

Asian nations must go nuclear for the 21st century

by Ramtanu Maitra

“No power is more expensive than no power.”

—Dr. Homi Bhabha, founder of India’s nuclear power program

In the negotiations between the United States and North Korea on the dismantlement of North Korea’s alleged bomb-making capabilities, the Clinton administration—in contrast to the strong anti-nuclear stance coming from Washington in the last two decades—agreed to guarantee to North Korea the construction of two light-water nuclear reactors totaling 2,000 megawatts to replace Pyongyang’s two plutonium-producing reactors. Implied in the agreement is Washington’s acknowledgment that North Korea is right in its assessment that its economic survival depends on nuclear energy.

A nuclear-energy capability is not only a requirement for North Korea, but an urgent necessity for every country in Asia—a fact more and more governments in the region are coming to recognize. Without nuclear energy, Asian countries cannot break the barriers that currently place severe constraints on their capacity to industrialize and raise the standard of living of their populations. Conversely, those countries (Japan, South Korea, and Taiwan) that have built up a strong nuclear power sector, have produced and sustained growing industrial economies. As **Table 2** (p. 28) shows, the energy consumption of most Asian countries is at least a full order of magnitude below the levels consumed by industrial Taiwan, South Korea, and Japan.

Asia today is home to more than 3 billion people. Over 2.1 billion of those people (69%) live in rural areas, most of them engaged in low-technology subsistence farming. The households and farms of most of those 2.1 billion rural dwellers are without any electricity at all. Of the 31% of the population that is “urbanized,” many of these are unemployed or underemployed, brought to the cities out of desperation. In China, this “floating population” of itinerant labor exceeds 200 million. Lack of cheap energy has prohibited the growth of industry that can absorb the growing labor force. Without nuclear energy to bring about a reversal of the current



A technician sterilizes medical products at Bhabha Atomic Research Center in Trombay, India. Facilities like the BARC foster the benefits of nuclear technology in many fields, including medicine and agriculture.

economic trend, countries such as China, Thailand, India, Pakistan, and the Philippines face breakdown crises.

Asia cannot avert such a breakdown crisis and enter the twenty-first century without nuclear energy. Why? Although some of the larger nations of Asia (China, India, and Indonesia) are well endowed with some or all of the conventional power generation sources, such as coal, oil, natural gas, and hydropower, the full utilization of these resources carries with it many additional and prohibitive costs. First are the transport costs for bringing coal, natural gas, or water to where it is required. In China and India, over 50% of the rail system is tied up in hauling coal for power generation from one section of the country to another.

In some Asian countries, topographical characteristics permit no easy use of conventional power generation resources. In India, the hydropower potential is estimated at close to 90 gigawatts, not a huge amount considering the long-term requirement of this perennially power-short country. To utilize even this amount of hydropower potential requires harnessing such mammoth rivers as the Ganges and Brahmaputra, and their equally large tributaries—an extremely complex and long-term project. In addition, most of India's hydropower potential is located in the north, generated by water carriers coming down the southern face of the Himalayas. Power generated in the northern rivers must be carried thousands of kilometers south to meet the shortfall in the southern grid system—a highly wasteful enterprise. Even in countries that have easy access to hydropower, hydroelectric power stations require on the order of 10 to 20 times more

material for their construction than nuclear plants.

Current reliance in most Asian countries on conventional power sources is also producing high levels of air and ground-water pollution. The cause of this pollution is the use of low-technology-based manufacturing processes, and indiscriminate use of coal for bulk generation. Countries without nuclear capabilities also deprive themselves of the benefits of nuclear technology in many fields, including medicine and agriculture. Nuclear desalination—as proposed in the Palestine Liberation Organization-Israeli accords—is only one area in which nuclear energy is the cheapest method to solve a problem. Nuplexes (nuclear-powered agro-industrial complexes) as proposed by the Oak Ridge National Laboratory in Tennessee, are the fastest route to building new cities whose output both raises agricultural productivity and absorbs labor in high-technology production.

Most significant, as Jonathan Tennenbaum pointed out in the *Emergency Plan for China* designed by *EIR* (see Feb. 11, 1994 issue), “the power density of coal (and other conventional fossil-fuel technology) imposes . . . a low level of productivity. . . . Per unit of thermal (or electric) power generated, a present-day nuclear power plant requires approximately 60,000 times less fuel by weight than a power plant using coal, oil, or gas. This fact reflects the vastly larger energy flux-density intrinsic to nuclear reactions as compared with processes of chemical combustion.”

Given the monumental and urgent job of transforming the economies of Asia, the efficiencies and high-technology spin-offs of nuclear energy are the *only* way that Asia can go.