

Asia is going ahead with nuclear power

by Rainer Apel

The Asians are totally unimpressed by ecologism, and will go ahead with nuclear power development, Friedrich Kienle of the Association of German Power Engineering Industry (VDEW) said during a seminar on nuclear technology at the Loccum Evangelical Academy held on June 25-26. He added that Japan, South Korea, and Taiwan are fully committed to almost doubling their nuclear power base by the year 2010, and that they are pushing for fast breeder technology (Japan, especially) and the high-temperature reactor (HTR)—technologies that are banned in the West.

“The Asians are laughing about us, especially us Germans, because of our problems, telling us to leave them alone and not tell them what to do. They don’t take us seriously any more. And indeed, we cannot even tell them much any more, because we are losing the technological edge in some of the most advanced fields of the technology. . . . In Taiwan, they’re already trying to develop their own HTR technology. If things don’t change here, we will have to knock at Asia’s doors to ask them for assistance in our nuclear problems, because we will not have enough engineers to manage our own nuclear power stations early next century.”

Many of Asia’s industrial nations have programs for power development which envision almost doubling of nuclear power supplies: Japan will have 72 reactors by the year 2010, as compared to the 47 it has now, and many of the new ones will be fast breeder reactors of the Monju type that began operating in April of this year. Taiwan will have ten reactors instead of the six it has now; South Korea will have 18-20 reactors.

Will Europe be left behind?

Should the West stick to its current policy of no new nuclear construction, which policy has even been joined by the French (who have no new plant on their agenda for years to come), the center of nuclear power development, development of new technologies and of know-how in this field will be Asia’s industrial nations. By the early part of the next century, western nations will have to come to Asia to buy the technologies they need, in the same way that Asians had to knock at western doors in the 1950s and 1960s, Kienle warned. Germany still has a worldwide technological edge with its HTR, but the Asians are working on their own models already, and

the Taiwanese may have one by the turn of the century.

The one question mark in Asia, according to Kienle, is the People’s Republic of China. In view of China’s huge population, he said, even the smallest increases in individual energy consumption already imply such giant increases of power supply, that power development is required at a scale not even envisioned by most in Europe and Germany. How the P.R.C. will solve that problem, is not known yet, but it cannot be solved without nuclear technology, that is certain.

Kienle said that the Asians are training a significant number of nuclear engineers and researchers, while in Germany, only the University of Aachen still dares to train such specialists. Under the impact of anti-nuclear sentiments, other universities no longer offer such training. In fact, by the beginning of the next century, Germany will not even have the required number of nuclear experts to close down nuclear power plants in an orderly and safe way.

‘Save the ecology: Go nuclear!’

One result of the Asian drive to modernize its energy sources may well be to step up its construction of high-temperature reactors, reported Prof. Kurt Kugeler of the German nuclear research center at Jülich, who spoke about options for leaving behind “dirty” energy sources like coal, oil, and gas.

Kugeler claimed that thermonuclear fusion (as opposed to the current fission process) is still 50 years away in terms of feasibility, and pointed to two options in the fission field for “clean” energy sources. One of these is the vastly modernized, automatically cooled European Project Reactor (EPR), a light water-based reactor type already developed by Siemens and Framatome (a joint Franco-German project). The other is the German HTR, of which Siemens is developing the smaller “module” type of 100-200 megawatts that can be built in the immediate neighborhood of population centers in densely populated parts of the world.

The HTR is the best of the available options, Kugeler said, because it meets most of the safety and non-pollution standards that are requested of modern reactors; and there’s still a lot of potential for improvement of the HTR.

Like most advocates of nuclear energy in Germany, however, who are still in the trenches after 20 years of unsuccessfully battling the Greens, Kugeler indicated that he is still trying to maneuver within the conceptual framework created by radical environmentalism. He said that a third option would be solar cell technologies, which should be massively funded, so that a viable production capacity could be built up in Germany. Already with current standards, he claimed, this technology is attractive even for northern industrial regions with relatively restricted sunshine intensity like Germany.

Kugeler called for a national consensus based on reason, “a triad of safety: nuclear fission, thermonuclear fusion, and solar cell technologies as the core of non-fossil energies that will be used in the future.”