doesn't want it and has threatened to sue the DOE. But Ohio wants it out and has also threatened to sue the DOE. The DOE is putting transport on hold until it can find a sacrifice zone.
- New Mexico has halted shipments from the Idaho National Engineering Laboratory to the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico. Workers at WIPP discovered drums of waste that should not have been onboard a truck — they'd been added after the shipment had already

been inspected. New Mexico officials say as many as 108 illegal containers may have already been disposed of this way at the WIPP site.

- In 1980, Congress encouraged the creation of multi-state radwaste compacts. By agreement one state is chosen to be the first recipient for all the waste produced by the other states in the compact. Nebraska originally agreed to accept waste from Kansas, Arkansas, Louisiana and Oklahoma but has now pulled out of the Central Interstate Low-Level Radioactive Waste Compact, deciding it doesn't want to be the fall guy. The compact states sued Nebraska and in a legal battle that lasted six years, U.S. District Judge Richard Kopf said in 2002 that Nebraska acted in bad faith by refusing to license a rad waste facility. Nebraska settled the lawsuit by agreeing to pay \$141 million to the multi-state consortium. In turn, Nebraska was relieved of its obligation to license a dump. In 24 years of compact work, not one low-level radioactive waste dump has yet been licensed.

- The 235-acre Barnwell site announced that it will begin limiting shipments, and that starting in 2008 it will no longer accept waste from outside its region. The amount of radioactivity in the garbage being delivered to Barnwell is steadily increasing. In the past six years Barnwell has begun taking parts from decommissioned atomic power reactors and even retired reactors. South Carolina Sierra Club member Susan Corbett says, "We are becoming a graveyard for whole nuclear vessels."

- The Clive, Utah company "Envirocare" has the capacity to accept a lot of waste but cannot take more highly contaminated garbage. The site in Texas targeted as a potential dump is the sparsely populated Andrews County, but the plan has been met with fierce opposition. Nebraska has offered to pay Texas a flat fee of \$25 million to accept the Central Interstate Compact's waste, but opponents fear that if Texas takes waste from a state outside its compact, the Andrews County site could become the *de facto* dump site for the entire nation.

- Elsewhere, radioactive waste is being delivered from California, Idaho, New Mexico, Texas, Colorado, Ohio, Kentucky, South Carolina and Tennessee to open pits at the Nevada Test Site near Las Vegas, which is not a licensed dump.



These barely-placarded canisters of plutonium-contaminated waste were being trucked to the Waste Isolation Pilot Plant near Carlsbad, New Mexico. The trucks carrying the radioactive garbage are required to stop at the New Mexico border or "Port of Entry" for radiation monitoring before proceeding into the state.

Plutonium shuffle

The U.S. is shipping 300 pounds of plutonium to France for processing into MOX (plutonium and uranium) fuel for tests as potential power reactor fuel. Armed trucks will transport the bomb-grade material from Los Alamos, New Mexico to the Charleston Naval Weapons Station in South Carolina. It is then to be loaded onto two heavily-armed British-flagged ships, sail to Cherbourg, France, and finally be moved onto trucks for a 1,000-kilometer trip to the reprocessing facility. From the French MOX fuel production site, the fuel will return to the U.S. and be transported to Duke Energy's Catawba reactor in South Carolina. The movement of plutonium is part of a U.S.-Russian agreement to reduce weapons-grade plutonium stockpiles by 34 metric tons. The federal government wants to build a plutonium

reprocessing facility at the Savannah River Site near Aiken, South Carolina, but has slowed the plans because of delays on Russia's end.

Alaron, a Swiss-owned corporation with a facility in Pennsylvania, is allowed to take waste, for "treatment," from anywhere in the world. Fuel rods, always heavily contaminated with plutonium, may arrive in San Francisco from overseas then be taken cross-country by rail to Alaron. When Alaron is done with the rods the nuclear waste is shipped via tractor-trailer and/or rail to its final dumping facility.

The Goshute Reservation in Skull Valley, Utah could become the dry-cask storage

site for Private Fuel Storage (PFS), a consortium of reactor utilities looking for above-ground high-level waste storage space. Goshute Tribal leaders entered into a deal with PFS for an undisclosed amount of cash. Now, even before the site has been licensed, PFS has begun advertising "rental space" for irradiated fuel rods in trade magazines. Fuel rods have been accumulating at more than 60 sites around the country. The Goshute site would be big enough to hold up to 4,000 casks — about 10 million rods — on concrete pads sprawling across 100 acres. Shundahai Network (Shundahai.org) is leading a nationwide campaign to halt this proposal.

The great negligence surrounding radioactive waste is that none of the producers have begun to talk about shutting down. Reactor operators and bomb makers knowing there is no answer to the problem of their deadly refuse — continue on a course headed straight toward disaster.

Sources: *Pahrump Valley Times*, Aug. 13, *the Lawrence Journal-World*, Aug. 16, *Greenpeace*, Aug. 26, *the Post and Courier*, June 22, & *the Salt Lake Tribune*, Aug. 16, 2004.

Food Irradiation Increasingly Unpopular

California lunch irradiation bill calls for parental notification

In California, Assembly Bill 1988, which has passed the legislature, is awaiting Governor Schwarzenegger's approval. This bill requires school board approval, public disclosure and parental notification before irradiated foods can be purchased for school lunch programs.

The U.S. Department of Agriculture (USDA) included irradiated foods in the National School Lunch Program in May 2003, despite overwhelming opposition from parents and the public. Under federal law, schools have no obligation to inform parents that their children are eating irradiated foods. This lack of accountability to parents is particularly egregious because the National School Lunch Program serves 27 million children annually nationwide, most of whom are from low-income families and may be undernourished at home.

Six California school districts have banned irradiated food from their cafeterias, including Los Angeles and San Francisco. While no school in the state will serve irradiated meat in the upcoming school year, doing so will remain an option for California school districts for the foreseeable future. By passing this bill, lawmakers have ensured that California remains accountable to both parents and disadvantaged schoolchildren.

Irradiation exposes food to high doses of ionizing radiation to kill bacteria. In the process, nutrients and vitamins are destroyed and new toxic chemicals are formed. Recent research has shown that one class of these chemicals, cyclobutanones, promotes cancer development and causes genetic damage to human cells. No long-term studies have been conducted on how children's health is affected by eating irradiated food. Additionally, irradiation exacerbates the problems faced by family farms because it opens the floodgates to imported food, as well as contributes to the consolidation of the food industry by extending shelf life. (Visit <www.safelunch.org> for more information.)

Californians can urge Gov. Schwarzenegger to sign the bill by faxing his office. Fax: 916-445-4633; Website: govmail.ca.gov — Audrey Hill, Public Citizen

Federal Child Nutrition Act amendment requires notice of irradiation in school lunches

Congress has passed the Child Nutrition Act reauthorization complete with language on irradiated food in the school lunch program. The bill was passed by the Senate June 26, and June 27 by the House. The measures on irradiation require:

- * Irradiated food can only be made available at the request of state and local school systems — it cannot be mandated by USDA;

- * Irradiated food cannot be subsidized by the federal government (this means that USDA cannot offset the increased costs of irradiated foods to encourage their use);

- * Irradiated foods distributed to federal meal programs must be labeled as irradiated. (This measure ensures that school food service employees know that the food is irradiated. It does not require the school to pass the labeling on to students.)

- * Irradiated and non-irradiated foods cannot be mingled.

- * Schools using irradiated foods are encouraged to offer a non-irradiated alternative.

USDA still lying about irradiation

On Aug. 16, Public Citizen again urged the U.S. Department of Agriculture to correct misinformation regarding food irradiation on its web site. Chief among Public Citizen's concerns is that USDA's "Irradiated Commodity Beef: Frequently Asked Questions" Web page notes that "Nearly two dozen supermarket chains now provide irradiated meat for their customers in some 30 states across the country." However, when Public Citizen recently called 15 major national

supermarket chains that previously sold irradiated beef, all of them said they had stopped carrying the product.

* The site also notes that "Two major restaurant chains offer irradiated meat products in 145 establishments in the Upper Midwestern States." Public Citizen assumes this refers to Dairy Queen and Embers America, the two chains that advertised using it last year. On Aug. 5, 2004, Public Citizen called the corporate headquarters for both companies and was informed by their officials that they no longer offer irradiated meat products in their restaurants.

* According to the "Public Relations Tool Kit" for schools that is linked to the USDA site, "The most common irradiation procedure in use today involves electronic beams using ordinary electricity, not radioactive materials."

However, the company that used the e-beam technology to irradiate food, SureBeam, went bankrupt in January and is no longer in business. Instead, the USDA has selected Qualipaq Meats to be the sole vendor of irradiated meat to the National School Lunch Program. Qualipaq Meats is using an irradiation firm that treats its meat with the radioactive isotope cobalt-60 — not electronic beams.

These errors also may lull readers into a false security about irradiation because they gloss over the controversy surrounding irradiated food and don't provide concerns about the long-term health effects of consuming it." We urge the USDA to correct its materials and provide the truth, not marketing gimmicks designed to trick consumers into believing that irradiated food is a widespread and common consumer product," said Winona Hauter, director of Public Citizen's food program.

Public Citizen has written the USDA three times previously, requesting that their materials present a fair and accurate overview of irradiation. So far none of their input has been included in the materials.

— Tracy Lerman, Public Citizen

NUCLEAR SHORTS

Reactor Wastewater Killing Billions of Fish

PITTSBURGH, Penn. — The Environmental Protection Agency has issued federal standards regarding massive fish kills at nuclear reactors. A coalition of six states is suing the EPA over the inadequacy of the regulations.

Alex Matthiessen, director of Hudson Riverkeeper, the New York group leading the coalition, charges the EPA with rewriting the Clean Water Act to allow utilities to continue functioning "as aquatic slaughterhouses."

Nuclear reactors like Indian Point on the Hudson River in New York and Diablo Canyon in California take in over 2.5 billion gallons of cold water per site each day in order to cool the generated steam used to spin turbines for electricity production. The systems spew the water back into the ocean or river at temperatures near 110 degrees — putting the lie to industry claims that it doesn't contribute to global warming.

The Salem nuclear reactor in New Jersey — which takes in 250 million gallons of water a day — acknowledges killing three billion fish a year, but company spokesman Neil Brown said the fish kill has "absolutely no impact on the fishery," because, "more than 99% of the three billion were eggs and juvenile fish." The Eddystone reactor sucked in 150 million fish larva in 1977 and destroys 33,000 juvenile and adult fish each year. The Armstrong reactor on the Allegheny River trapped 49 million larval fish in 1978.

Reactor operators could convert to closed-cycle cooling which doesn't draw water continually, but recycles it instead — using cooling towers — which means needing to replenish just 1% to 5% of the cooling water a year. Because a closed-cycle reduces intake volume and velocity, fish kills are decreased between 95 and 99%. Revamping the cooling systems by switching to cooling towers might cost an additional \$1.10 a month for ratepayers and save three billion fish. — *Pittsburgh Post Gazette*, Aug. 22, 2004; Paul & Linda Gunter, *License to Kill*, Nuclear Information & Resource Service, Feb. 2001.

Tennis Champion Fled Chernobyl Fallout

WIMBLEDON, England — You have to hand it to the surprise Wimbledon champion Maria Sharapova (right) for getting news of the Chernobyl radiation disaster into sports sections and pop culture rags. The 17-year-old tennis powerhouse — who won the coveted Wimbledon title July 3, by trouncing two-time winner Serena Williams — was born in the Russian town of Nygan in western Siberia. As sports fans around the world learned, she was two when her family fled, "fearing the fallout from the Chernobyl nuclear accident." *Rolling Stone* reported that the town's average temperature of minus 1.7°F, "wasn't reason enough for the Sharapova family to emigrate — but the fallout from the Chernobyl nuclear reactor meltdown, which happened a year before the family's only child, Maria, was born, pushed them over the edge." Now, as the latest tennis marvel travels the world winning more trophies, she can use the opportunity to warn the world about the dangers of exposure to low-dose radiation.

— *St. Paul Pioneer Press*, July 4, & *Rolling Stone*, Aug. 19, 2004.

Nuclear Waste Pipe Connected to Drinking Water

NORTHERN TERRITORY, Australia — A wastewater system contaminated with uranium and toxic chemicals was mistakenly connected to the potable water supply used by employees at Australia's Rio Tinto Ranger uranium mine. For eight days workers drank and showered in the poison 100 times more radioactive than the legal limit. Twenty-eight of them reported symptoms of radiation poisoning including headaches and vomiting. The Public Relations department at Energy Resources of Australia Ltd. (ERA), a Rio Tinto subsidiary, asserted as usual that there would be no long-term health effects for those contaminated. Net profit for ERA for the first half of this year totaled \$11.35 million. — *The Courier-Mail*, July 23, & Australian Radio, PM transcript, April 13, 2004

Dangerous Incinerator Nears Explosion

COLUMBIA, South Carolina — A dangerous concentration of uranium has built up in a South Carolina incinerator owned by Westinghouse Electric Company for the seventh time in the past eight years. The NRC has fined Westinghouse \$24,000 for negligence. Enough uranium has collected that it significantly increases the likelihood of a "criticality event" an uncontrolled fission explosion. The incinerator burns

radioactively-contaminated waste. Westinghouse blamed the problem on its workers. — Union of Concerned Scientists, *Bulletin Wire News*, Aug. 13, 2004

Truck Carrying Radioactive Tools Crashes

PEEKSKILL, New York — A truck carrying radioactively contaminated tools to the Indian Point-2 reactor smashed into a highway overpass Aug. 13, prompting a massive emergency response and the evacuation of 100 residents. Police closed off a three-mile stretch of highway until after they announced there had been no radiation leak. Reactor maintenance and refueling happens infrequently enough that operators rent equipment and tools from outside vendors. The tools — which become contaminated from exposure to waste reactor fuel — are shuttled between facilities in secure containers. The contaminated tools were being carried on a flatbed truck. The accident, which happened less than two miles from Indian Point, occurred when the driver failed to pass under the arched Main Street bridge in the left lane, as posted signs require. The left lane has more clearance space than the right lane. Marilyn Elie, head of Westchester Citizens' Awareness Network, told the *Journal News*, "The industry says it can transport more than 1,000 shipments of high-level radioactive waste safely, and here they can't transport even one shipment of low-level radioactive tools." Ms. Elie asked, "What is it going to take before people understand we have to close this [Indian Point] plant down?" — *The White Plains (New York) Journal News*, Aug. 14, 2002

More Irradiated Fuel Rods Gone Missing

KING SALMON, Calif. — Pacific Gas and Electric is trying to trace the movements of three 18-inch segments of an irradiated waste fuel rod, missing from the shutdown Humboldt Bay reactor since 1968. The highly radioactive waste was cut from a fuel rod for an inspection that never took place. PG&E's advertising department assures the public that the rods have not been stolen.

The missing waste could be in any number of places: a nearby cooling pond; the Battelle Memorial Institute in Columbus, Ohio (which denies having them); General Electric's Vallecitos Nuclear Center in Livermore, Calif.; Nuclear Fuel Services in West Valley, New York (records from 1968 have been destroyed); a disposal site at Beatty, Nevada; Hanford in Richland, Wash.; the dump at Barnwell, S.C.; or the Humboldt Bay cooling pond itself.

Employees are reading voluminous records, nuclear waste shipping documents and interviewing former reactor personnel in their search for the waste.

Once the 390 fuel assemblies submerged in the Humboldt Bay's cooling pond are removed, searching will be made easier.

Meanwhile, a reactor in Connecticut has never found several full-size rods lost since the late 1990s, and in April this year a reactor in Vermont warned that fuel was missing, only to admit later that it was in the cooling pond.

— *The (Eureka, Calif.) Times-Standard*, Aug. 22, & *PRNewswire-FirstCall* Aug. 17, 2004

Big Utility Wins \$300 Million High-level Waste Suit

NEW YORK — Nuclear utilities signed onto the 1982 Nuclear Waste Policy Act in part because it promised that by Jan. 31, 1998 the federal government would take possession of and assume legal liability for the industry's waste fuel. There is still no permanent dump site.

Exelon Corp. of Illinois, the country's largest reactor operator — which sued the DOE over its failure to open the dump on time — will initially receive a check for \$80 million to pay for storage of its waste fuel. The fuel rods are held in dry casks on concrete pads outside of Exelon's Peach Bottom Station (21 casks), Dresden in Illinois (21 casks) and Oyster Creek in New Jersey (eight casks). Exelon expects receipts to total \$300 million by 2010.

Nuclear reactor operators and their customers have paid \$24 billion into a federal dump site fund. About \$7 billion has been spent to test and prepare Yucca Mountain, Nevada to hold 77,000 tons of the accumulating waste. Exelon will continue to pay into the fund as well as receive the court-ordered reimbursement for dry cask storage.

— *York (Pennsylvania) Daily Record*, Aug. 18, 2004

Dimona's Pollution Causing Sterility & Cancer?

NEGEV DESERT, Israel — Israel's Dimona nuclear weapons production site and radioactive waste storage area is being blamed for sterility and an increase in cancer among downwinders.

Some reports say the reactor building is cracked and leaking radioactivity. Other reports say buried radioactive

waste is the problem. An investigative report on Israeli Television in 1996 claimed that tons of radioactive waste are stored in 30-year-old containers buried above a large aquifer under the Negev Desert. At that time, the Agriculture Ministry said the water wells near the Dimona facility had already been contaminated for seven years. A lawsuit has been filed by survivors of five Dimona workers who, the relatives claim, died of radiation-induced cancers. Another report by Israeli TV revealed two years ago that Dimona's reactor wastes are buried in areas east of the Al Bureij refugee camp and the town of Deir El Balah. Israel disallows inspections of its Dimona complex by the International Atomic Energy Agency (IAEA).

On August 2, 1992, radioactive waste water leaked into a national park and Israeli authorities covered up the incident and forbid an investigation. Parts of the park are still closed. Egypt is monitoring radiation levels along the Israeli-Egyptian border in southern Israel. The Jordanian newspaper *Al-Rai* reported Aug. 29 that Jordan's Foreign Ministry has asked the IAEA to send experts and equipment to "determine whether there is a correlation between radiation from Dimona and the appearance of unusual diseases in the area." Israel's nuclear arsenal is estimated to hold about 200 bombs. — *Haaretz Daily*, Aug. 31, 2004; *Nucleonics Week*, May 6, 1993; *Jewish Telegraphic Agency*, April 12, 1996

Shoot-First U.S. Foreign Policy Spreading Fast

TEHRAN, Iran — Iran and Japan have taken a page from U.S. foreign policy and warned that they have the right to conduct unprovoked attacks, so-called pre-emptive strikes, in order to prevent attacks against them.

"We will not sit to wait for what others will do to us," said Iranian Defense Minister Admiral Ali Shamkhani on Al Jazeera television Aug. 18, adding that Iran's Shahab-3 missiles have the range to strike Israel's Dimona reactor complex. "Preventive operations which the Americans talk about are not their monopoly. Any nation, if it feels threatened, can resort to that," Shamkhani said.

Gen. Muhammad Baqer Zolqadr, commander of Iran's Revolutionary Guards, threatened the same week to bomb the Dimona reactor if Israel bombed Iran's nuclear sites. "If Israel fires a missile into the Bushehr nuclear power plant, it has to say good-bye forever to its Dimona nuclear facility, where it produces and stockpiles nuclear weapons," Zolqadr said.

Likewise in Japan, Defense Agency Director Gen. Shigeru Ishiba made identical threats in February 2003, warning that his country would be entitled to attack North Korea if it were clear that the North Koreans were about to launch an attack on Japan. Japanese troops have recently been transferred from the north to western Japan close to the Korean Peninsula. The country is under pressure from right wing Japanese and U.S. politicians to rescind those sections of its constitution that keep Japan officially pacifist.

Given Japan's aggression in World War II, it's U.S.-imposed postwar constitution renounces "war as a sovereign right of the nation and the threat or use of force as means of settling international disputes," and says any war-making power "will never be maintained." — *New York Times*, Aug. 20, & *Minneapolis Star Tribune*, Aug. 18, 2004

Bomb Test Fallout Haunting Britain's PM

EDINBURGH, Scotland — Prime Minister Tony Blair's health was probably compromised by childhood exposure to radioactive fallout from an atom bomb test in Australia.

Mr. Blair was three and living in Adelaide, South Australia, when the British detonated an atom bomb in the desert Oct. 11, 1956, the British magazine *The Bulletin* said.

"Adelaide was plastered with radioactive fallout from October 11 to 16, 1956," British toxicologist Richard van Steenis told the magazine. "As a youngster in Adelaide drinking local milk, Tony Blair is very likely to be at risk of bone cancer himself." Dr. van Steenis said that the death of Blair's mother, Hazel, from thyroid cancer 19 years after the blast could have been caused by exposure to fallout.

A Blair spokeswoman dismissed the theory, but Dr. van Steenis claimed that Blair would not acknowledge the impact of the bomb testing because his government could be sued by former servicemen involved in the bomb tests. "He has never denied that radioactive fallout in Australia was the cause of his mother's death," van Steenis told *The Bulletin*. "But he won't acknowledge it because to do so would strengthen the legal case against his government for the compensation entitlements of British and Australian servicemen involved in the British atomic testing program."

— *The (Edinburgh, Scotland) Scotsman*, Aug. 31, 2004

Chernobyl's Unending Legacy of Contamination

CARDIFF, Wales — Eighteen years after the world's worst radiation accident at the Chernobyl power reactor, 359 Welsh farmers are still unable to sell their sheep without testing them for radioactive contamination. The sheep in question are raised on farms in a 53-square-mile area where fallout from the radiation accident in Ukraine was especially heavy. According to the May 17 *Western Mail*, one study suggests that it will take 50 years before all restrictions on agricultural items are lifted in northern Europe. Indeed, cesium-137, the most dangerous of the isotopes spewed by Chernobyl's two



Photo by Eddy Risch

Wimbledon's surprise winner Maria Sharapova beat the odds, not just on the court but as a child of Chernobyl.



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explosions and its two-week long fire, is deadly in the environment for up to 300 years. — *Bulletin of the Atomic Scientists*, Sept/Oct., & Three Mile Island Alert, Aug. 17, 2004

Dirty Scanners To Be Used Against Dirty Bombs?

LIVERMORE, Calif. — Scientists at Lawrence Livermore National Laboratory are developing a radiation-based detector that may be used to scan millions of the large shipping containers from overseas.

The Department of Homeland Security is underwriting the project to the tune of \$4 million this year. The zapping, reports Key Davidson in the *San Francisco Chronicle*, June 14, would involve a neutron beam fired through each container as it moved along a conveyor belt. The neutrons would split the atoms of any concealed uranium or plutonium, which would then emit its own radiation, which the monitors would pick up. A few as-yet-unsolved problems include: 1) stowaways, who sometimes hide in the containers and who could be lethally contaminated; and 2) products being shipped in the scanned containers — as well as the containers themselves. Some folks at Livermore think imported foodstuffs and items like delicate wines might be shunned by consumers. Another problem created by the plan is that it makes highly radioactive neutron sources — traveling on highways and parked in dozens of port cities — vulnerable to terrorists. — *Bulletin of the Atomic Scientists*, Sept./Oct. 2004

Plutonium Jitters at Los Alamos

WASHINGTON — The likelihood of plutonium accidents and workers' radiation exposure has increased over the last 10 years, as a program to "stabilize" the deadly fissionable material at the Los Alamos National Laboratory in New Mexico has fallen behind schedule, a DOE audit has found. The project was supposed to have been finished two years ago. *The New Mexican* of Santa Fe has reported that 241 cases of radioactive contamination occurred at the lab between 1993 and 1995 during production of plutonium batteries (Radioactive thermal generators, or RTGs) for NASA. The paper also found that denials by NASA and the DOE in February of 1996 concerning workers' contamination were cover-ups. — *St. Paul Pioneer Press*, Aug. 20, 2004; *Denver Post*, July 30, 1996

New Three Mile Island Health Study

HARRISBURG, Penn. — Researcher Joseph Mangano of the New York-based Radiation and Public Health Project, author of *Low-Level Radiation and Immune System Damage* (1999), has studied infant death rates from the period just prior to the Three Mile Island (TMI) accident and for two years following.

In a long article in the *Bulletin of the Atomic Scientists*, Mangano reminds readers, "The developing fetus and infant are much more susceptible than adults to the effects of ionizing radiation." In Dauphin County, where TMI is located, the 1979 death rate among infants less than one year represented a 28% increase over that of 1978. Among infants under one month, the death rate increased by 54%.

During the first two quarters of 1978, the neonatal mortality rate within a 10-mile radius of TMI was 8.6 and 7.6 per 1,000 live births, respectively. During the first quarter of 1979, after start-up of TMI's doomed Unit 2, the rate jumped to 17.2; it increased to 19.3 in the quarter following the accident, and returned to 7.8 and 9.3, respectively, in the last two quarters of 1979. Mangano says that between 1979 and 1980, the infant death rate rose in 13 of 19 Pennsylvania counties downwind of the melted reactor.

As far back as March 1982, the secretary of the Pennsylvania Dept. of Health, Gordon MacLeod, reported similar findings in *The American Journal of Public Health*. In view of the recent findings, TMI Alert, a watchdog group in Harrisburg, Penn., has now called upon Pennsylvania's Health Dept. to objectively reexamine the adverse health effects of the accident. — *Three Mile Island Alert*, Aug. 17, & *Bulletin of the Atomic Scientists*, Sept./Oct. 2004

Pakistani Bomb Aid to Iran: Failure or Fraud?

GENEVA — The International Atomic Energy Agency (IAEA) has found that Pakistan's military dictatorship provided Iran

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with sophisticated centrifuges crucial to making nuclear weapons. The machines were delivered as early as 1995, while U.S. spies failed to detect or winked at the transfers. In 1998, Pakistan set off its first nuclear bomb test. U.S. intelligence officials told the *New York Times* that the IAEA finding is "a fairly major failure," because at the time, "we were watching Iran and Pakistan quite closely." The centrifuges are known to have come from the laboratories of Abdul Qadeer Khan, the Pakistani H-bomb scientist who was caught secretly selling bomb-making equipment to two other supposed threats, Libya and North Korea. — *New York Times*, Sept. 2, 2004

Steep Thyroid Cancer Increase Near Chernobyl

BELARUS — A new study reported in the June edition of the *International Journal of Epidemiology* documents a dramatic increase in thyroid cancers since the 1986 Chernobyl disaster in the Ukraine. According to the study, rates of thyroid cancer have increased 12 fold among women in Belarus, a neighboring country to Ukraine. Among women under the age of 14 in higher risk areas of the republic, the rate has increased almost 30 fold. Additionally, the study points out that children two years and younger at the time of the accident were even more vulnerable, and their cancers tended to be more invasive and expanded beyond the thyroid gland. The authors, from the Roswell Park Cancer institute in New York and the Institute of Oncology in Minsk, Russia, used data from the Belarus national cancer registry and trends in average annual incidence of thyroid cancer. They noted that, "The magnitude of increases observed is remarkable given the relatively limited time interval since Chernobyl." — *British Medical Journal*, June 12, & Nuclear Policy Research Institute, June 11, 2004

Resources

- **Bulletin of the Atomic Scientists*, 6042 South Kimbark, Chicago, IL 60637; Web: thebulletin.org
- *Committee Examining Radiation Risks from Internal Emitters (British), c/o Department for Environment, Food and Rural Affairs, Rm 541 Nobel House, 17 Smith Square, London, SW1P 3JR, (020) 7238 5587; Email: secretariat@cerrie.org; Web: cerrie.org/main.html
- *Nuclear Information and Resource Service, 1424 16th St. NW, Suite 601, Washington, DC 20036; (202) 328-0002.
- *Nuclear Policy Research Institute (see ad this page).
- *Project Censored, Email: censored@sonoma.edu; Web: projectcensored.org; (707) 664-2500.
- *Public Citizen, 1600 20th St. NW; Washington, DC 20009; (202) 588-7742; Web: citizen.org.
- *Radiation and Public Health Project, 786 Carroll St. Brooklyn, NY 11215; (718) 587-9825; Email: odiejoe@aol.com; Web: radiation.com.
- *Three Mile Island Alert, 315 Peffer ST., Harrisburg, PA 17102; (717) 233-7897; Email: tmialert@home.com; Web: tmia.com.
- *Tri-Valley Communities Against a Radioactive Environment, 2582 Old 1st St., Livermore, CA 94551; Phone: (925) 443-7148; Web: trivalleycares.org
- *Union of Concerned Scientists, 2 Brattle Square Cambridge, MA 02238; (617) 547-5552; Web: ucsusa.org
- *Uranium Medical Research Center, 3430 Connecticut Ave., #11854, Washington, DC 20008; (905) 713-1151; Email: info@umrc.net; Web: www.umrc.net

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1925 K Street NW, Suite 210
Washington, DC 20006, Phone: 202-822-9800
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Thank you

RESIST, Inc.

for the \$1,500 grant awarded to Nukewatch in August. RESIST began in 1967 with a "call to resist illegitimate authority," in support of draft resistance and in opposition to the Vietnam War. RESIST has continued to fund movements for social, economic and environmental justice, including civil rights, human rights, reproductive rights, women's rights, prisoners' rights, lesbian/gay/bisexual/transgender rights, media reform and cultural diversity.

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Nuclear Power: Not Clean, Green or Safe

By Helen Caldicott

While Vice President Dick Cheney is actively promoting nuclear power as a significant plank in his energy plan, he claims that nuclear power is "a safe, clean and very plentiful energy source."

The Nuclear Energy Institute, the policy organization of the nuclear energy and technologies industries, is currently running an energetic campaign for the revivification of nuclear power. Ubiquitous TV and radio ads carry the admonition that "Kids today are part of the most energy-intensive generation in history. They demand lots of clean electricity. And they deserve clean air."

Also, a consortium of 10 U.S. utilities has requested funding from the federal government for the construction of new reactors based on a European design, and they hope to receive government approval by 2010. This is a major policy change since no new nuclear reactors have been ordered in the United States since 1974.

Nevertheless, the claims of Mr. Cheney and the nuclear industry are false. According to data from the U.S. Energy Department (DOE), the production of nuclear power significantly contributes both to global warming and ozone depletion.

The enrichment of uranium fuel for nuclear power uses 93% of the refrigerant chlorofluorocarbon (CFC) gas made annually in the United States. The global production of CFC is banned under the Montreal Protocol because it is a potent destroyer of ozone in the stratosphere, which protects us from the carcinogenic effects of solar ultraviolet light. The ozone layer is now so thin that the population in Australia is currently experiencing one of the highest incidences of skin cancer in the world.

CFC compounds are also potent global warming agents 10,000 to 20,000 times more efficient heat trappers than carbon dioxide, which itself is responsible for 50 percent of the global warming phenomenon.

But nuclear power also contributes significantly to global carbon dioxide production. Huge quantities of fossil fuel are expended for the

"front end" of the nuclear fuel cycle — to mine, mill and enrich the uranium fuel and to construct massive nuclear reactor buildings and their cooling towers.

Uranium enrichment is a particularly energy intensive process which uses electricity generated from huge coal-fired plants. Estimates of carbon dioxide production related to nuclear power are available from DOE for the "front end" of the nuclear fuel cycle, but prospective estimates for the "back end" of the cycle have yet to be calculated.

Tens of thousands of tons of intensely hot radioactive fuel rods must continuously be cooled for decades in large pools of circulating water and these rods must then be carefully transported by road and rail and isolated from the environment in remote storage facilities in the United States. The radioactive reactor building must also be decommissioned after 40 years of operation, taken apart by remote control and similarly transported long distances and stored. Fully 95% of U.S. high level waste — waste that is intensely radioactive — has been generated by nuclear power thus far.

This nuclear waste must then be guarded, protected and isolated from the environment for tens of thousands of years — a physical and scientific impossibility. Biologically dangerous radioactive elements such as strontium-90, cesium-137 and plutonium will seep and leak into water tables and become very concentrated in food chains for the rest of time, inevitably increasing the incidence of childhood cancer, genetic diseases and congenital malformations for this and future generations.

Conclusion: Nuclear power is neither clean, green nor safe. It is the most biologically dangerous method to boil water to generate steam for the production of electricity.

Helen Caldicott, a pediatrician, is president of the Nuclear Policy Research Institute and author of The New Nuclear Danger: George Bush's Military Industrial Complex (The New Press, 2002).

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Nukewatch Special Report

Navy Calls it Quits, Announces Shutdown of Project ELF

By John LaForge, Nukewatch staff

On Sept. 17, 2004, three decades of anti-nuclear activism suddenly came to an end when the Office of Space and Navy Warfare Systems Command announced that on Sept. 30 it will shut down and proceed to permanently dismantle its two extremely low frequency (ELF) submarine transmitters — one near Clam Lake, Wis., and the other near Republic, Michigan. The Navy said in a press release the twin transmitters are “outdated and no longer needed.” The shutdown notice came as a complete surprise, since two years ago Navy PR representative Richard Williamson said in Wisconsin that the system would be necessary for another 25 years.

Campaigners with the Coalition to Stop Project ELF held an all-day public gathering on Sept. 30 at the Clam Lake, Wis. site to observe the shut down. The Nukewatch Winter 2004-2005 *Pathfinder* will contain coverage of the event.

For more than 30 years, since it first began test operations in 1968, a wide range of peace and environmental organizations, the general public, a Federal District Court judge, and even the Wisconsin and Michigan Congressional delegations have worked to prevent, restrict and finally to cancel the one-way “bell ringer” as the Navy called it.

Since 1991 and the collapse of the USSR, 639 trespass citations have been issued to activists who converged on the site 58 times over 13 years. Over 40 nuclear weapons resisters who refused to pay court-ordered fines have been incarcerated in county jails or — since the charges went federal in 2001 — in federal prisons. Five times since 1984, ELF’s antenna poles were cut down by Plowshares disarmament activists all of whom endured long prison sentences. (In one hard-won exception in 1996, although they were convicted and sentenced to prison for damage to property, Donna Howard and Tom Hastings were found not guilty of sabotage when an Ashland County jury found that the Tridents can’t be used defensively but only in an offensive war-waging manner.)

Altogether, more than nine years of incarceration have been served by nuclear resisters who acted against ELF. Even now, another 20 trespass defendants are facing trial in Madison for line-crossing actions at the site May 16 and August 8. An assistant U.S. attorney in Madison said Sept. 20 he didn’t see why the prosecutions should not go ahead.

Why all the protest? Because the system was built to wage suicidal atomic violence with the Trident submarine’s H-bombs. The Trident’s weapons are 38-times the power of the bomb used on Hiroshima in 1945. Since 140,000 people were incinerated at Hiroshima, one Trident’s warheads can potentially murder more than 5 million people at one blow. Never mind that the Navy’s 14 Tridents each carrying 24 missiles, and that each missile carries up to eight of these unspeakably terrifying weapons.

What the ELF transmitter did — sending signals deep into the ocean — was allow the Tridents to get up close to the Target-of-the-Day, be it Cuba, Korea, Iran, Libya or Iraq, to stay deep enough to elude detection and still receive orders. The object was to reduce launch-to-target flight time and thereby increase missile accuracy. The only reason to prefer an accurate hit with a mountain-busting 475-kiloton warhead (the Hiroshima bomb was 12.5 kilotons) is to rip off a sneak attack or “first-strike” against missile sites, bombers or command centers. Never mind that this program was the polar opposite of the “deterrence” it was said to be a part of, and that a first-strike is exactly what deterrence is supposed to prevent.

Navy reasons for shutdown are 23 years old

Although anti-war and anti-nuclear weapons activists are celebrating the successful end of a long-term campaign against this nuclear war “trigger,” the announcement raises more questions than it answers.

The rationale presented by the Navy in its shutdown notice is suspect. “Improvements in communications technology and the changing requirements of today’s Navy” make ELF obsolete, the Navy said. This is something opponents have said for over 25 years. The Navy said communications with the subs will now be done with “12 very low frequency (VLF) transmitters located around the world.”

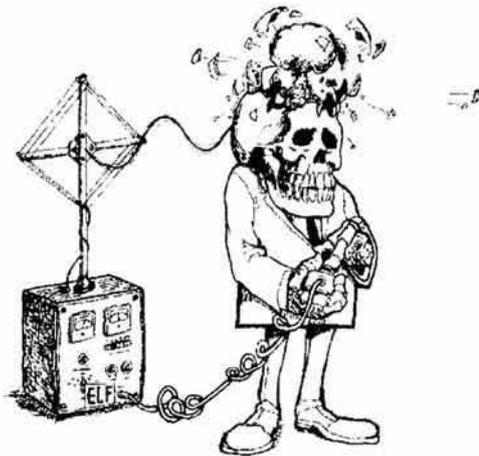
But VLF is no improvement in technology and has been around since the 1970s.

In his 1983 book *First Strike*, Bob Aldridge notes that VLF stations were set around the world in a “Fleet Broadcasting System” for submarine communications” even then. Flying broadcasts to subs were also done with planes called *Tacamo* that reeled out a 5-1/2-mile long trailing antenna for VLF communications. In 1983 there were 18 of these planes and two of them were airborne all the time, one over the Atlantic and one over the Pacific.

The “changing requirements of today’s Navy” are nothing new either. The collapse of the cold war and the dissolution of the USSR eliminated the Navy’s “deterrence” cover story more than 14 years ago.

Indeed, long before the fall of the Berlin Wall, Navy admirals testified that ELF was unnecessary. In 1978, Admiral Hyman G. Rickover said in *National Defense* magazine that despite the 1,500 sixty-day patrols that had been carried out by the 41 *Polaris* [and *Poseidon*] submarines since 1960, the Soviet Union had not detected even one of them.

In 1981, Admiral Thomas B. Hayward, then Chief of Naval Operations, testified to the House Armed Services Committee that “no threat has emerged that causes us concern about our SSBN [nuclear-powered ballistic missile submarine] force. And therefore it is not essential to press on with ELF at the present time.”



Navy Shuts Down Project ELF



(continued from Page 1)

In that same year, then Navy Secretary John F. Lehman recommended to Pentagon chief Casper Weinberger that ELF be shelved.

Rear Admiral Raymond G. Jones Jr., then Deputy Assistant Chief of Naval Operations for Undersea Warfare, testified on June 7, 1991 that, "the Soviets do not currently threaten U.S. SSBNs [ballistic missile subs] in the open ocean, nor do we see indications of a future threat."

More recently, in January 1993, then Pentagon chief Dick Cheney said, "The ability of the SSBN force to remain virtually undetected at sea makes it the most survivable and enduring element of the U.S. nuclear force structure."

None of this official nay saying stopped the system for long. The threat that the ELF transmitter's electromagnetic radiation might cause brain cancers, leukemia, reproductive disorders and other illnesses did slow the system down for a while.

In 1984, Federal Judge Barbara Crabb ruled against the Navy in *Wisconsin v. Weinberger*. In her 72-page injunction which halted construction of the ELF system, Crabb said the Navy was in violation of the National Environmental Policy Act (NEPA) because it ignored studies showing human health hazards from ELF's electromagnetic radiation. The legal victory was the culmination of years of work by the original Stop Project ELF. But Crabb's injunction was vacated on appeal to the 7th U.S. Circuit Court of Appeals which said the supposed Soviet threat was more tangible than the threat of cancer from ELF waves. A blistering dissenting opinion reminded the majority that the NEPA has no national

security exemption, so the majority opinion itself violated the NEPA. The appeals court order allowed ELF to be built without ever answering the health questions raised by Judge Crabb's injunction.

John Stauber co-founded the original Stop Project ELF which helped convince Wisconsin's attorney general to sue the Navy under NEPA. The Appeals Court reversal was a heavy hit. "We had essentially exhausted all legal remedies," he told the *Milwaukee Journal Sentinel*. "That's why it became such a focus for nonviolent protest, and many people have gone to jail for quite a while over the last 20 years."

Bonnie Urfer, senior staff person and co-director of Nukewatch said, "I feel relief for the people of the area and the local environment, knowing that ELF's million-point-three watts of electricity will no longer be jolted into the ground, shocking the aquatic life and increasing the threat of leukemia and other cancers."

The Navy might still be afraid of liability over ELF's electromagnetic radiation and its power to promote or cause health problems around the transmitter. It may be worried about the Lac Courte Oreilles Tribe's investigation into health concerns which began in Hayward, Wisconsin two years ago.

John Heid, of the anti-war Anathoth Community near Luck, Wisc., who along with me served 60 days in Ashland County jail in 2001, said of the announcement, "Today ELF, tomorrow Trident."

Taking the long view, Jane Hosking, also at Anathoth, who was jailed for 60 days in 1998 and again in 2003, said, "We still have a few issues to work out with U.S. nuclear weapon's policy — like disarmament and clean-up."

It would also be interesting to learn the Navy's actual reasons for stopping Project ELF.

Photos, clockwise from above left:

On Mothers' Day 1997, about 100 activists converging on the ELF compound passed under the antenna at the rear entrance, 16 were later arrested for climbing inside.

Martin Luther King Jr. Holiday, 1999, saw a snow blockade of the ELF site's outer gate.

An undated sign-painting action predicted the recent announcement by the Navy to cease transmission and dismantle the system.



A Chronicle of Resistance



Trespass citations issued at resistance actions at the U.S. Navy's Project ELF near Clam Lake, Wisconsin since 1991.

<u>DATE</u>	<u>NUMBER OF CITATIONS</u>	<u>THEME</u>
1991		
1. Nov. 17	5	Winter of Our Dissidence I
2. Dec. 28	6	Feast of Holy Innocents
1992		
3. Feb. 2	17	Winter of Our Dissidence II
4. March 1	4	
5. April 7	1	
6. May 10	34	Mothers' Day
7. June	(?)	
8. July 4	16	Independence from the Bomb
9. Aug.	2	Nagasaki Tribute
10. Oct. 4		Gandhi's Birthday
11. Nov. 1	6	Vote with Your Feet
1993		
12. Feb. 6	8	Winter of Our Dissidence III
13. May 9	16	Mothers' Day, Spring Over ELF
14. Aug.	2	Hiroshima & Nagasaki Tribute
15. Sept. 26	12	
1994		
16. Jan. 21	11	Martin Luther King Holiday
17. May 8	28	Mothers' Day
18. Aug. 6-9	45	Hiroshima & Nagasaki Tribute
19. Oct. 2	16	Gandhi's Birthday
1995		
20. Jan. 15	14	Martin Luther King Holiday
21. May 14	6	Mothers' Day
22. Aug. 6-9	38	Hiroshima & Nagasaki Tribute
23. Oct. 22	11	Gandhi's Birthday
1996		
24. Jan. 14	16	Martin Luther King Holiday
25. April 22	2	Laurentian Shield disarmament, 3 poles cut down
26. May 13	12	Mothers' Day
27. Aug. 3-10	3	Hiroshima & Nagasaki Tribute
28. Dec. 3	4	Laurentian Shield sentencing
1997		
29. Jan. 19	12	Martin Luther King Holiday
30. May 11	16	Mothers' Day

31. Aug. 10	4	Hiroshima & Nagasaki Tribute, Tromp Trident Trek, walk from Ashland to ELF
32. Oct.	5	Gandhi's Birthday
1998		
33. Jan. 18	21	Citizens' Inspection
34. Feb. 22	4	ELF tie-in to Persian Gulf bombing
35. May 10	14	Mothers' Day, 30 Years of Protest & Resistance
36. Aug. 9	10	Nagasaki Tribute; Tromp Trident Trek II, peace walk from Ashland to ELF
37. Oct. 4	4	Gandhi's & St. Francis' Birthday
1999		
38. Jan. 17	15	Martin Luther King Holiday
39. Apr. 18	5	Stop ELF use against Yugoslavia
40. Apr. 20	3	ELF's annual inspection by Navy brass
41. May 9	10	Mothers' Day, Moms Not Bombs
42. Aug. 8	12	Nagasaki Tribute, Tromp Trident Trek III, peace walk from Ashland to ELF
43. Oct. 10	8	Gandhi's & St. Francis' Birthday
2000		
44. Jan. 23	15	Martin Luther King Holiday
45. May 14	8	Mothers' Day, Don't Shock Your Mother
46. June 24	2	Silence Trident disarmament, 3 poles cut down
47. June 25	2	Silence Trident support action
48. July 4	2	Silence Trident support action
49. Oct.	2	Gandhi's & St. Francis' Birthday
50. Jan.	8	Martin Luther King Holiday
2001		
51. May	11	Mothers' Day
52. Oct. 7	3	Gandhi's & St. Francis' Birthday, same day U.S. began bombing Kabul and other Afghan cities
2002		
53. Jan. 20	6	Martin Luther King Holiday
54. May 11	6	Mothers' Day
55. Aug. 9	7	57th anniversary of Nagasaki bombing
2003		
56. May 10	10	Mothers' Day
57. Aug. 9	12	58th anniversary of Nagasaki bombing with Citizen's Inspection
2004		
58. May 16	9	Abolish Nuclear Weapons
59. Aug. 8	11	59th anniversary of Hiroshima, Nuclear War, What Is It Good For!?

Total Citations 592

**Sept. 17:
Navy announces it will cease transmissions on September 30, 2004, then spend three years dismantling the system!**

NOTE: In September 2001, the Ashland County Wisconsin District Attorney gave up prosecuting alleged ELF site trespassers. The U.S. Attorney for the Western District of Wisconsin in Madison began prosecuting.

Trident Submarines Are Killing Machines Unparalleled In Human History.

The Hiroshima bomb, at 12.5 kilotons, killed 140,000 people.

Today's Trident II (D-5) missile warhead has 475 kilotons. This is equal to 38 *Hiroshima bombs* (12.5 times 38 = 475).

There are eight 475 kiloton warheads on each D-5 missile, about 3,800 kilotons.

With 3,800 kilotons, each missile carries the equivalent of 304 Hiroshima bombs.

The D-5's 304 Hiroshimas (times 140,000) means a single D-5 Trident missile with eight warheads can potentially kill 42,560,000 people.

Each sub can carry 24 missiles so a single Trident submarine, with 24 D-5 missiles (192 warheads) is equal to 7,296 Hiroshimas or the death of 1,021,440,000 (one billion) people.

The United States has 14 Trident submarines which today threaten more than 14,300,160,000 (14 billion) people -- 2 1/3 times the earth's population.



Activists blockading the gate of Project ELF in the spring of 2002

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