

The world is going nuclear

In Western Europe, Japan, and the East bloc, nuclear energy is the power source that will fuel the future. Their programs reflect a commitment to develop nuclear energy not only for domestic use, but for export and to foster cooperation between East and West.

The Soviet Union and West Germany are now considering proposals for a "shared" energy grid which sees energy from nuclear power as primary.

The following is a breakdown of these nuclear development programs.

France

The national plan: The national nuclear energy expansion program will meet the goal of providing 54 percent of the country's electricity and 20 percent of total energy consumption by 1985.

Current nuclear capacity: In 1978, nuclear power plants provided 13 percent of France's electrical energy. As of March 31, 1979 there were: 15 units in service, including one breeder reactor, with a combined output of 7,350 MW; five to start operating later this year, with a combined output of 5,700 MW; 27 under construction.

France is committed to supplementing its pressurized water reactors with the breeder reactor, which produces more fuel than it consumes. One experimental 250 MW plant, the Phenix, is already in operation and the 1,200 MW Super Phenix is under construction.

The Soviet Union

The national plan: The USSR will be generating 30 percent of its electric power from nuclear power plants by the year 2000. The Soviets are working on controlled thermonuclear fusion power research and the mass production of nuclear reactors.

The Soviets' revolutionary complex of factories called "Atomash" will complete its first reactor in 1980. Atomash is the first step of American developed assembly-line technology into the nuclear age. The Soviets have standardized reactor design in several sizes: Atomash will turn out 400MW and 1,000MW light water reactors and eventually a larger 1,500MW model. Each takes three years to build with the third year devoted to testing and quality control.

Eastern Europe

CMEA heads of state in Moscow, June 26-29 approved a 10-year nuclear power development program which calls for constructing 37,000 megawatts of new atomic capacity for electric power generating between now and

1990 in the non-Soviet European members of the CMEA plus Cuba alone.

The USSR and other CMEA members have offered to expand their nuclear power networks into Europe, starting with an interface between the electric power transmission grids of Eastern and Western Europe, to allow greatly increased efficiency by taking advantage of the wide time zone differences—with varying peak usage hours—across the continent.

Italy

The national plan: A plan formulated two years ago by the Italian state electrical utility ENEL called for nuclear power to provide 60 to 70 percent of Italy's energy needs by the year 1991.

In the spring of 1978 the first big plant was brought on line. This was the 850 MW Caorso plant. The ENEL plan calls for 12 more plants on-line by 1987, at 1,000 megawatts each, and between 43 and 59 new plants by 1991, all at 1,000 megawatts. By the year 2,000, there should be 90 to 120 functioning nuclear plants in the north and south of Italy, the last ones at 1,250 megawatts each.

Current nuclear capacity: As of spring 1978, four nuclear power plants were operating in Italy, with a combined production capacity of 2,800 MW.

West Germany

The national plan: When Helmut Schmidt became chancellor of West Germany in 1974, construction of 40,000 megawatts of new electrical generating capacity was projected by 1985.

Current nuclear capacity: There are 15 nuclear power stations operating in West Germany today. They supply 13 percent of national electricity supply. Twelve plants are under construction which would add nearly 15,000 MW to the national generating capacity, although work on three has been temporarily halted by court action.

Japan

Between 10 and 20 percent of Japan's electricity production is nuclear. By 1990, the government plans that nuclear generation will supply at least 20 percent of national consumption. Japan now has 20 operating nuclear plants with a total of 12,129 MW generating capacity. Six new plants, with a projected capacity of 4,189 MW are in construction and four additional stations slated to generate 5,831 MW are in the planning stage.