

# A Renaissance in Nuclear Power Is Under Way Around the World

by Marsha Freeman

On virtually every continent of the world, nations are making the determination that “the future is nuclear.” In an article with that title, printed by United Press International on Feb. 13, Russian Academician and renowned physicist Yevgeny Velikhov stated; “Nuclear power engineering is capable of reassuring all those who are not certain about having sufficient energy today and tomorrow. There is no doubt it is the only source of energy that can ensure the world’s steady development in the foreseeable future. Today, this fact is understood not only by physicists, but also by politicians, who have to accept it as an axiom. . . . Thank God, today’s world compels politicians to think about the future.”

The dramatic shift in international energy policy that is under way, is evident in nations that had expansive nuclear power generation programs in the past, but abandoned them, as well as those that had tried, but until now, had not been allowed to succeed, in going nuclear.

Recent issues of *EIR* have documented the changing global political winds. In Europe, France and Finland are building new nuclear plants, and Germany and Sweden are reconsidering their anti-nuclear policies.

On Feb. 12, the junior environment minister of the Netherlands, Pieter van Geel, said that a second nuclear power station in that nation was now a realistic option. Last year the government rescinded an earlier decision to close down its only operating station, and instead, will extend its operation until 2033.

Russian President Vladimir Putin has announced a sweeping revitalization of his nation’s nuclear enterprise, to include reintegration of the former Soviet Union’s multi-nation nuclear industry, and cooperative agreements with Kazakhstan and Ukraine to mine uranium for nuclear fuel, in exchange for nuclear technology development (see *EIR*, Feb. 10, 2006).

In South Africa, that nation has made a commitment not only to “go nuclear,” but to be at the forefront of advanced nuclear technology by developing, for domestic use and export, high-temperature modular pebble bed reactors (see *EIR*, Feb. 6, 2006). This requires a very substantial commitment of resources.

At a conference of the South African Young Nuclear Professionals Society in early February, Department of Minerals and Energy director Tseliso Maqubela reported that there are about 3,500 nuclear professionals in South Africa now, and

that up to 800 new scientists will be needed within ten years. The government has identified a need to focus attention on higher education, including research projects for Masters and Doctoral students, and is considering how to intervene in rural and township schools to improve the level of achievement in mathematics and science.

The destructive anti-nuclear policies in the United States, which led to the cancellation of 100 nuclear power plants between the mid-1970s and mid-1980s, are being reversed. Electric utilities that already operate nuclear plants have organized themselves into consortia, and are submitting applications to the Nuclear Regulatory Commission (NRC) to obtain approval for the construction of new plants. Sections of the country that project electricity shortages in the near future, increasingly recognize that the solution is to “go nuclear.”

The change of course in the United States has encouraged other nations to re-evaluate their own failed anti-nuclear policies, and helped open the door to countries that are embarking on nuclear power development for the first time. The challenge is immense. As *EIR* has documented, to bring the world population up to a decent living standard would require building 6,000 new nuclear plants by 2050.

## U.S. Playing Catch Up

In August, the Energy Policy Act of 2005 became law. It was well understood by Congressional supporters that in addition to Federal funds for developing more advanced nuclear technology, the government would also have to take some responsibility for ensuring that utilities ordering nuclear plants would not be sabotaged by malthusian officials, or “intervenor” such as “ecologists,” who had been allowed to wreck the nuclear industry in the 1970s.

The new law provides “risk insurance” to protect against unforeseen Federal, state, and local regulatory delays, for as many as six new reactors (regardless of who builds them), that are built under the Nuclear Regulatory Commission’s new combined construction and operating licenses. The NRC has streamlined its licensing procedures, to avoid the previous quagmire, where even after a plant was completed, objections could again be raised, and the owner’s operating license delayed, sometimes for a decade. Although this new procedure will eliminate many intervenor opportunities, the law is there to protect the public interest. Delays costing up to \$500 mil-

lion each, for first two new reactors, caused by the regulatory process or litigation, and 50% of the delay costs for each of the next four plants, up to \$2 billion in total, will be covered.

In recognition of the fact that nuclear power is the most capital-intensive energy technology, the law provides for a production tax credit of 1.8 cents per kilowatt-hour, for the first 6,000 megawatts of new nuclear capacity, for the first 8 years of each plant's operation. Loan guarantees are available for up to 80% of the project cost, to be repaid within 30 years.

A phrase that became popular in the counter-culture "me first" ideology of the past 30 years, in response to the announcement that a project was to be built was: "Not in my back yard." However, communities that are home to an operating nuclear plant know that the taxes the utility pays on the high-value plant pay for their schools and other services, and provide highly skilled, well-paying jobs that create additional indirect employment.

Finally, two decades after the accident at the Three Mile Island nuclear plant, where no one was even injured, more and more Americans have begun to realize they had been

taken for a ride. Nuclear is, in fact, the safest way to generate electricity, and even prominent members of the "environmental" movement, such as Greenpeace's Patrick Moore, have tossed aside silly visions of windmills defacing the landscape, and are backing the nuclear renaissance.

Now, *per contra*, there is a competition between towns and states to try to entice utilities to build new nuclear plants in their "back yards." The Louisiana Public Service Commission passed a resolution last July, to support the addition of a new reactor at River Bend in St. Francisville, as did the local Chamber of Commerce. The Calvert County Board of County Commissioners, in Maryland, passed a resolution last summer supporting the selection of Calvert Cliffs for a new reactor. Similar resolutions have been passed by the city of Oswego, New York, in Fort Gibson, Mississippi, and in Claiborne County, Mississippi.

On Feb. 4, two state legislators from Wisconsin announced that they will introduce a bill to make it easier to build new nuclear plants in their state. The state Department of Administration reports that Wisconsin could face an elec-

## Mexican LYM: Use 'Nuclear Option' To Stop Fascism

*The policy statement excerpted here was released by the LaRouche Youth Movement (LYM) of Mexico on Feb. 7:*

No, not a nuclear *bomb*. Nuclear energy.

In late January, Mexico's Energy Minister announced that the Fox government would promote the building of a single, new nuclear energy plant in the country, in a location to be decided before Fox leaves office in December 2006.

The LaRouche Youth Movement of Mexico does not think that we should be building *one* nuclear plant: We need 20! We have to return to the nation-building policies of ex-President José López Portillo, including building 20 nuclear energy plants, dozens of new industrial cities especially near the coastline, and in general exchanging our oil for advanced technology. We have to rapidly industrialize, achieve food self-sufficiency, and—most important of all—create millions of new productive jobs, and educate and train the new generations of young Mexicans for them, so that our nation's most valuable resource, its people, stay at home to contribute to national development.

*Ya basta* with the brain-drain, where our population is being dumped into slave labor conditions in the United States!

Such a nuclear-centered development program is the

key to Mexico's 2006 Presidential elections. This is the opportunity for Mexico to end the nightmare of the last two decades of neo-liberal economic policies; to drive all vestiges of synarchism from national politics and return to its republican roots; and to resume its rightful, historical role as a leader in Ibero-America. This is the opportunity to put an end to the fascist economic policies of the synarchist international bankers globally. . . .

### Why Nuclear?

Natural gas is fine. Hydroelectric plants are okay. But the only path to true energy independence and technological advance is *nuclear energy*. . . .

But there is a deeper reason for going nuclear. When we choose an energy source, the critical consideration is what the physical economist Lyndon LaRouche has called "energy flux density." This means that the way the source of energy is *organized*—its density of economic application—is as important as the absolute amount. For example, it is not the same thing to have 60 kilowatts of energy in the form of a thousand 60-watt light bulbs, as it is to organize those same 60 kilowatts in the form of a *laser beam*. The laser can do *work* that a thousand light bulbs cannot. (It's sort of like the difference between having a real President, versus a dim bulb, in the Presidential palace). . . .

Lyndon LaRouche and José López Portillo were right—and Mexicans should have the courage to admit it. We have been on the wrong path for the last 25 years, and 2006 is the year to change that. Stop acting like Sancho Panza: Only a burro refuses to budge, when his actions for the last 25 years have proven to be a mistake.

tricity capacity shortage as early as next year, and must get 6,300 megawatts of new capacity online by 2016.

## U.S. Neighbors

In Canada, the Ontario Power Authority is circulating a plan recommending up to \$40 billion of nuclear power plant investments, which would include building 12 new nuclear plants. By 2025, nuclear power would provide half of the province's electricity. The Authority warns of a looming electricity crisis, where in two years, Toronto risks rolling electricity blackouts.

In addition to the recent expression of interest in expanding nuclear energy in Mexico (see box), Ibero-America, taken as a whole, has among its nations the infrastructure and manpower needed for advanced nuclear research and development, and a full-scale nuclear industry.

On Nov. 30, the Presidents of Argentina and Brazil signed a "Joint Statement on Nuclear Policy," to increase cooperation and the integration of both of their nuclear power and research plants, nuclear medicine programs, and industrial applications. Both nations have operating nuclear plants, and Argentina designs, builds, and exports indigenous small research reactors. Last year, Brazil won the political battle with the international non-proliferation mafia to complete development of its uranium enrichment facility. It will produce fuel for nuclear power plants domestically, and eventually, enough for export.

Recently, both Venezuela and Chile indicated their interest in civilian nuclear power. The resources of Argentina and Brazil in particular, can lead the long-overdue nuclear renaissance in Ibero-America.

## A Second Tier in Asia

Throughout the 1970s and 1980s, a first tier of Asian countries went nuclear, buying, and then in some cases licensing for local production, reactors and technology from the United States, Canada, and Europe. By 2005, Japan had 56 operating plants, South Korea had 20, India had 15, China had 9, and Taiwan had 6. Japan, India, South Korea, and China have also developed domestic nuclear plant manufacturing, and research and development programs, and in some cases are ahead of the United States in next-generation technology.

The two nations with the world's largest populations must go nuclear for their very survival. India has eight plants under construction, a fast-breeder reactor, and plans for a total of 24 new power plants during the next two decades. In China, two plants are nearing completion, a half dozen more are nearing the start of construction, with a total of 30 or so plants planned over the next two decades (see *EIR*, April 29, 2005 and Nov. 18, 2005). More recently, nations in Asia that have not yet built nuclear power plants are doing studies, contacting vendors, and making plans.

Anatolia news agency reported on Feb. 8, that after a tour of the Lake Anna nuclear plant in Virginia, and a meeting

with Energy Secretary Samuel Bodman, Turkish Minister of Energy and Natural Resources, Hilmi Guler, told reporters in Washington that Turkey needs an additional 54,000 megawatts of electricity by 2020. It projects that nuclear energy will provide 5,000 megawatts of that. Currently, Turkey has no nuclear plants. Asked by a skeptical reporter if Turkey had a solid plan to meet its requirements, Guler replied that Turkey does, and that it must invest \$128 billion in energy supply over the next 15 years. He described nuclear power as an "utmost priority," due to the increase in oil and gas prices and need for multiple sources of energy.

One year ago, Minister Guler announced that Turkey was spending \$5 million to re-establish its office of nuclear energy. Turkey had been in discussions with Canada and the United States in the mid-1990s, regarding purchase of nuclear reactors, but this initiative was abandoned in the year 2000, thanks to the International Monetary Fund, which said it would not approve the plants, even if Canada financed their purchase.

In mid-December, Indonesia's state-owned electricity company, PLN, announced that it had signed a memorandum of understanding with South Korea's Electric Power Corp., and the Korea Hydro & Nuclear Power Company, to carry out a one-year feasibility study on building the country's first nuclear power plant. The study will evaluate the purchase by Indonesia of Korea's POR-1000 technology.

Feasibility studies for such a plant had already been carried out by Indonesia's National Atomic Power Authority (Batan) in the past, which considered a site at the foot of Mount Muria in Central Java. There is no nuclear plant included in PLN's development program until 2015, but were investors to show interest, PLN would be eager for discussions, generation director Ali Herman Ibrahim told *Asia Times* on Dec. 16, 2005.

Vietnam has also expressed interest in building its first nuclear power plant. It has discussed the possibility of buying a small, floating nuclear power plant with Russia, which design is based on Russia's nuclear-powered ship reactors. These 50-MW modules do not require the on-land infrastructure of conventional plants, and are versatile and can be deployed quickly. Russia has been in discussions with China to gain financing to build the manufacturing infrastructure needed to build the small reactors.

Even the island nation, and financial haven of Singapore may go nuclear. Since 1974, Singapore, which has been a member of the International Atomic Energy Agency since the mid-1960s, has been involved in 25 projects relating to nuclear physics and medical applications. A recent article proposes that even for a small country, which is devoid of any natural resources, "nuclear is an option that merits serious consideration."

The ongoing renaissance in nuclear power will accelerate the development of the next generation of fission power technologies, and then, as Academician Velikhov has been fighting for, more advanced nuclear fusion.