Argentina's ambitious nuclear program

by Delia Arajo de Lozano

Argentina's recent announcement that it had achieved the enrichment of uranium through a process of gaseous diffusion reaffirmed that country's pre-eminent role in Third World nuclear technology. Argentina has had a functioning nuclear research program since Gen. Juan Perón established this as a priority in the early 1950s. In 1974, the country became the first in Ibero-America to actually produce commercial nuclear power at its Atucha I plant near Buenos Aires.

Over the last two to three years, the imposition of strict IMF conditionalities has decimated nearly every single Third World nuclear program. Mexico's plan to build 20 plants by the year 2000 fell victim to enforced budget-cutting; Brazil's program is similarly stalled. Apart from reports that Pakistan is re-launching its nuclear energy program, only two such Third World nuclear programs are still standing in the face of the IMF onslaught: that of India, and Argentina's plan.

Argentina's new enrichment plant is thus the result of the strongest nuclear research program in Ibero-America. The country's nuclear program has been designed with three aims in mind:

- development of scientists and technicians with mastery of the entire nuclear process;
- increasing the nuclear power generating capacity for industrial development;
- increased participation of Argentine capital in nuclear plant construction.

The program is based at three Atomic Centers—Ezeiza, Constituyentes, and Bariloche—with a total of four research nuclear reactors (Constituyentes has two). Another three research reactors are located at universities throughout the country. In addition, Argentina has two on-line commercial Pressurized Heavy Water Reactors (PHWR)—Atucha I and Embalse—and another under construction (Atucha II). Three more nuclear reactors are planned—also of the heavy water/natural uranium variety. Argentina's nuclear program also includes a heavy water production plant, which is under construction and scheduled for completion in 1985.

The uranium enrichment process was developed by Argentine scientists, using the proven technique of gaseous diffusion. This is based on the small difference in the mass of molecules that distinguish two isotopes of uranium, U-235 and U-238. Natural uranium contains 99.3 percent of the heavier isotope, U-238, which is not fissionable, and therefore not useful as nuclear fuel. To separate out the fissionable U-235, uranium hexafloride gas is pumped through thousands of miles of permeable material that acts as a sieve. The lighter U-235 isotope penetrates into that permeable material faster than the heavier U-238 isotope compound, and thus is separated from the heavier isotope.

Argentina intends to use this new capability to supply its medical research reactors, as well as to enrich the natural uranium it uses in its heavy water reactors by about 1 percent. This will reportedly double the fuel efficiency of its two operating plants, and save the country around $70 million per year.

Not only Argentina but all the nations of the continent, and potentially the entire developing sector, are the beneficiaries of the fuel-enrichment breakthrough. Argentina has already been exporting nuclear technology for a number of years. It has supplied Peru with a zero-power training reactor and a research reactor. Now Argentina can export the entire range of nuclear technology, including uranium enrichment. The enriched uranium itself can also be exported, for example to countries like Brazil, which need it to fuel their plants.

The U.S. media have had a field day trying to present the Argentine achievement as proof that they are planning to "build the bomb." The fact is that the enrichment of uranium is only one of the processes required to produce nuclear weapons. The purities necessary for bomb-grade uranium are far beyond the 20 percent level envisaged by the Argentine fuel program. Still, the Kissinger crowd at the State Department and elsewhere insist that Argentina sign the Nuclear Non-Proliferation Treaty, which would allow Argentine nuclear plants to be "inspected." The president of Argentina's Atomic Energy Commission, Adm. Castro Madero, last week reiterated his country's flat refusal to sign the treaty, whose real objective is to sabotage the technological development of the Third World.

Neighboring Brazil, however, is not letting itself be affected by such scare stories. "Our countries have developed excellent collaboration on nuclear subjects, and I am sure that the Argentines will continue working for the mutual benefit and for the social and economic advancement of the Latin American community," said Brazilian President João Figueiredo. The chief of Brazil's Navy, Adm. Maximiano da Fonseca, stated: "The existing Brazil-Argentina agreement on nuclear collaboration opens good prospects for Brazil to share this technology achieved by Argentine scientists on uranium enrichment. . . .[Brazil] has never been in competition" with Argentina, he stressed.