

NUCLEAR ENERGY FUTURES

Research Project Publication

GNEP Watch: Developments in the Global Nuclear Energy Partnership

A monthly report prepared by Miles Pomper in Washington DC for the CIGI Nuclear Energy Futures Project

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US Administration Leaves Key GNEP Decisions to Next President

With its Global Nuclear Energy Partnership (GNEP) already facing resistance from the US Congress, the Bush administration has decided to leave to the next president key decisions affecting the domestic leg of the controversial program.

Administration officials have claimed that GNEP, which seeks to develop new nuclear technologies and new international nuclear fuel arrangements, will cut nuclear waste and decrease the risk that an anticipated growth in the use of nuclear energy worldwide could spur nuclear proliferation. Critics assert that the administration's course would exacerbate the proliferation risks posed by the spread of spent fuel reprocessing technology, be prohibitively expensive, and fail to significantly ease waste disposal challenges without any certainty that the claimed technologies will ever be developed.

Congress has largely sided with the critics and last year sharply cut the administration's proposed budget for the program and restricted it to research (see GNEP Watch, No. 3).

Current reprocessing technologies yield pure or nearly pure plutonium that can be used in fuel for nuclear reactors or to provide fissile material for nuclear weapons. GNEP proposes to build facilities that would

retain other elements in the spent fuel along with the plutonium, making it less attractive for weapons production than pure plutonium. But critics note that this fuel would still not be as proliferation-resistant as when the spent fuel is left intact.

In 10 April 2008 testimony before the House Appropriations Energy and Water Subcommittee, Dennis Spurgeon, assistant secretary of energy for nuclear energy, said that Secretary of Energy Samuel Bodman would leave it to the next administration to make key decisions previously expected for mid-year. Bodman had been set to pick a "technology path forward" for the program that could lead to the construction of reprocessing-related facilities (see GNEP Watch, No. 3).

"I would look to the end of this year and this being more of a transition document that would be the secretary's recommendation as to 'this is where we [are] and this is how I think we ought to proceed,'" Spurgeon said. "But by no means are we going to be in a position to recommend any major demonstration-scale facilities or their construction at this time."

In particular, Spurgeon said that Bodman did not plan to make a decision on whether to build a nuclear fuel reprocessing centre or a prototype fast reactor. Fast reactors rely on "fast neutrons" to fission plutonium and other elements in the spent fuel. These neutrons differ from "thermal neutrons" that have been slowed down by a moderator in a reactor, such as the water used in many North American nuclear plants that rely on fresh uranium fuel.

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Spurgeon said that if a reactor were built, it would “very likely” be financed by an international partnership including France and Japan. In February, the three countries signed a memorandum of understanding to cooperate in the development of prototype sodium-cooled fast reactors (see GNEP Watch, No. 5).

In the meantime, the US Energy Department is looking to gather more information about the cost, feasibility, and technical aspects of the proposed plants. A 28 March 2008 press release said that the department had awarded US\$18.3 million to four industry teams to further develop plans for the facilities (GNEP, 2008). In addition, Spurgeon said that the department hoped to offer more definitive plans by this summer for constructing a new research and development facility for all nuclear fuels, including those that would be used in fast reactors.

Nonetheless, some key supporters of GNEP are not giving up on winning approval for building reprocessing facilities during the Bush administration's tenure. Senator Pete Domenici, a New Mexico Republican, who is retiring at the end of this session, said at a Senate Appropriations subcommittee hearing on 9 April 2008 that he is drafting legislation that would set up a government-backed reprocessing industry and provide for facilities using current reprocessing technologies.

Senator Jeff Sessions, an Alabama Republican who is working with Domenici on the legislation, told *The Birmingham News*, an Alabama newspaper, on 24 April 2008 (Orndorff, 2008) that the measure, to be introduced within weeks, would use government funds to defray half the cost of licensing the first two nuclear recycling facilities that apply and qualify.

Sessions hinted that those facilities could be operated by the Tennessee Valley Authority (TVA), a federal government-owned corporation and the largest public power company in the United States. TVA operates six nuclear reactors in the southern United States and has applied to build two more. “TVA has expressed an interest and I believe has the capacity to use existing reprocessing technology which I think we need now,” Sessions told the Alabama newspaper.

On 24 April, TVA and the Department of Energy signed an information-sharing agreement under which the Energy Department would fund research at TVA on advanced fuel-cycle technologies. “The information provided and utility perspective offered from this partnership will be vital in departmental decisions on GNEP and closing the nuclear fuel cycle in the United States,” Spurgeon said (GNEP, 2008).

International developments

While the future of the domestic leg of the program remains clouded, the US administration's international efforts continue to move forward. During March, President George W. Bush made a pitch for the use of nuclear energy in developing countries. The next month, he and Russian President Vladimir Putin reiterated their desire to tackle some of the practical barriers to that growth.

“I believe developing nations ought to be encouraged to use nuclear power,” President Bush told an international conference on renewable energy on 5 March 2008. “I believe it's in our interests, I believe it will help take pressure off the price of oil, and I know it's going to help the environment.” (Bush, 2008).

About GNEP Watch

GNEP Watch reports on current developments in the Global Nuclear Energy Partnership (GNEP). GNEP is a US government-led international initiative aimed at encouraging the expansion of domestic and international nuclear energy production while working toward the reduction of proliferation and environmental risks.

CIGI Nuclear Energy Futures Project

The Nuclear Energy Futures project investigates the implications of the purported nuclear energy revival for nuclear safety, security and nonproliferation over the coming two decades and will propose recommendations for consideration by the international community, particularly in the area of global governance.

How helpful nuclear power would be in curbing the price of oil is unclear, since petroleum is primarily used in transportation, while nuclear energy is used to generate electricity. Nuclear energy is said to lead to lower carbon dioxide emissions (and thus less global warming) than fossil fuels, but it is not clear if enough reactors could be built quickly enough to make a significant dent in global warming.

And some critics are questioning whether these poorer countries have sufficient financial, regulatory, and technical infrastructure to cope with the challenges of atomic power.

Nonetheless, at a summit on 6 April 2008 in Sochi, Russia, President Bush and Russian President Vladimir Putin adopted a Strategic Framework Declaration that reiterated their July 2007 pledge to promote the expansion of nuclear energy worldwide. "We will provide assistance to countries considering nuclear energy in the development of the necessary infrastructure (including nuclear reactors), consider ways for facilitating financing, and will ensure, inter alia, provision of fresh fuel and spent fuel management." (The White House, 2008).

The first meeting of GNEP's Infrastructure Development Working Group, which took place from 12 March to 14 March 2008 in Vienna, Austria, sought to advance this goal. Twenty-two countries and two international organizations were represented at the meeting, which sought to find means of addressing the "infrastructure development challenges facing countries interested in beginning or expanding a nuclear power program," US Department of Energy spokeswoman Angela Hill said in a 28 April 2008 e-mail. Working groups were formed at GNEP's first steering committee meeting last December (see GNEP Watch, No. 4).

One focus of GNEP has been to develop so-called grid-appropriate reactors. These would be small reactors, typically between 250 and 500 megawatts, which are seen as more affordable and practical for developing countries than the 1,300 megawatt commercial light-water reactors that are typical in developed countries. GNEP supporters see the reactors as a way of coping with what is anticipated to be surging energy and electricity demand in developing countries. The International Energy Agency has anticipated that global energy demand will be 50 percent higher in 2030 than it is today, with 70 percent of this demand expected to come from developing countries (Law and Health Weekly, 2008).

In addition, the US Energy Department is seeking to develop a private-public partnership to develop a design for such a reactor and then win Nuclear Regulatory Commission approval for the design in order to ease its sale overseas (Law and Health Weekly, 2008; DOE, 2008).

Nuclear vendors have difficulty obtaining financing from commercial banks because of long payback periods, regulatory uncertainty, and perceived safety dangers. In addition, the availability of government financing for such efforts is quite limited. In the United States, only the Export-Import Bank is involved in such financing. And none of the multilateral development banks grant loans or loan guarantees to nuclear programs, although the World Bank is studying the prospect (US Non-Paper, 2008).

In an effort to ensure reliable supplies of fresh enriched uranium fuel and thus discourage countries from building their own enrichment facilities the first meeting of the GNEP Reliable Nuclear Fuel Services working group took place on 31 March and 1 April 2008 in Wilmington, North Carolina. The two-day meeting "took the first steps in assessing legal and regulatory frameworks at the country level to determine gaps and areas of commonality for establishing the supply frameworks," US Department of Energy spokeswoman Hill said in her e-mail.

No mention was made of steps taken to help countries cope with their spent fuel, a major concern of potential recipients. But the United States has been circulating some ideas for discussion to Russia, another member of GNEP (US Non-Paper, 2008).

In addition, the administration still has to convince some skeptics that the overall effort is worthwhile. Representative Peter Visclosky, an Indiana Democrat who chairs the House Energy and Water Appropriations Subcommittee, questioned the administration's efforts at a 3 April 2008 hearing of his panel, asking a senior Energy Department official why his agency "thinks it has a mission to promote nuclear power internationally? Is that not the job of the International Atomic Energy Agency?"

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Chaired by CIGI Distinguished Fellow Louise Fréchette, the project is a partnership between CIGI and the Canadian Centre for Treaty Compliance (CCTC) at the Norman Paterson School of International Affairs, Carleton University, Ottawa. The project is directed by CIGI Senior Fellow and CCTC Director Trevor Findlay.

The Centre for International Governance Innovation was founded in 2002 by Jim Balsillie, co-CEO of RIM (Research In Motion), and collaborates with and gratefully acknowledges support from a number of strategic partners, in particular the Government of Canada and the Government of Ontario. CIGI gratefully acknowledges the contribution of the Government of Canada to its endowment Fund. / Le Centre pour l'innovation dans la gouvernance internationale a été fondé en 2002 par Jim Balsillie, co-chef de la direction de RIM (Research In Motion). Il collabore avec de nombreux partenaires stratégiques et exprime sa reconnaissance du soutien reçu de ceux-ci, notamment de l'appui reçu du gouvernement du Canada et de celui du gouvernement de l'Ontario. Le CIGI exprime sa reconnaissance envers le gouvernement du Canada pour sa contribution à son Fonds de dotation.

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