

FFTF COULD BE RESTARTED, AND IS UNDER CONSIDERATION FOR GNEP SITE

The Fast Flux Test Facility in Hanford, Washington, the nation's only sodium-cooled fast reactor, could be restarted, and is under consideration as a potential facility for the Global Nuclear Energy Partnership (GNEP) program of the U.S. Department of Energy. In an interview Nov. 13, DOE Assistant Secretary for Nuclear Energy, Dennis Spurgeon, told *21st Century* that "The Fast Flux Test Facility (FFTF) in the state of Washington continues to be a potential option. The ultimate decision to use FFTF or a different solution will depend upon many factors, including cost, acceptance by the state and local populations, FFTF's ranking against other technologies, operating and maintenance costs, amongst other considerations."

The DOE made the decision to shut down the FFTF in 2005 for budgetary reasons, although the 400-megawatt reactor had worked well as a prototype for testing fission fuels and materials, and for producing isotopes for medical and industrial use. Within months of its shutdown, the new GNEP program was announced, which called for the development of a sodium-cooled fast reactor!

A hole was drilled in a plate inside the FFTF reactor vessel to drain the sodium coolant, which was thought would permanently disable the reactor. However, after the hole was drilled, engineers inspected it, reassessed the situation, and determined that the reactor could be restarted. For more background on the FFTF, see www.21stcenturysciencetech.com/Articles%202005/Hanford.pdf.

INDIA TO BUILD FOUR NEW 500-MW FAST BREEDER REACTORS BY 2020

Four new fast breeder reactors, which will be used to convert India's abundant thorium supplies into fissionable uranium, were approved for construction by 2020, reported Baldev Raj, the director of Indira Gandhi Centre for Atomic Energy, on Nov. 14. The reactors will also generate excess power for the electricity grid. India's Planning Commission has cleared the 500-megawatt fast breeder reactors, each costing about \$800 million. Two of the reactors will be set up at Kalpakkam in Tamil Nadu, alongside the existing Fast Breeder Test Reactor and the Prototype Fast Breeder reactor (PFBR), which is under construction.

India's fast breeder reactor program is primarily to develop fissile uranium-233 fuel from the country's abundant supply of thorium-232. The breeders are the second-stage of India's three-stage self-sustaining nuclear power program, designed by Dr. Homi Bhabha in the 1960s. The third and final stage will use the fissile uranium-233 generated in thorium breeder reactors.

DDT REPELS MOSQUITOES, NOT JUST KILLS THEM

DDT's main effectiveness in reducing the spread of malaria is that it *repels* mosquitoes: When mosquitoes sense that DDT has been sprayed on the inside walls of a house, most (3 out of 5) will not enter the house. Further, DDT is a *contact irritant*, so that many of those mosquitoes who do enter the sprayed house, will quickly leave. DDT indoor spraying will repel and irritate even those mosquitoes that are resistant to DDT and will not be killed by it.

The most recent study establishing the effectiveness of DDT for insect control was carried out in Thailand by a team that included entomologist Donald Roberts. ("A New Classification System for the Actions of IRS Chemicals Traditionally Used for Malaria Control," Aug. 8, 2007, PLoSOne.) What makes DDT superior, the authors say, is not so much that it is toxic for insects (actually it is a slow killer), but that it is a spatial repellent and contact irritant. They call for a reclassification of insecticides based on these three factors.

Although the World Health Organization reversed its ban on DDT use in September 2006, and now permits its use in Indoor Residual Spraying or IRS, the legacy of lies and environmentalist myths is still stopping its use in some African countries, while malaria deaths continue to soar.



DOE

Back from the grave?: The Fast Flux Test Reactor at Hanford.



Read more about DDT on the 21st Century website, including an interview with Dr. Roberts at www.21stcenturysciencetech.com/2006_articles/Donald_Roberts.pdf.



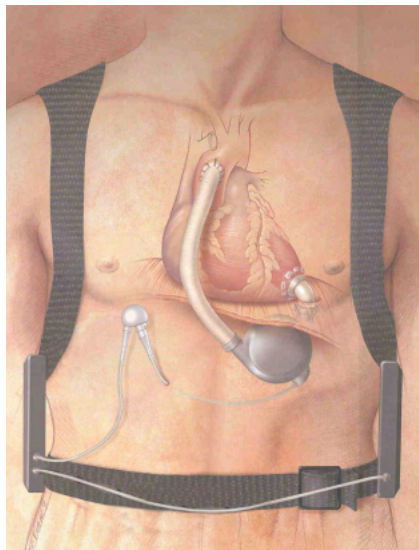
Nuclear Power: The Leading Strategy for Reducing Carbon Emissions
Position Statement
Revised June 2006

The American Nuclear Society believes that one of the most effective ways to reduce global carbon-dioxide emissions in the future is by making increasing use of nuclear energy to replace fossil fuels. This technology is the only one with near-zero carbon-dioxide emissions that has been proven capable of delivering, reliably and sustainably, the large quantities of energy needed by an industrial society. Also, the energy from nuclear fission is essentially inexhaustible, just as is the energy from sources traditionally considered "renewable."

Other energy technologies with low carbon-dioxide emissions, such as wind, solar, and hydro, should be used where appropriate. However, they have a limited capability and, with the exception of hydro, produce energy intermittently, requiring backup power generators or storage facilities. Their energy densities are high, and they have nonnegligible external costs, such as degradation of the environment and depletion of natural resources.



We need nuclear power because its energy flux density can power an industrial economy and support a growing world population—not because of the global warming hoax.



WorldHeart

This tiny maglev pump device can keep a heart pumping while heart muscles are healing.

WILL PRAGMATISM AND COWARDICE KILL THE NUCLEAR INDUSTRY, AGAIN?

That the U.S. nuclear industry could kill the “nuclear renaissance” before it gets off the ground, was evidenced at the plenary session of the annual meeting of the American Nuclear Society, Nov. 11-15 in Washington, D.C.. There, nuclear engineers were put through a rant by environmentalist Eileen Claussen, president of the Pew Center on Global Climate Change, who claimed that carbon dioxide emissions had to be reduced by 80 percent by 2050. Claussen stated that putting a “price on carbon” is the “only way to make nuclear competitive.” Instead of federal subsidies, the “best subsidy is a climate policy,” she counseled. “Cap and trade.”

It is not such environmental extremists who could kill nuclear—it is the “nuclear supporters,” and the industry itself, which opportunistically jumped on the “global warming” bandwagon a few years ago, selling nuclear energy as a way of reducing carbon emissions. The second plenary session, for example, included former New Hampshire Gov. John Sununu, who two decades ago led a fight for years to get New Hampshire’s Seabrook nuclear power plant online. After appropriately excoriating the industry for being “too afraid to be pro-nuclear,” Sununu stated that although he is “a skeptic on global warming, you might as well exploit it, and use the stupidity of one group to accomplish what we want.”

During the question period, *21st Century* Associate Editor Marsha Freeman questioned Sununu’s global warming embrace, stating that global warming is not the reason that the United States needs nuclear power plants. Not telling the truth will backfire, she said. Although Sununu agreed that “too much of the private sector has caved in to the fad of global warming,” he repeated that the nuclear industry has to be part of the discussion of what policy should be enacted to combat it!

A great many of the attendees—from the nuclear industry, universities, and national laboratories—agreed that global warming is a hoax, and not the way to promote nuclear energy, and were happy to receive copies (distributed by *21st Century*) of an open letter to the American Nuclear Society by scientist Zbigniew Jaworowski (this issue, p. 6).

MINI-MAGLEV PUMPS TRANSPORT BLOOD FOR AILING HEARTS

The WorldHeart company announced in September that it had successfully concluded a multi-day study with lambs of its magnetically levitated heart pump, Pediaflow, which is small enough to be implanted in a newborn. In Spring 2006, its first adult-size mini-maglev heart pump successfully assisted the pumping of blood from a human patient’s left ventricle to the aorta for 85 days, while the patient’s heart healed. WorldHeart’s prototype maglev heart pump, the Levacor VAD (ventricular assist device), was implanted in a heart patient at a hospital in Thessaloniki, Greece. Subsequently another Greek heart patient underwent similar successful therapy with the Levacor VAD.

Dr. Antonis Pitsis, principal investigator of the Levacor clinical feasibility trial, commented: “These patients’ recovery of natural heart function while supported by the Levacor VAD has been remarkable. This device, with its wide range of operation, supported our protocols for recovery of the natural left ventricle extremely well. Most important is the high quality of life achieved by recovery.”

Some of the technological know-how behind the maglev heart pumps comes from Launchpoint Technologies, a California company with several maglev projects under development, including designs for innovative freight and human maglev transport systems, and a space-launching system using maglev technology.

THE RUSSIAN SPACE PROGRAM IS STARTING TO SEE A ‘RENAISSANCE’

After the 1990s near-collapse of the Soviet space program, when “free market” economic policies nearly destroyed a half-century of Russian scientific and technical patrimony, President Vladimir Putin’s personal support has started a “renaissance” in the civilian space sector, Russian space experts reported at a Washington, D.C. conference Nov. 12, celebrating Sputnik’s 50th anniversary.

Academician Lev Zeleny, director of the prestigious Russian Space Research Institute in Moscow, told the conference that Russia is now planning a series of new space science missions for the second 50 years of the space age, including exploring new

physics hypotheses from space, exploring the question of the origin of life, and life beyond the Earth. But, he said, “we are not going into space just to do science.” There is a “heritage in Russian philosophy” that is not just “pragmatic,” reflected in the space program, from Konstantin Tsiolkovsky, Vernadsky, and Soviet “chief designer” Sergei Korolev.

MEXICO FLOOD CATASTROPHE: THE CAUSE IS AN ‘INFRASTRUCTURE DEFICIT’

The catastrophic floods in the southern Mexico states of Tabasco and Chiapas, affecting hundreds of thousands of people and putting 90 percent of Tabasco under water, could have been prevented had planned infrastructure projects been carried out. Water-management engineer Manuel Frías told *Executive Intelligence Review* that at the time of the 1999 floods, he proposed specific infrastructure projects and warned that if they were not built, future flooding would be a catastrophe. It’s the “infrastructure deficit” alone that is responsible for the current disaster, he said.

A mass leaflet distributed by the Mexican LaRouche Youth Movement maps out the water management programs long put forward since the 1980s by the LaRouche movement: the Hydraulic Plan of the Northwest Gulf (PLHINO) and of the Northeast Gulf (PLHIGÓN). These consist of a series of dams and canals, which would transport large quantities from southern Mexico’s big rivers to the arid, but very fertile coastal regions of the northeast and northwest.

WOUNDS TREATED WITH PULSED MAGNETIC FIELDS HEAL FASTER

Medical researchers from several New York hospitals gave dramatic evidence for the healing power of pulsed magnetic fields, writing in the journal *Plastic and Reconstructive Surgery* in August. Certain well-defined radiofrequency-pulsed magnetic fields accelerated wound healing (measured by increased tensile strength at the wound line) in sutured rat incisions by 48 percent at 21 days, the researchers found.

The team began with a configuration already in successful clinical use for chronic wound treatment (pressure sores and diabetic ulcers): a 27.12 MHz sinusoidal wave inducing a 1-gauss peak field of 65-microseconds’ duration, repeated 600 times per second. This field gave them the successful results mentioned above. Earlier research had shown that smaller amplitude fields—in the .01- to .05-G range—using such short bursts were not effective on wounds, even at high repeat rates. The researchers predicted, based on known magnetic-field stimulation of Ca⁺⁺ binding to calmodulin, a critical electrically mediated biochemical event in tissue repair, that such small amplitude fields could be successful if longer burst times were used. Indeed, a field of .05 G was found to accelerate wound healing if tuned to a burst duration of 1 msec repeated five times per second. For 2-msec bursts five times per second, healing was even faster.

The success of pulsed magnetic fields 20 times smaller than the initial setup is important, as the device generating the field can be much smaller and more portable, and the output from the smaller device has a minimal effect on nearby electronic apparatus.

WNA HEAD: WE CAN BUILD FIVE NUCLEAR REACTORS PER WEEK!

“If the OECD countries, plus China and India, were to build at France’s 1980s start-up rate, the result would be five reactors per week, rather than one,” stated John Ritch, director-general of the World Nuclear Association, July 4, cited by World Nuclear News online. France built an average of 3.4 reactors per year from 1977 to 1993, achieving a nuclear share of electricity near 80 percent, he said.

Ritch was responding to a new report issued by the Oxford Research Group in Britain, which concluded that “nuclear power should be taken out of the energy mix,” because of concerns with proliferation and safety, and because it would be impossible to build even 48 new reactors per year, between now and 2075, the rate the report says would be required to combat global warming. “Whereas the authors dismiss as a pipedream the idea that the world’s nations might somehow combine to build one reactor a week,” Ritch said, “the future expansion of nuclear power will probably be even more rapid.” Unfortunately, Ritch is a fervent believer in “global warming” as an effect of human population. See this issue’s Conference Report, p. 63.



Southern Mexico town under water: the result of de-investment in water projects and other infrastructure. Photo taken by a member of a Pemex rescue crew.



Korea Hydro and Nuclear Power Co., Ltd.

Ritch’s estimate of the nuclear construction potential fits with that of Jim Muckerheide, the state nuclear engineer of Massachusetts, in “How to Build 6,000 Nuclear Plants by 2050,” www.21stcenturysciencetech.com/Articles%202005/Nuclear2050.pdf. Here, a line-up of nuclear plants at South Korea’s Yonggwang nuclear complex.