

Nuclear energy base crucial to European industrial reconstruction

by William Engdahl

West Germany's excellent nuclear industry has had its share of troubles, but in alliance with the French, a nuclear export boom could transform Eastern European economies.

Two developments which took place within the past year illustrate the paradox of West Germany's nuclear electric industry. One was the decision to abandon the Wackersdorf nuclear fuel-reprocessing facility in Bavaria before it was complete. The construction site had been the scene of violent demonstrations by communists and fanatical ecologists. The second was the announcement by Dr. Klaus Barthelt of KWU and J.C. Leny of Framatome that the two large West European nuclear reactor makers would form a new joint company, Nuclear Power International, a 50-50 partnership between the leading makers of French and German nuclear reactors, for export of nuclear plant technology to third countries.

Export potentials

In the announcement of its formation last April, NPI stated its initial aim to economize resources in order to capture a significant share of the dwindling Third World export market, particularly India and China. Clearly, events in Eastern Europe since the Berlin Wall was breached on Nov. 9 have dramatically transformed the potentials for nuclear export. The combined capacities of Framatome, France's nuclear vendor, and Siemens's KWU create one of the world's most important power engineering groups. In addition, Siemens (KWU) and Asea-Brown Boveri have been in on-again/off-again negotiations with Moscow over export of high temperature reactor technology based on the Hamm-Uentrop reactor design.

Ironically, abandonment of Wackersdorf and the merger of Framatome and KWU export capacities were both part of a strategic reorganization which, if carried to its full conclusion with necessary political support from both Bonn and Paris, could form the seed-crystal for regeneration of European nuclear industry at the time that its capacities are most urgently needed in Eastern Europe, the U.S.S.R., and Western Europe, as well as in developing countries such as Brazil and Pakistan.

In contrast to the promising Franco-German nuclear developments of the past year, the situation in the United States, the world's largest nuclear energy consumer, is nothing short

of abysmal. Despite the fact that White House Chief of Staff John Sununu holds a doctorate in nuclear engineering, and despite much fanfare about a renaissance of nuclear energy, the Bush administration has not made any significant change in a situation that is disastrous for the future of nuclear electric power. The last time a U.S. electric utility ordered a nuclear power plant was in 1978! Studies project massive power shortages in the end of the present decade, equivalent to 100 new 1 GigaWatt nuclear power plants or 200 coal-fired plants.

German nuclear capacities

Despite an intensive anti-nuclear campaign since the mid-1970s, West Germany has managed to complete, albeit with delays, its planned nuclear program. The problem is that this is not enough capacity for the greatly expanded industrial demand posed by Eastern European development.

From 1975, West German nuclear installed capacity rose from 3.5 GigaWatts (electric), approximately four average 900 MWe units' worth, to almost three times that by 1980, or 10 GWe. And during the last decade, despite the shrill cries of the Greens and others, it continued to grow. By 1985, nuclear capacity had passed the 19,000 MWe level, and today it stands at 22,700 MWe or 23 GWe. If one uses a standard of 1 GWe to power the electricity needs of a modern city of 1 million, this gives a measure of the significance of these numbers.

In terms of share of overall electricity generation in the Federal Republic, nuclear has also grown steadily through the past decade. As of 1989, West German nuclear reactors provided a significant 39% of all electric generation. This places Germany a qualitative step beyond the stagnant United Kingdom, which has a pathetic 19.3% nuclear electric share. But the German share more appropriately should be compared with France's achievement, which in 1989 reached 70% of all electricity from nuclear generation, the world's current high.

If we take a per capita nuclear generation figure, comparing Britain with Germany, the German case comes up looking rather healthy, with a relative 36% more nuclear electric per capita. In per capita terms, Germany today lags behind the United States, though not by far, at 87% of U.S. levels.

Effects of succumbing to anti-nuclear lobby

But compared with France, German failure to develop its original 1974 nuclear program shows. In per capita terms, Germany today is only 38% the "nuclear electricity intensity" of France. Had the Federal Republic not succumbed to the anti-nuclear pressures of the late 1970s, and had she held, as France did, to her 1974 plan of 45 GWe installed by 1985, today West German nuclear electric generation in per capita terms would range a far healthier 75% that of France today. It would also have an extraordinarily cheap power reserve to fuel the rates of industrial growth required into the coming decade.

While France's EdF is currently selling its "excess" electricity from its nuclear reserve, the French Atomic Energy Authority CEA reports that such "surplus" capacities are all but contracted until the end of the century, and little new capacity remains to meet a growing industrial electric demand, especially in light of Italy's vote in 1987 to ban nuclear power, which simply forces Italian industry to import French nuclear-generated electricity. The per capita U.S. nuclear electric intensity today is 43% that of France.

The West German nuclear program, before the agreement in 1989 with France, risked the fate that has met the U.K. nuclear reactor program. The German fast breeder program was a dead letter. The most promising new reactor technology, the high temperature reactor (THTR-300), the operational prototype at Hamm-Uentrop, was being decommissioned in 1989, despite the fact that it began low-power test operation only in June 1987. The initial tests did reveal certain technical design problems with the fuel pebble discharge, which, reportedly, have since been solved.

But it has been the ideological hostility of Gov. Johannes Rau, and the Social Democratic government of the state of North Rhine-Westphalia, which has killed one of the world's most promising future nuclear reactor technologies. Using the fact that the Green campaign against Nukem GmbH in Hanau had jeopardized the future reliability of the plant's unique fuel supply source, Rau's government refused to guarantee a higher risk insurance to the consortium, ensuring the premature closure of the multi-billion deutschemark project.

The second major setback for the German nuclear industry was the fate of the Wackersdorf nuclear-reprocessing facility. In July 1989, the first contract for an alternative use for the Wackersdorf construction site was signed . . . to build a kitchen utensil company, instead of a facility for reprocessing spent nuclear fuel from German reactors.

The cancellation of Wackersdorf leaves German nuclear reactor utilities dependent for long-term reprocessing of spent fuel rods on British Nuclear Fuels Ltd. and on France's Cogema. With Britain's own nuclear power program having been devastated by the free market "privatization" lunacies of the Thatcher government last year, the main future security

of the German nuclear base clearly depends on building on a base of economic cooperation between France and the F.R.G.

What now?

The status of German nuclear construction and research for the past decade, perhaps more than anything else, reflects the stagnant "steady state" nature of overall German industrial expansion. While, as with steel, and subsequently with the vital machine tool sector, there has been a quality intensification of key sectors of German industrial productivity since the crises of 1979-82, the physical scale and impulse of the Federal Republic's industrial sector has been largely metastable since the recession of 1980-82.

This is clearly not a healthy state, either in nature or in physical economies. If West German industry is to be the driving force for qualitative expansion of European and worldwide industrial capacities, the country requires a dramatic improvement in the nuclear electric efficiency and generation capacities into the end of this decade.

If significant new openings for nuclear technology export are not permitted, the potentials of productive triangle of rail-based infrastructure linking Paris; Vienna, and Berlin, as Lyndon LaRouche has proposed, will be aborted in a few short years.

Fortunately, the prospects are not altogether black. The agreement signed last year between Framatome and KWU (Siemens) to create Nuclear Power International, to make and export to third countries nuclear reactors, can form the basis for creation of the world's most important nuclear plant engineering capability.

In addition, in June 1989 Veba AG signed a Memorandum of Understanding with France's Cogema to create a new joint venture company, 49% owned by Veba and 51% by Cogema, to own and operate the new reprocessing plant, UP-3, now under construction at La Hague, France. This was clearly the resolution of the question of Wackersdorf's future, which was part of a larger Franco-German economic agreement reached between Chancellor Helmut Kohl and President François Mitterrand last year. As the future of Europe depends on the strength of German-French economic and political cooperation, things could be far worse.

Talks between the HTHR consortium (Siemens-ABB) and the U.S.S.R., for construction of future HTR reactor modules in the U.S.S.R., have so far gotten off to a shaky start, with the Soviet side signaling stop-go/go-stop. But the potentials here, despite the political demise of Hamm-Uentrop HTR, are considerable for export of German HTR reactor technology to rebuild Eastern Europe's dilapidated and inefficient electric power grid.

Clearly, a closely integrated merging of the combined potentials of French and German nuclear industry and engineering is vital to meet the requirements of rebuilding Eastern Europe's inefficient and inadequate electricity base.