PLUTONIUM WAITS

PLUTONIUM FUTURES and the South

by Glenn Carroll

THE ATOMIC COLD WAR between the U.S. and Russia ended in 1990, and now the fate of plutonium, the essential ingredient in nuclear bombs, has come to rest. Differing factions hotly compete to establish the future of 50 tons, roughly one half, of U.S. plutonium stocks: to immobilize plutonium as a nuclear waste; to manufacture a new and experimental type of nuclear fuel called MOX; or to manufacture more nuclear bombs. Vested interests rush to advance their favored program before the winds of politics change — but plutonium waits.

In South Carolina, in New Mexico, in Washington, California and Texas, in warehouses, in silos and submarines — plutonium waits. With a half-life of 24,600 years, and a hazardous life ten times that long, plutonium can afford to wait.

THE "NATURE" OF PLUTONIUM IS UNIQUE — literally the brainchild of human ingenuity — plutonium does not occur in nature. As such, plutonium has no "home" from which it came or to which it can be returned, and it poses the gravest of challenges to human society.

Plutonium is a "side effect" of nuclear power in a nuclear reactor. Uranium fission (nuclear power) was developed for only one purpose — to create plutonium for weapons of mass destruction — The Bomb. The U.S. made about 100 tons of plutonium; Russia about 180 tons. When you contemplate that an atom bomb can be fashioned from as little as 15 pounds of plutonium in a home basement — it hits home that plutonium security is indeed a serious, even urgent, matter.

It was an afterthought to make electricity from the great heat generated in the uranium fission process. It was exported nuclear technology for energy that gave India The Bomb; gave Pakistan The Bomb; gave Israel The Bomb; gave North Korea, Iran, Libya — you get the picture!

PLUTONIUM'S TOXICITY IS INFAMOUS — one particle lodged in a lung sentences its host to lung cancer. It is said that if one pound of plutonium could be evenly distributed it would cause lung cancer in every human on earth. With a half-life

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of over 24 millennia it challenges the limits of human imagination to grasp the environmental risk posed to Earth’s inhabitants by hundreds of thousands of pounds of plutonium.

Plutonium poses a tremendous security threat because of the ease with which, once obtained, it can be made into a nuclear bomb. Yet, despite its capacity for exploding with a force that can destroy entire cities, or cause lung cancer with one particle, plutonium is a “low-activity” element that can be safely carried in the coat pocket of a would-be thief. Plutonium is toxic if ingested, but exposure to plutonium is not instantaneously lethal. It is plutonium’s vulnerability to theft or diversion which imparts the real urgency to provide permanent security for plutonium.

There are three proposals for U.S. plutonium which seek to establish the future use of plutonium stocks not currently deployed in our vast arsenal of nuclear missiles. Savannah River Site (SRS) on Georgia’s border is included in every plutonium scenario.

**OPTION #1: PLUTONIUM IMMOBILIZATION**

Plutonium immobilization is the option advocated by environmentalists. In plutonium immobilization, nuclear waste originally generated in manufacturing plutonium would be used as a “high-radioactivity” barrier to protect plutonium from theft or use in weapons.

At the end of the Cold War — the U.S. and Russia both faced the huge environmental fallout of decades of nuclear waste from the arms race. SRS, for instance, has 35,000,000 gallons of high-level waste — industrial solvents contaminated with extremely hot radioactive elements. The high-level waste is the result of melting nuclear fuel rods, in which the uranium was fissioned into plutonium, in order to extract the plutonium for atom bombs. The high-level waste tanks at SRS were not designed for permanent storage and are beginning to leak and threaten the most significant freshwater aquifer in North America. A factory has been built to convert the highly radioactive liquid waste into solid glass logs. These high-level waste logs are still lethally hot, but immo-
bilize the waste so it no longer threatens to migrate into water supplies. Plutonium may be mixed with the hot waste in the glass-making process which would immobilize it from entering the environment while placing a deadly high-radiation barrier to protect the plutonium from theft or future use as nuclear weapons.

Understandably, the nuclear industry which made such strenuous efforts to manufacture plutonium in the first place has a deep resistance to categorizing plutonium as a waste and treating it as such. Nevertheless, plutonium immobilization in waste is a noble concept and is the best disposition track for nearly 10 tons of "orphan" plutonium not suitable for use as reactor fuel or nuclear weapons already stranded at SRS near Augusta, GA. Environmentalists see plutonium immobilization as "win-win-win" because it will stabilize dangerous nuclear waste while securing deadly plutonium from the environment and from use as weapons. Plutonium immobilization is a humanitarian mission which will utilize the experienced workforce at SRS.

OPTION #2: PLUTONIUM MOX FUEL

In 1996, the U.S. entered into an agreement with Russia to "dispose" of a sizeable amount of surplus plutonium by remanufacturing it into an experimental type of reactor fuel and using it in reactors where a high-radiation matrix would be created around the low-activity weapons plutonium. SRS was selected as the U.S. site to manufacture the fuel. GANE has sustained a legal challenge to the MOX factory since 2001 and the factory remains stalled in controversy. See story p. 7.

Environmentalists oppose MOX for several reasons. First, the plutonium must be dissolved in industrial solvents to "purify" it before it can be made into MOX. This process would create a significant amount of hazardous industrial solvents contaminated with dangerous radioactive elements which would worsen the Cold War nuclear waste hangover at SRS.

Second, MOX is much more expensive than plutonium immobilization. Third, the plutonium must be ground back in to a

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HALF LIFE
LIVING WITH THE EFFECTS OF NUCLEAR WASTE

Robert Knoth, 2000, silver gelatin print
The caption on this grim confrontation with the effects of plutonium processing on human life: "The museum of embryology has a morbid-looking collection of embryos and foetuses, life that never came into being."

WHEN THE G-8 SUMMIT MET under heavy guard on Georgia’s toney Sea Island in the summer of 2004, Greenpeace and GANE brought a powerful photo exhibit to Savannah to highlight the dangers of plutonium processing.

Photographer Robert Knoth’s images create a haunting record of the health and social effects of plutonium processing on the people who live near the notorious Russian plutonium facility Mayak. After five decades of environmental devastation from Russia’s primary nuclear weapons factory, Mayak is currently proposed to be the site of a new plutonium MOX fuel factory.

Half Life was also exhibited in Bluffton, SC, and South Carolina State University at Orangeburg. The provocative exhibit became a forum for public education and discussion about a similar plutonium processing facility in the United States, Savannah River Site. SRS is where the U.S. plutonium MOX fuel factory is proposed to be built.

The G-8 Summit’s trend for the last several years has been to ignore the plutonium and MOX issue. Without G-8 support and funding for the Russian MOX program, the MOX program remains stalled in both the U.S. and in Russia.

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powder which is its most toxic form and the form in which it can have a criticality accident and explode; be released and dispersed in the environment; undergo spontaneous combustion; and/or enter the lungs of plutonium workers and cause cancer.

And, in the final analysis, handling such a huge quantity of weapons-grade plutonium through several stages of processing, storage and transport as fresh “low-activity” fuel increases its vulnerability to theft and diversion — the exact opposite of the program’s stated mission to provide plutonium security!

The new experimental MOX fuel would be extremely volatile demanding the highest skill from nuclear operators to prevent accidents. Catawba and McGuire, the Duke Power reactors selected for the MOX program, are all near Charlotte, NC, a major population center. The MOX reactors are of a peculiar design which has little more than one-half as thick containment as other reactor types. This particular “ice condenser” reactor design was abandoned after a small number were built because it failed to work as designed. Studies predict 25% to 50% more fatalities from a reactor accident involving MOX fuel, and the reactors chosen for MOX are unfortunately the least safe type.

OPTION #3: PLUTONIUM PITS
More Atom Bombs?!

The third prospect for surplus plutonium stocks defies reason — make a Modern Pit Facility to make more atom bombs!

The reasons why the U.S., and the world, do not need more atom bombs seem obvious, especially in the U.S., the most heavily armed nation on Earth. And yet, the public has been asked twice to attend public meetings and voice reasons for and against more nuclear weapons. Nuclear weapons designers voiced concerns that weapons in the arsenal containing 50-year-old plutonium might have “only” the destructive power of 40 or 50 Hiroshima bombs.

SRS workers voiced the desire for jobs to prevent layoffs at the factory complex. Environmentalists and peace activists talked about jobs for environmental clean-up, plutonium immobilization, and developing nuclear waste management as a national security priority and regional technology export.

You wrote postcards and letters and gave testimony of your understanding that atom bombs destroy the environment both in their manufacture and in their use.

And Congress has, as of this moment, postponed funding to pursue a Modern Pit Facility!

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IMMOBILIZATION? MOX? BOMBS?
While the people debate, plutonium waits.

Glenn Carroll is coordinator of GANE and GANE's legal challenge to MOX.

TAKE ACTION ON PLUTONIUM

Plutonium waits — but YOU don’t have to wait — help shape plutonium’s destiny!

Congressman David Hobson controls the purse strings on which plutonium projects receive funding. Help set plutonium funding priorities by writing or calling:

The Honorable David Hobson
U.S. House of Representatives
Chairman, Energy & Water Development Subcommittee
2346 Rayburn Building
Washington, D.C. 20515
http://www.house.gov/hobson/formmail.htm
AMBER WAVES OF GRAIN  This field of ceramic nose-cones represents, in miniature, all the warheads in the U.S. nuclear arsenal. Denver artists Barbara Donachy and Andy Bardwell and 70 volunteers conceived and created the Amber Waves of Grain Nuclear Arsenal Project exhibit here installed at the Boston Science Museum in 1985. At the height of the Cold War, the U.S. arsenal was 31,500 warheads and the world’s nuclear arsenals exceeded 1,000,000 times the power of the Hiroshima bomb. The U.S. nuclear arsenal currently contains 10,000 warheads, 5,000 of them active, and over 2,000 of them deployed in first-strike Trident submarines. Amber Waves of Grain toured the world’s major cities from 1983 to 1990 and in 1994 was installed permanently at Prairie Peace Park in Nebraska until its recent closure. Amber Waves of Grain is now available for permanent exhibition. www.ippmw-europe.org/main/amberwaves.htm


HELLO?! SECURITY?!  Greenpeace shot this close-up photo of the “high security” plutonium truck loaded with 300-pounds of U.S. weapons-grade plutonium powder when it stopped for gas on route to COGEMA’s Cadarache MOX factory. COGEMA fabricated the plutonium into MOX reactor fuel for testing at Duke Power’s Catawba nuclear plant in Rock Hill, SC, near Charlotte. Would you like some “Freedom Fries” with your petrol, monsieur?

photo by Tom Clements

THE PRESIDENT’S SHADOW

A man in a dark suit walks six paces behind the President, a dark briefcase handcuffed to his arm. A black wire dangling behind his ear.

His suit is the shadow of skyscrapers over the projects. His briefcase is the stretched and sewn skins of whole dark families. He looks out through glasses darkened by all he has orders not to see.

Inside his case he carries the long penumbra of our lives, the insomnia of children who have gazed down the bottomless fall of space for the first time, lost between the distant houses of the stars —

We who no longer even look up at the night, we know him nonetheless: he is the broker of our confessions, priest of our daily transaction with the earth, the final executioner of our will.

We have offered him our children. We have offered him our grandchildren, our great-grandchildren down to the seventh generation. We have sold all the children in return for a wage to live on.

We have to put food on the table!

The man in the dark suit doesn’t even know he is the hunger that lives in our bellies and feeds on fear, he forgets that inside his briefcase he carries a huge, cold silence that stifles everything but the light of the television in so many houses tonight —

He looks around from the platform, momentarily mistaking the President’s applause for his own. Almost lets a smile get away.

— STEPHEN WING

Wing is a founding member of Atlanta Peace Poets and is available for reading of Earth Poetry. stevew@newleafdist.com www.gaialovegraffiti.com
the plutonium nation is a s.c. state of mind

in the Plutonium Nation
they mandate
environmental degradation:
spoil our soil and our water
procrastinating, "aw, well worry 'bout that a little
later"
but later never shows,
the fishy eyes just grow
and kudzu becomes hypnotic
with a radical neon glow —
the Savannah River keeps on going
ignorant to the fact
its cargo is packed
to the gills with nuclear waste
saturating its edible catch
and the crops s.c. and ga. citizens
rely on
to feed their sons and daughters
who won't die immediately —
for if they did, the people would demand
greater corporate responsibility —
but will live years & years
with a multitude of diseases
and the effects of radiation
on stillborn babies —
yes, this is the environmental degradation
they mandate
in the Plutonium Nation.

in the Plutonium Nation
they eradicate
the fragile human connection:
separate each one from the others
by socio-economic smothering,
iciting violence between sisters and brothers,
like madd dogs
scrapping for the bones
they throw to us,
through racial and class prejudices,
why else do people
believe in atomic solutions
proped up by atomic greed?
a unified force is what we need
to stop the plutonic forces
generating bombs
to separate us,
or modifying
excessive nucleic resources
into mixed-oxide fuel sources
not designed with safety in mind,
whether the threat is transportation,
daily use, or
disposal of continued waste —
what will happen,
soon or late,
is we will rise up and emphatically state
"We ARE Worth More Than
Your RISK"
& refuse to sacrifice our human connections
they seek to eradicate
in the Plutonium Nation.

in the Plutonium Nation
they say, "we make bombs
so you can be free"
but freedom isn't borne
out of fear & terror,
by rear-viewing the
hiroshima and nagasaki horrors —
where burned bodies
cast eerie shadows
to create their own
walls of misery —
how many times
must we recount this history?
war is NOT the means to peace!
war only serves to benefit
the high & mighty,
the powerful & immoral,
and to the "strong arm of the law"
the duty-filled will oppose;
plutonium tipped bombs drop
while rights aren't being read,
the indigenous & true patriot
hang by the same thread,
& freedom of speech is
a language soon dead,
so they can get away
with the rape of oil,
abandonment of peace treaties,
and the murder of millions
in a foreboding nuclear holocaust
by building atomic weapons
that either destroy or decay,
to which I angrily say, "your bombs
endanger me,
terrorize me,
& make me less safe,
here in the Plutonium Nation
of S.C."

— HEATHER MCCALMAN

Heather McCalman is one of the "Columbia 3"
arrested at the 2004 Republican National
Convention in NYC.
Accomplishments of GANE Legal Intervention in MOX Factory Construction Authorization Case

GANE's four-year legal campaign to stop the authorization of construction of the Mixed Oxide (MOX) Fuel Fabrication Facility at the Savannah River Site (SRS) ended in July 2005, when the U.S. Nuclear Regulatory Commission’s (NRC's) three-judge Atomic Safety and Licensing Board (ASLB) issued a decision terminating the MOX "Construction Authorization Proceeding." While GANE did not "win" the case by getting the NRC to reject DukeCogema Stone & Webster's (DCS) construction authorization request (CAR), we achieved some major accomplishments of which we are very proud.

Here are some of the highlights:

GANE delayed the timetable for building the MOX plant by almost a year. With help from Dr. Ed Lyman of the Union of Concerned Scientists (UCS), GANE won admission of a contention that DCS had violated NRC safety regulations in setting the boundary of the "controlled area" (i.e., the area over which DCS will be able to control radiation exposures during an accident) at the boundary of the entire SRS, over which DCS obviously lacks control. The NRC Staff picked up on our contention and forced Department of Energy (DOE) to change the location of the plant's controlled area boundary to a location just outside the proposed factory. Changing the controlled area boundary took an entire year because it forced DOE to revise its dose calculations and change the design of the plant.

The year’s delay cost the MOX factory project important momentum. During the period that the MOX factory construction authorization proceeding was delayed, the entire project began to flounder due to major disagreements between the U.S. and Russia regarding the terms of their joint MOX program. The MOX program is now so mired in international controversy that it is no longer clear whether the factory will ever be built.

GANE forced DCS to include considerations related to [weapons-grade plutonium] security and material control and accounting in the design of the MOX factory. DCS’ original application contained virtually no design features for security or material control and accounting (MC&A). Instead, DCS proposed to postpone consideration of these crucial issues until the operating license phase. After GANE won admission of a contention pointing out the fundamental importance of security and MC&A to facility design and challenging the appalling lack of this crucial information in the application, DCS revised the application to include design features for accounting for plutonium and protecting it from theft.

GANE forced DCS to come up with a process for disposing of thousands of gallons of high-alpha radioactive MOX waste. When DCS filed its construction authorization application, it proposed to pipe the radioactive MOX waste into tanks at the SRS that were already filled and leaking other radioactive waste from 40 years of nuclear weapons production. When GANE blew the whistle on DCS’ attempt to burden the already-beleaguered SRS tank closure program with even more noxious liquid radioactive waste, DCS had to come up with another process to solidify the waste. Although this plan is now in limbo, we have laid the groundwork to ensure that DCS will not get away with pipping its waste to other parts of the SRS.

GANE set important procedural precedents that will be helpful to other intervenors in the future. First GANE won expert witness fees for its seismic expert witness’ deposition testimony. Over DCS’ strenuous objection, the ASLB ordered DCS to reimburse GANE for thousands of dollars worth of expert witness fees that it incurred when DCS deposed GANE’s seismic expert for two days. Second, GANE obtained Level C security clearances for its attorney (Diane Curran) and its expert (Dr. Edwin S. Lyman). To GANE’s knowledge, this was the first time a public interest intervenor group obtained clearances in order to litigate security issues in an NRC licensing case. Given the likely importance of security issues in post-9/11 licensing cases, this precedent will be very useful to other groups in the future.

GANE won a ruling from the ASLB that the hearing on the MOX Facility must cover the need for an analysis of the environmental impacts of terrorist attack. With uncanny prescience, GANE filed a contention in August of 2001, demanding an analysis of the environmental impacts of a terrorist attack on the MOX Facility. Weeks later, the September 11 attacks occurred, but the NRC Staff and DCS held fast to their refusal to address terrorist attacks in their environmental studies. An outraged ASLB chastised DCS and the NRC Staff for their intransigence and ordered a hearing on the issue. While the NRC Commissioners ultimately reversed the ASLB’s decision, the sound reasoning and stirring language of the ASLB’s decision has been used by another group that has petitioned a federal appeals court to force the NRC to consider the environmental impacts of terrorist attacks in NRC licensing cases.

GANE forced DCS to revise and improve its Environmental Report on the cost of the MOX Factory. The cost of the MOX Factory was not addressed at all in DCS’ original Environmental Report. After GANE filed a contention criticizing this lack of information, DCS revised its application.

We are not sure whether or when DCS will apply for an operating license for the MOX Facility. If and when DCS submits an application, we will be ready to challenge it! — DIANE CURRAN

Diane Curran is a public interest attorney with Harmon, Curran, Spielberg & Eisenberg specializing in nuclear regulatory law. She represented GANE’s case opposing MOX.
August 6

How could one forget that flash?
One instant swept thirty thousand off the streets,
Underneath crushing darkness
Stilled fifty thousand screams.

The yellow smoke went whirling upwards,
Buildings were rent, bridges smashed,
Trams stood full of charred bodies,
Interminable rubble and cinders, Hiroshima!
Then wandered in lines the arms forwards,
Shred skin dangling,
Treading in split brains,
Tatters of clothes around their hips,
Naked people, wailing, weeping.

Bodies scattered like stone Buddha images over the parade ground,
Tangled mass crawled to moored timber rafts,
Died soon in heaps under the scorching sun.

Towards evening, flames rising against the sky,
Licked the parts of the city, where mothers and brothers were
Under the collapsed houses yet alive.

In the morning, when the sun shines
Over the group of schoolgirls, fled so far,
On the floor of the arsenal, polluted by dirt,
Swollen, eyes shattered, half a body shaved, baldheaded,
Unable to know, who is who.
There is nothing more that moves but swarms of flies
Around the basins, in the hanging stench.

How could one forget the silence,
Reigning over the whole city of three hundred thousand?
How could one forget the wishes,
Coming from the gray eye sockets of wives and children,
Which never more came back, never more,
Cutting our souls
In that silence!

PEACE FRIENDS Ellen Thomas of Proposition One Committee
raises her peace flag high above a reunion with her friends from
Kobe, Japan, at the May Day rally. The Kobe Delegation teaches
people about “Article 9” in the Japanese constitution. Article 9
renounces war and abolishes maintenance of “war potential” —
military forces and weapons.

HIBAKUSHAs A-BOMB SURVIVORS Delegation of hibakusha,
elderly survivors of the 1945 A-bomb bombing of Hiroshima
came to New York City with 1,000 Japanese citizens to support
the Nuclear Non-Proliferation Treaty at the U.N. 40,000 people
gathered for a massive peace march down Avenue of the
Americas and nuclear abolition rally at Central Park on May
Day. photo by Sayuri Miyazaki

DR. MILDRED MCCLAIN of Harambee House in Savannah filled
Central Park with the ringing sound — “I ain’t gonna study war
no more!” She spoke in support of community involvement in
nuclear issues at the May Day rally for nuclear abolition in
Central Park, NYC.
Our fathers, give back to me
Our fathers, give back to me, our mothers, give back to me,
Our elders, give back to me,
Our children, give back to me!

My self, human, give back to me
And all humans linked to me!

Peace, give back to me,
One, indestructible for ever,
As long as the human's human world will last.

— TOGE SANKICHI
from Atomic Bomb Poems

Toge made more than two dozen atomic bomb poems in the time of
the Korean War, under strict prohibition by the occupation forces.
These two poems are standing at the beginning of his pamphlet,
which was distributed secretly. The Poet died in 1953. He was heavy
damaged by radiation and he tried to regain his health by operation of
his lung to write more on Hiroshima but his body was not strong
enough to overcome the hardship of operation. He died during the
operation. Translated by Satoru Konishi

"I refuse to accept
the cynical notion
that nation after nation
must spiral down a
militaristic stairway
into the hell
of nuclear destruction.
I believe that unarmed trust
and unconditional love
will have the final
word in reality."

— REV. MARTIN LUTHER KING JR., 1964

TRINITY OBSERVANCE Folks gathered at the Freedom of Speech
area at Savannah River Site on July 16 — the 60th anniversary
of Trinity, the first atomic bomb. Nipponzan Myohoji Buddhist
monks Brother Utsumi and Sister Denise began the annual peace
pilgrimage to the Y-12 nuclear weapons plant at Oak Ridge,
Tennessee, from Savannah River Site's Freedom of Speech area.

DISCUSSING PEACE IN THE BOMB TOWN Aiken Peace hosted a
potluck social and panel discussion to cap the two-day peace
walk through Aiken. From left to right are Brother Utsumi, Sister
Denise, Father Bob Cushing and the Reverend Charles Ulrey.

TRADITIONAL JAPANESE LANTERNS GANE cohosted Seeds of
Peace Nagasaki Observance at King Center Freedom Hall on
August 9 in Atlanta. photo by Doug Denton
STOP I-3
NUCLEAR HIGHWAY

IF YOU ARE READING THE GANESAYER, you’re concerned about nuclear issues. One of the problems activists like us have is public apathy, so when something comes along that brings ordinary citizens face to face with the consequences of our government’s pro-nuclear policy, it’s a positive thing.

This is the good news about Interstate 3, the proposed super highway through the mountains of North Georgia and adjoining states. Georgia’s two Senators and the 10th District Representative, Charlie Norwood, want to build a interstate highway between Savannah, Georgia and Knoxville, Tennessee. Over a million dollars has been allocated for preliminary studies.

However, there are existing roads of almost equal length joining these two cities, so why build a new and very expensive highway through an environmentally sensitive area? Look at a map.

The new road would provide a direct link between the Savannah River Site on Georgia’s border and Oak Ridge in Tennessee, both operational nuclear weapons facilities. Suddenly one can understand the government’s desire for a direct, limited access road between the two sites even if it means cutting through a mountain range and destroying a way for life for rural residents.

This is the bad news, and it has activated citizens across party lines. From environmentalist organizations like the Sierra Club and the Chattahoochee Conservancy to business minded groups like local Chambers of Commerce, the response has been immediate and vocal, “Stop I-3!”

—JOAN O. KING

GANE board member Joan King lives in North Georgia. Her column on environmental issues appears in The Gainesville Times every other Tuesday.

For complete details and suggestions on how you can help, see the STOP I-3 web site:

www.stopI-3.org

Read my lips! No new nukes!

GEORGE BUSH PERSUADED Congress to enact legislation to support his energy program, including “safe, clean nuclear power.”

Bush sees “safe, clean nuclear power” —

But we see —

• pre-deployed weapons of mass destruction to be used against us — every community near a reactor at risk
• an unsolved legacy of radioactive waste piling up at reactor sites
• nuclear weapons technology proliferation across the globe
• an industry spewing radiation into the air and water every day from every reactor, mine, processing plant, and waste dump while posing constant threat of atomic meltdown
• diversion of scarce resources from clean, sustainable technologies to the most expensive, polluting and least efficient technology to address the overriding environmental issue of our times, the global climate crisis

THERE IS NOTHING “SAFE” or “clean” about nuclear power. The first generation of atomic reactors brought us bankrupted utilities, Three Mile Island, Chernobyl, the threat of a nuclear waste transport accident — a “Mobile Chernobyl,” and the existing 103 reactors scattered across our nation that could be dirty nuclear bombs for an enemy.

The Bush Administration’s energy bill took four years to pass Congress for good reason. Its support for the polluting nuclear, coal and oil industries offers mid-20th century solutions to 21st century problems. But the energy bill is still an “unfunded mandate” and Congress must be prevented from rewarding the Bush Administration’s energy industry friends with taxpayer dollars. Our Congress can, and should develop an energy policy that will lead the world in efficiency and sustainability, provide millions of new jobs in progressive energy industries, and take effective steps toward ending the global climate crisis.

THE SOUTHEAST IS GROUND ZERO for new nuclear projects being announced by utilities. Bush’s outrageous energy policies are giving our tax money to Georgia Power and Southern Company to build new nuclear plants in Georgia. The Bush Administration’s energy policy can, should and will be rejected by the American people and their elected officials.

—MICHAEL MARIOTTE

Michael is executive director of Nuclear Information Resource Service.

Download and circulate the safe energy petition opposing dangerous nuclear energy policy

www.nirs.org
Nuclear power still a deadly proposition

by Dr. 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 for nuclear power uses 93 percent 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 the 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 percent 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 the 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 is a pediatrician and president of the Nuclear Policy Research Institute. She is author of The New Nuclear Danger, George Bush’s Military Industrial Complex (The New Press) and just completed her latest book Why Nuclear Power is NOT the Answer to Global Warming (or anything else). She lives near Sydney, Australia.

www.npri.org

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WASTE DISASTER IN SOUTH CAROLINA

35 MILLION GALLONS OF HIGH LEVEL radioactive waste at Savannah River Site just got hotter. This is due to the dealings of South Carolina Senator Lindsay Graham, who led the charge to overturn the long-standing Nuclear Waste Policy Act late last year. Through a series of secret meetings, Graham and the Department of Energy added a section into the 2005 Defense Authorization Bill (i.e. annual war budget) giving DOE authority to reclassify the high-level tank waste at SRS. Now, DOE plans to mix the waste with concrete and reclassify it as "low level" waste.

THE "NOT SO LOW-LEVEL" LOW-DOWN

During the decades that the Savannah River Site (SRS) produced radioactive hydrogen and plutonium for nuclear weapons, huge inventories of hot nuclear wastes accumulated. Cloaked in secrecy for "national security," the 310-square-mile industrial complex was operated by the U.S. Department of Energy (DOE) with complete lack of environmental oversight until the late 1980s. One of the most egregious legacies of full-throttle bomb materials production is the 35,000,000 gallons of highly radioactive liquid industrial solvents stored in huge, aging, underground tanks which are beginning to spring leaks and spill their contents.

Classified as high-level waste by the 1982 Nuclear Waste Policy Act (NWPA), the law requires the hot waste to be converted to a form suitable for long-term geologic storage. In preparation of moving the waste to permanent storage, a factory was built at SRS in 1990 to convert the highly radioactive liquids to glass logs. The logs are stable and, unlike the tanks, pose no threat of radionuclide migration into the environment and ultimately the Savannah River.

But the process of converting the waste to glass logs has been slow-going. The tank wastes are not uniform, the liquid so lethally hot it can only be handled robotically, and the processing causes explosive gases to build up. In 15 years, of the 51 tanks, only two have been successfully emptied, and the radiation left in those two tanks exceeded DOE estimates of what was in the tanks in the first place.

"WHAT, ME WORRY?"

In 1999, DOE decided to abandon the path of science and law and embark instead upon the path of "linguistic detoxification," saying that the high-level waste in the tanks should be reclassified from high-level waste to "waste incidental to reprocessing." Instead of embracing the legal, if difficult, challenge to stabilize all of the most radioactive waste into a form suitable for geologic storage (in this case glass), DOE has now been given authority to set its own standards (with vaguely defined regulatory balance from local and nuclear industry regulators) and proposes to use concrete (grout) to cement the "hard-to-budge" sludge (which contains nearly all of the radioactivity) in the underground tanks. These highly radioactive tanks would remain on-site by the Savannah River forever. The tanks will rust and intensely radioactive water-based concrete will begin to fail in as little as 25 years. Then radionuclides will mobilize into the environment. There are also multiple uncertainties about the feasibility of thoroughly mixing the waste in tanks the size of basketball courts, and unknowns about chemical interactions between the strange brew of waste elements and concrete.

THERE OUGHTA BE A LAW

To counter DOE's plan, the Natural Resources Defense Council (NRDC) sued DOE for non-compliance with the NWPA. Joined in the lawsuit by the states of Washington, Idaho and South Carolina, all

SCANDAL!! USGS Falsifies and Manipulates Data Could it Really be The End of the Yucca Mountain Dump!?}

THE GEOLOGIC REPOSITORY for high-level radioactive waste at Yucca Mountain in Nevada was already "increasingly unlikely" to open when e-mail communication revealed that United States Geologic Survey (USGS) scientists plotted to falsify hydrology data for the project. In the face of this outright scandal, a contentious chapter of the nuclear industry's tenure may finally be drawing to a close.

A recent judicial victory for the State of Nevada and public interest groups forced U.S. Department of Energy (DOE) to make millions of documents available for public scrutiny as part of Yucca's license application. Among the documents were USGS e-mails from 1998 to 2000 that contained revelations about deliberate data falsification and manipulation. The collusion was happening during the height of the controversy over the presence of water in Yucca Mountain, water which would corrode storage containers and mobilize waste into the environment. Since high-level nuclear waste must be isolated from the biosphere for hundreds of thousands of years, the hydrology data would clearly have wrecked DOE's repository plans.

DOE and USGS have acknowledged the seriousness of the scandal. The repository's doubtful future comes at an awkward time for the much ballyhooed "nuclear comeback." The nuclear industry however, continues to spin nuclear power as attractive, even in the glare of its mounting nuclear waste problem.

Even though Yucca Mountain may be spared from becoming a radiological threat for all time, people have already been injured in the site exploration process. Workers in the miles of exploratory tunnels of Yucca Mountain are being diagnosed with lung disease from exposure to the silica dust in the tunnels. Class action suits are being brought against DOE by the injured workers, who show that DOE knew about the hazard but did nothing to inform or protect its workers from silica exposure.

Utilities who "dared to go nuclear" have also been injured by DOE which is seven
of which have inventories of high-level waste, the NRDC won the case. DOE appealed the court decision while entering into secret meetings with Senator Graham. Together, they hatched a plot to change the problematic standards mandated by NWPA. This is when they sneak ed a section into the $447 billion, 995-page “war budget.” It was a wild ride which many of you took with us through e-mail action alerts last year. There were heroic efforts by Senators Fritz Hollings of South Carolina and Maria Cantwell of Washington to block the section in the bill. We won a key round but ultimately lost. DOE emerged as the new boss of the high-level radioactive waste inventory in South Carolina. Under the new law, the South Carolina Department of Health and Environmental Control (DHEC) must authorize plans and U.S. Nuclear Regulatory Commission (NRC) will act in some vague advisory capacity.

"IT AIN'T CAST IN CONCRETE YET!"

This is a terrible state of affairs, and GANE and other nuclear activists are sorely challenged to figure out how to overturn the new law. There are junctures at which interpretation of the new law will be argued in the courts. There is one piece of good news, however. The new law requires a National Academy of Sciences (NAS) study of DOE high-level waste plans. The recently issued first report of the NAS study committee supports public safety by placing emphasis and urgency on proceeding immediately with vitrification (glassification) of the liquid radioactive tank wastes. The NAS committee then strongly urges DOE to wait 10 years for final tank disposition and commit to develop better waste removal technology.

While we remain on high-alert to this profound environmental risk, we can take heart from Joe Whetstone's optimistic insight. Joe lives in Bluffton, SC, which gets its municipal water from the Savannah River and is highly concerned about the current threat to the river if the radioactive tanks are grouted and left underground forever. Joe is active in the issue, attending meetings of the SRS Citizens Advisory Board, communicating with local and national environmental officials and writing informative letters to the local newspaper. Joe sustains himself and others with this call to action: "It ain't cast in concrete yet, folks!"

— GLENN CARROLL

Educate yourself about this important issue and help get the word out! Here are links to two independent reports on waste issues at Savannah River Site:

Nuclear Dumps by the Riverside
http://www.ieer.org/reports/srs/full rpt.pdf
What the DOE Knows It Doesn't Know About Grout
http://www.ieer.org/reports/srs/grout.pdf

IT'S B-A-ACK ... NUCLEAR WASTE REPROCESSING

A CALL TO RECONVENE THE NATIONAL NUCLEAR WASTE DEBATE is rumbling ever louder from all points of view of the nuclear debate. Predictably, dreadful ideas gather chorus, too.

One such dreadful idea is a long-held nuclear industry dream, "reprocessing" high-level nuclear waste into plutonium MOX reactor fuel. Reprocessing is the term given to the crude process of dissolving highly radioactive used nuclear fuel rods in industrial solvents in order to separate and extract the elements used for nuclear weapons. The special nuclear materials that can be used for atomic weapons are, incidentally, the raw materials from which nuclear reactor fuels are made, also.

Congress has just voted to give enormous sums of tax money to begin reprocessing "at a government facility" since the U.S. Department of Energy (DOE) has failed with Yucca Mountain. Savannah River Site on Georgia's border is a likely host candidate for reprocessing as it has experience with reprocessing and plutonium (and still has 35,000,000 gallons of high-level liquid waste in old underground tanks from reprocessing nuclear fuel to extract weapons plutonium and tritium).

Reprocessing, besides being the fundamental technology with which to make "weapons of mass destruction," generates a brutally toxic waste stream contaminated with fiercely hot byproducts of nuclear energy that cause birth defects and cancer and will persist for many, many centuries. The U.S. warns North Korea and Iran not to use their nuclear power plants to make materials for nuclear weapons while conspicuously holding a special, different standard for itself.

The U.S. has long-rejected the reprocessing/plutonium option (and MOX) especially since a short but disastrous experiment in West Valley, NY, has been the subject of an ongoing multibillion dollar government-funded radioactive waste clean-up project since it closing in 1972. A proposed reprocessing and MOX factory was built in Barnwell, SC, in the '80s but closed without operating in 1978 when President Jimmy Carter cancelled it because the risk of nuclear weapons proliferation was too high.

Government-run reprocessing industries in France and Britain have suffered a steady loss of customers as other European nations phase out their nuclear programs. The North Atlantic ocean and sediments from La Hague to Greenland to the Irish Sea have been contaminated by reprocessing.

WHAT, THEN, IS TO BE DONE WITH NUCLEAR WASTE?

Now that the failure of the Yucca Mountain repository is being acknowledged in industry circles, it's a good time to raise alternative nuclear waste plans. Some environmentalists, like GANE, are venturing proposals such as "Hardened On-Site Storage" (HOSS) to improve existing radioactive waste storage and regulation at reactor sites. Even if waste were moved to a "temporary" facility such as Private Fuel Storage, or a permanent repository such as Yucca Mountain, many reactors worth of nuclear waste will continue to be stored at each reactor site in large pools of water (like swimming pools) which risk catastrophic accidental release of radiation from loss-of-coolant or terrorism. Nuclear waste storage on-site can and must be made more secure by building robust structures for nuclear waste storage and by properly spacing the waste to prevent accidental criticalities.

— GLENN CARROLL

Yucca Mountain in Nevada is called "Serpent Swimming Westward" and held sacred by the Western Shoshone Nation which claims it is on their land.

Fall 2005
HEY, SOUTHERN COMPANY!

"Don’t Waste Native Lands!"

SOUTHERN COMPANY RECENTLY received a license from federal regulators for its Private Fuel Storage nuclear waste venture on the Goshute Reservation in Utah.

For over two years, the Atomic Safety and Licensing Board and the U.S. Nuclear Regulatory Commission (NRC) contemplated the level of hazard posed by the Air Force F-16 fighter jet testing grounds adjacent to the proposed dumpsite. In a split decision, the NRC approved a license for the dump, finding the jet crash risk to be acceptable and the likelihood of radiological catastrophe low.

Judge Peter S. Lam voted against the dump saying uncertainties were too great to make an accurate assessment of risk. The State of Utah and Goshute Band continue to resist the dump in every legal and political avenue.

In 1997, Southern Company, in consortium with seven other utilities submitted a license request to the NRC to establish a temporary private nuclear waste storage facility. Naming themselves “Private Fuel Storage LLC” (PFS), they selected for their site the Goshute Reservation of the Skull Valley Band in Utah.

The idea for a “temporary” nuclear waste storage on an Indian reservation is not new. The U.S. government is running far behind its 1998 deadline to remove spent nuclear fuel from nuclear power plant sites to a permanent geologic repository. As a stop-gap measure, the government has several times attempted to site "Monitored Retrievable Storage” (MRS) facilities above ground at various Indian reservations throughout the country, usually in the West.

Tribes have again and again been tempted with large sums of cash but have successfully warded off the threat of nuclear waste storage — and the Goshute Band is undergoing a deep internal struggle to resist Southern Company plans. U.S. Bureau of Indian Affairs (BIA) recognizes Leon Bear, who has made secret deals with Southern Company and PFS, as the Goshute chairman. Dump opponents Melinda Moon and Sammy Blackbear were elected to replace Bear in 2001, but the BIA has ignored the tribe's sovereign process and continued to acknowledge only dump proponent Bear. In addition to tribal resistance, Southern Company and PFS also face strong opposition from the State of Utah. There are many issues still unresolved including Utah-controlled transportation access to the dump-site and whether the PFS storage casks would be accepted at Yucca Mountain.

In February 2005, GANE representatives delivered a petition signed by hundreds of citizens from throughout the U.S. to Southern Company executives. The petition requested Southern Company to quit its involvement in PFS outlining concerns: that it is environmental racism for rich nations to export toxic radioactive waste to poor nations; that only Congress is empowered to make decisions concerning nuclear waste policy; and that PFS could become a permanent dump now that the cancellation of Yucca Mountain seems imminent.

GANE discussed the probability of high-level spent nuclear fuel remaining on-site at Southern Company power plants for the indeterminate future and presented alternate plans for upgrading current storage methods to withstand terrorist attacks. We gave everyone a copy of Robust Storage of Spent Nuclear Fuel: A Neglected Issue of Homeland Security (Gordon Thompson, January 2003). In addition, we presented the HOSS proposal (Hardened On-Site Storage) developed by Institute for Energy and Environmental Research. Southern Company owns several nuclear power plants: Vogtle, near Augusta; Hatch, near Vidalia; and Farley, near Dothan, Alabama. Southern Company denied any particularly interest in nuclear at our meeting but has since announced plans to pursue new nuclear plants at Plant Vogtle see back page story.

As prospects for a high-level waste repository at Yucca Mountain retreat rapidly to some remote, speculative future — and PFS continues to experience delays — utilities are increasingly deploying on-site the type of dry cask storage for spent nuclear fuel rods proposed for use at PFS. Southern Company has run out of fuel pool space at Hatch and has begun to institute "conventional" dry cask storage on-site there. Dry cask storage could be an improvement over wet storage which is at risk of catastrophic radiation release from loss of coolant, but all spent fuel storage must be improved and hardened against terrorist attacks. The plans which GANE has submitted to Southern Company provide guidance for fuel spacing and using bermed earth to protect fuel and deflect air strikes and explosions.

The majority of Goshutes and the State of Utah are committed to seeing that they do not become host to the 40,000 tons of high-level radioactive waste planned for PFS. Meanwhile, GANE will continue to press Southern Company to provide safer storage for the nuclear waste mounting up on its Georgia and Alabama sites.

— GLENN CARROLL
Glenn is coordinator of GANE.

TAKE ACTION TO RECONVENE THE NUCLEAR WASTE DEBATE

Contact the Secretary of Energy and encourage him to reconvene the debate on high-level nuclear waste disposal:
SAMUEL W. BODMAN
Secretary of Energy
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585
Phone: 202-586-6210
the.secretary@hq.doe.gov

More about Yucca Mountain and HOSS
www.ieer.org
www.citizenalert.org
www.nvantinuclear.org

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GANE representatives, Glenn Carroll and Betsy Rivard (from left) delivered hundreds of signatures opposing Southern Company’s involvement in a nuclear waste dump on the Goshute Band’s reservation. Bentina Terry, Southern Nuclear Operating Company vice president and general counsel and Dwight Evans, Southern Company executive vice president of external affairs, receive the petition after meeting with GANE about alternatives for Southern Company nuclear waste.
Many thanks to these generous GANE supporters

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Donations to Georgians Against Nuclear Energy, a 501(c)(3) organization, are tax-deductible.

*Membership in GANE is free (optional $10 donation helps with operating costs)
Southern Company Announces New Nuke Plans for Georgia

by Dr. Marci Culley

WITH NO SOLUTION TO NUCLEAR WASTE in sight, Georgia-based utility giant Southern Company publicly announced its plans to submit an Early Site Permit (ESP) to the U.S. Nuclear Regulatory Commission (NRC) for a new nuclear power plant at its Vogtle site in Waynesboro, Georgia. Two reactors (Vogtle #1 and #2) are already in operation at the site.

Review of the application, which Southern Company expects to submit to the NRC by August 2006, will reportedly take about three years to complete. Southern also announced its plans to submit a Combined Operating License (COL) in March 2008 — more than a year before the ESP review process is completed. This plan calls into question the new “streamlined” regulatory approach that reflects regulatory officials’ commitment to “low-risk” licensing procedures. The streamlined regulatory process was developed to encourage utilities deterred by the exorbitant cost of licensing and building nuclear facilities to pursue nuclear power again. No new nuclear plants have been ordered in more than 30 years.

ON TOP OF CUSTOM-TAILORED regulations in favor of the nuclear option, Southern Co.’s application expenses will be underwritten by a U.S. Department of Energy (DOE) “pilot program” in which half of the cost of filing the ESP will be paid with taxpayer money. But bankrolling the new nuclear venture doesn’t empower the taxpayers in the licensing process, and the new regulatory process appears rather to hamper citizens’ efforts to meaningfully participate in decision-making about the siting of such plants. While the ESP process offers some opportunity for the public to intervene, once granted, many environmental, health and safety concerns cannot be raised for the life of the permit which amounts to about 20 years, with up to 20 additional years if an extension is granted.

That said, public intervention in the ESP process is extremely important. As it stands now, if the necessary permits and licenses are granted, construction could begin at Vogtle by 2010 and the plant could begin operation in 2015. Public opposition to nuclear power remains high even as special interests coerce our tax dollars from an all-too-willing Congress.

PUBLIC MEETINGS CONCERNING Southern Company nuclear plans are set to begin in February 2006. GANE will keep you posted of opportunities to take a stand to prevent a new chapter of nuclear madness in the South.

Marci is professor of environmental psychology at Georgia State University and a member of GANE’s board of directors.