

TABLE 1
The 'Mekong Cascade,' 1990 Specifications

Project*	Reservoir elevation	Reservoir area (sq km)	Net storage (mil. m)	Installed capacity (MW)	Annual energy (GWh)	Lowflow increase (m/s)	Cost 1990 (mil. \$)
High Luang Prabang	355/320	780	15,390	3,200	16,210	850	2,560
Pak Lay	275/255	370	5,580	2,500	12,730	430	2,190
Pa Mong	210/192	610	7,310	2,250	10,700	470	2,000
Bung Kan Regulator Dam	NA	NA	NA	NA	NA	NA	NA
Ban Koum	125/123	400	620	2,400	11,230	120	2,260
Stung Treng	80/75	5,000	18,900	5,400	25,840	1,460	4,100
Sambor	40/38	1,160	2,500	3,200	16,200	260	2,850
Subtotals		8,320	50,300	18,950	92,910	3,590	15,960
Tonle Sap	10/3	61,360	54,470	NA	NA	2,500	2,600
Totals		69,680	104,770	18,950	92,910	6,090	18,560

*Numbers such as 355/320 indicate elevation in meters above MSL (mean sea level) of reservoir full supply level (FSL) and low water level (LWL) respectively.

one of the designated “world” projects of the Japan-based Global Infrastructure Fund over 25 years ago.

History of Plans: On three separate occasions since World War II, when peace seemed close at hand—upon the signing of the 1954 Geneva Accords, in 1972-73 as the Vietnam War was winding down, and again in 1990—plans for harnessing the Mekong River have been put forward to foster regional stability and cooperation. But as of the end of the century, the projects still need backing.

In May 1947, the UN Economic Commission for Asia and the Far East (ECAFE), headquartered in Bangkok, began a study, “Preliminary Report on Technical Problems Relating to Flood Control and Water Resources Development of the Mekong—An International River,” which was published in May 1952. Many engineering possibilities were posed, and subsequent work identified priority sites and multi-purpose projects, reviewed by experts, including from India, Japan, France, and the United States. ECAFE expert P.T. Tan and an international team produced specific dam proposals in 1956. In 1958, a UN Technical Assistance team issued an evaluative report, overseen by Lt. Gen. Raymond Wheeler (ret.) of the U.S. Army Corps of Engineers. The “Wheeler Report” formed the basis for much of the work done on the Mekong through the 1960s.

An Interim Mekong Committee, originating in 1957, has overseen studies, planning, and implementation. Its Mekong Secretariat is in Bangkok. A comprehensive plan for 1970-2000 was commissioned by this committee, whose 600-page report identified 180 development projects, of varying size and priority. But, the pressure of recent years has been to *scale down* or abandon major projects.

Vast Benefits: As of the early 1990s, consumptive use of Mekong Basin waters for irrigation and water supply amounted to less than 1%. At 254 megawatts of installed capacity, the degree of exploitation of hydroelectric power

then was also only in the 1% range. Thus, the benefits of the river development projects for energy and irrigation potentials are immense. The installed capacity of the five power projects shown in Table 1 is 18,950 MW. Controlled water flow can allow fabulous increases in per-hectare output of rice and other crops, double-cropping, and millions of tons of increase in annual agricultural output.

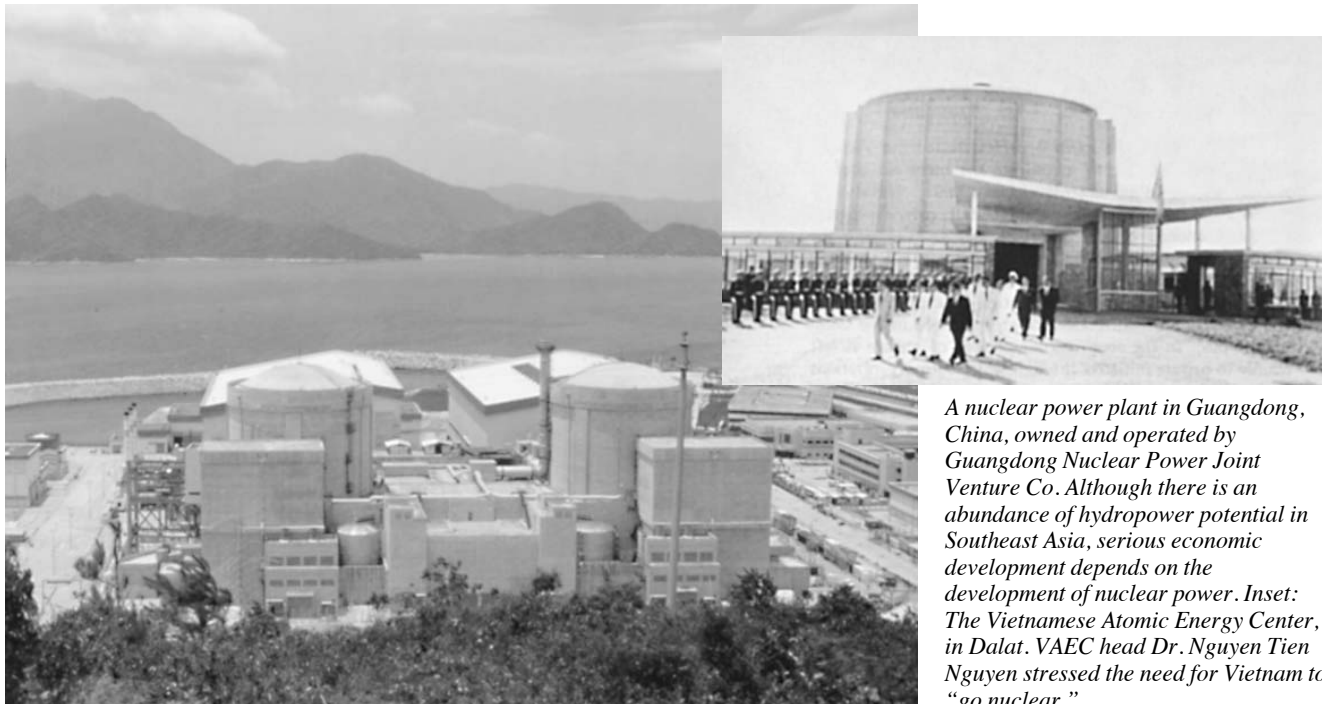
Southeast Asia Needs Nuclear Energy

by Marcia Merry Baker

Shown on p. 34 is a photograph of the Guangdong Nuclear Power Station, in Guangdong, China, published on the cover of the March-April 1998 *Nuclear Plant Journal*. The plant, a two-unit pressurized water reactor, from the French company Framatome, with each unit rated at 985 megawatts-electric, is owned and operated by Guangdong Nuclear Power Joint Venture Co.

In the U.S. Atoms for Peace plans, developed in the 1960s, nuclear power plants were seen as the “motors” for “nuplexes”: nuclear-power-centered new cities, with complexes of agriculture, processing, and various modern economic activities. Although the nuplex idea fell victim to the anti-nuclear, anti-development movement, it is key for nations that intend to develop.

China has launched an ambitious program to expand its nuclear power base, including research into advanced nuclear plant design. In 1997, construction began on three new nuclear power plants in China. In the same year, South Korea brought a nuclear plant on line, and started construction for



A nuclear power plant in Guangdong, China, owned and operated by Guangdong Nuclear Power Joint Venture Co. Although there is an abundance of hydropower potential in Southeast Asia, serious economic development depends on the development of nuclear power. Inset: The Vietnamese Atomic Energy Center, in Dalat. VAEC head Dr. Nguyen Tien Nguyen stressed the need for Vietnam to “go nuclear.”

another plant. South Korea is now about 41% nuclear, with 15 nuclear plants in operation and 3 under construction.

Japan and France are world leaders in nuclear-generated electricity; both have a relatively high proportion of nuclear-produced power to total power production: 36% of Japan’s electricity, and 76% in France, was from nuclear, as of April 1999.

Throughout the nations of the Mekong River Basin region, which have huge hydropower potential, nuclear power is, nevertheless, a vital part of future economic development. In Vietnam, in particular, the lower-lying topography, and dependence on fossil fuel imports, underscore how essential nuclear power is.

Vietnam: Go Nuclear

In 1996, the Vietnam Atomic Energy Commission (VAEC) forecast that energy demand would reach 100 billion kilowatt-hours (kWh) by the year 2010, though demand was only in the range of 14 billion kwh at the time. The VAEC calculated then that even with full exploitation of hydro-power—providing for 70% of the need in the mid-1990s—plus thermal power plants using coal and gas imports, Vietnam would nevertheless still fall far short of its projected requirements in the new millennium, unless it went nuclear.

The VAEC expanded its nuclear power center over the 1990s, and conducted a survey on nuclear power development. VAEC head Dr. Nguyen Tien Nguyen stressed the need to “go nuclear.”

Vietnam had at that time only a small research reactor, in Dalat, used for research and production of radioactive mate-

rial (for medical use). In 1995, it was estimated by the semi-official *Vietnam Investment Review*, that a proposed new nuclear plant would cost \$2-3.3 billion, and should be started in 2003 for completion by 2012-15. This was the recommendation of a group of officials and academics, aided by South Korean and Japanese organizations, who made their proposal to the Hanoi government. They called for a 600-1,000 MW plant to be built in south-central Vietnam.

The project leader for the proposal, Le Van Hong, estimated that demand for power would increase 8% per annum by the turn of the century. By 2015, nuclear power would be cheaper than electricity generated by coal, oil, or gas.

However, the financial turmoil that hit the entire East Asian region in 1997 caused massive cutbacks in infrastructure investment. Vietnam was relatively less affected by the regional crisis, in part, because its currency, the dong, is not convertible, but most investment into Vietnam comes from its Asian neighbors, which were struck.

In July 1998, Hanoi shelved 27 state projects (national and local). Basic plans were cancelled or postponed, including the trans-Asia road linking Vietnam, Laos, Cambodia, and Thailand, which was started in 1995 as part of an Association of Southeast Asian Nations-wide plan; the 1,800 kilometer North-South Highway; and the Lower Yazun reservoir and canal network for agricultural irrigation in the Central Highlands.

Investment in the necessary high-technology infrastructure awaits the adoption of a new international credit system, like LaRouche’s New Bretton Woods, that will facilitate low-interest credits for long-term development.