More Advanced Nuclear Plants on World Agenda

by Marsha Freeman

The nuclear industry worldwide is gearing up for the introduction of new nuclear plants. According to industry representatives, new manufacturing facilities are being built to meet the anticipated demand, and some long-unused facilities are being refurbished and reopened.

But a "nuclear renaissance" will require a massive rebuilding of America's power, transport, water, education, and other infrastructure. At the same time, the desperately needed skilled workforce and machine-tool manufacturing capacity in our mass-production auto industry are being discarded.

This point was raised at a forum on June 12 held by the Foundation for Nuclear Studies and the American Chemical Society, by Will Madursky, a member of the LaRouche Youth Movement. "Our industrial base is being taken out," Madursky reported he has been telling elected representatives. "Lyndon LaRouche has proposed that we use the plants and skilled laborers and re-tool the auto plants." He asked about Federal action that is needed. None of the panelists responded seriously to the question.

EIR asked about the state of the global industry required to build nuclear plants, and how shuttered auto manufacturing capacity could be used. Tom Christopher, CEO of the American subsidiary of the European firm Areva, stated that the nuclear industry is "quietly rebuilding." He explained that many parts for nuclear power plants are "standard industrial components," and would have to be nuclear-qualified to be manufactured in auto plants.

At the same time that a dozen nations are making plans and beginning construction of a fleet of new, improved conventional nuclear power reactors, an international research and development program is under way to develop more advanced technologies to broaden the application of nuclear energy. These fourth-generation designs include high-temperature reactors that can be used to produce hydrogen fuel from water, to process materials, and to create fresh water through desalination.

The Senate Committee on Energy and Natural Resources has been holding a series of hearings to ensure that the nuclear R&D programs that became law in the National Energy Act of 2005 are being implemented. On June 12, the Committee convened to assess the progress the United States is making in its fourth-generation reactor program.

What quickly became clear is that the underfunded U.S. effort has already been surpassed by efforts in other nations, and that if this country expects to be part of the nuclear renaissance, it is going to have to catch up to the rest of the world.

South Africa Can Help

The Department of Energy Secretary for Nuclear Energy, Dennis Spurgeon, outlined the Department's plan to spend the next five years deciding on a design for a fourth-generation reactor, and then *an additional* ten years, building it. Sen. Larry Craig (R-Id.), pointed out that the Administration request for the FY 2007 budget cut the program by $23 million, to $31.4 million. At that rate, even in 15 years, the $1.2 billion reactor will never be built.

Other witnesses pointed out that there is no reason that developing a high-termperature nuclear reactor should take 15 years. The U.S.A. has had the experience of operating two high-temperature gas-cooled nuclear reactors in the past, and there are other countries building them today.

The Vice President for Nuclear Business Development for Entergy Nuclear—the second-largest operator of nuclear power plants in the country—told the Senators, "Japan has been operating a demonstration 30-megawatt [high-temperature gas-cooled reactor] plant since 1998. China was so encouraged by its 10-megawatt high-temperature laboratory reactor, which began operating in 2000, that it announced in 2004 that it will build a 200-megawatt demonstration reactor."

Dr. Regis Matzie, Senior Vice President and Chief Technology Officer for Westinghouse Electric Company (see interview in *EIR,* Feb. 10, 2006), presented the Senate Committee with a concrete proposal: Form a cooperative effort with South Africa, which will soon start construction of a demonstration Pebble Bed Modular Reactor (PBMR), and shave at least five years off the U.S. timetable.

A new reactor design must be certified by the Nuclear Regulatory Commission before a vendor is able to build it in the United States. Dr. Matzie said that, here too, the South Africa PBMR "can be of help," because that design "is already being reviewed by the NRC." He estimated that U.S. PBMR plant operations could start by 2016.

Is the Administration starting to get the message?

In 2000, the Generation IV International Forum was established by the United States, with participation from Argentina, Brazil, Canada, France, Japan, South Africa, South Korea, Switzerland, the U.K., and Euratom. The purpose was to pool resources to develop the next generation of advanced nuclear power plants, energy conversion systems, and applications. The conspicuous absence of Russia and China in the Forum has been a bone of contention between the United States and the other nations. New members can only be admitted by unanimous consent.

The DOE's Spurgeon stated in response to a question at the hearing, that Russia and China will be "invited" to join, when the Forum meets this July. Washington has finally been forced to drop its opposition.