

NUKE PLANTS MOVING OFFSHORE

Karl Grossman

Environmentalists say unlike land-based nuclear plants, sea-based plants could cause more harm should meltdown occurs?

Russia has embarked on a scheme to building floating nuclear power plants to be moored off its coasts—especially off northern and eastern Russia—and sold to nations around the world.

"Absolutely safe," Sergei Kiriienko, director-general of Rosatom, the Russian state nuclear energy corporation, told Reuters as the barge that is to serve as the base for the first floating plant was launched recently in St. Petersburg.

However, David Lochbaum, senior safety engineer at the Union of Concerned Scientists (UCS), describes an accident at a floating nuclear power plant as "worse" than at a land-based plant. "In a meltdown, a China syndrome accident, the molten mass of what had been the core would burrow into the ground and some of the radioactive material held there. But with a floating nuclear plant, all the molten mass would drop into the water and there would be a steam explosion and the release of a tremendous amount of energy and radioactive material. "It would be like a bomb going off," said Lochbaum, director of the Nuclear Safety Project at Washington-based UCS.

"With a floating nuclear plant you have a mechanism to significantly increase the amount of radioactive material going into the environment," said Lochbaum, who worked 18 years as an engineer in the nuclear industry and also for the US Nuclear Regulatory Commission. A large plume of radioactive poisons would be formed and "many more people would be put in harms's way." Further, there would be radioactive pollution of the sea, he noted.

Nuclear experts in Europe—including in Russia—are as critical as Lochbaum is about floating nuclear power plants and their unique accident potential. Other issues raised include the floating plants being sources of fuel for nuclear weapons and easy targets for terrorists.

"This project is clearly a risky venture," said Alexander Nitkin, a former chief engineer on nuclear-powered submarines of the Soviet Union and senior inspector for the Nuclear and Radiation Safety Inspection Department for its Department of Defense. He is now head of the St. Petersburg branch of the Bellona Foundation, an international environmental organization. "Safety shouldn't be neglected for the profits Rosatom wants to get from selling floating nuclear power plants to troubled regions. Such Rosatom activities simply violate the idea of non-proliferation."

The floating nuclear plants would use a far more volatile fuel compared to land-based plants; weapons-grade uranium containing 40% Uranium-235. The U-235 enrichment level in land-based plants is 3 percent. Each would include two reactors providing a total of 70 megawatts of electricity.

A press release by Rosatom issued with the June 30th launch of the football field-sized barge at St. Petersburg said "there are many countries, including in the developing world, showing interest" in the plants.

The *Times of London* has reported countries interested in buying them include China, Indonesia, Malaysia, Algeria and Argentina ("Floating Nuclear Power Stations Raise Spectre

of Chernobyl at sea. 'World Nuclear News' in its article added Namibia and Cape Verde to the list.

The notion of a floating nuclear power plant being pursued by Russia originated in the United States where it was scuttled because of excessive cost, public opposition and lack of energy need. Public Service Electric and Gas Co. (PSE&G) of New Jersey, in its literature, has related that while taking a shower in 1969 the idea of floating nuclear plants came to its vice-president for engineering and construction, Richard Eckert. In the shower, Eckert thought that the sea could supply the mammoth amounts of water nuclear plants need as coolant.

PSE&G convinced Westinghouse Electric Co. to build such plants. In 1970, Westinghouse and Tenneco set up Offshore Power Systems to fabricate them at a facility it built on Blount Island off Jacksonville, Florida. The plants were to be towed into position with the first four moored 1.8 miles off Little Egg Harbor, New Jersey, 11 miles northeast of Atlantic City. Costs skyrocketed, there were protests - in both Jacksonville and New Jersey as well as national opposition. And because of the 1973 oil crisis energy conservation reduced PSE&G's need for more power. In 1984, Offshore Power Systems cancelled the undertaking and dissolved after spending US\$180 million on the failed venture. □□□