

## U.S. researcher warns MOX fuel plan is too costly

*It is amazing how many "nuclear power experts" the US has in Universities. Their "expertise" at best is suspect.*

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Japan should rethink its plans to reprocess spent nuclear fuel and consider the much cheaper alternative of disposal, according to a nuclear power expert from the United States.

Resource-poor Japan plans to turn the plutonium and uranium gained through reprocessing into mixed oxide uranium-plutonium fuel, known as MOX, for use in conventional nuclear reactors, but this process is more expensive than disposing of the fuel, says Steve Fetter, a professor at the School of Public Affairs at the University of Maryland.

Japan Nuclear Fuel Ltd. is currently building a fuel reprocessing plant in Rokkasho, Aomori Prefecture, where it hopes to begin producing MOX fuel in 2006.

But Fetter says his studies show the price of electricity generated from burning MOX fuel at a conventional nuclear reactor is about 10 percent higher than electricity derived from uranium.

"If Japan wants to reconsider reprocessing, now is a good time -- before (the plant in) Rokkasho operates," Fetter said in a recent interview with The Japan Times.

The government's Atomic Energy Commission is currently reviewing its long-term nuclear power development plan amid calls for closer scrutiny of the nuclear fuel recycling program.

Although MOX fuel is planned for use in conventional and fast-breeder reactors, nuclear power plant construction has met with stiff resistance in recent years, and Monju, the only fast-breeder reactor in Japan, has been shut down since an accident in 1995.

Fetter gave a presentation to the commission last week in Tokyo on the results of his study -- conducted jointly with Harvard University researchers -- on the cost comparison of reprocessing and disposal of spent nuclear fuel.

Fetter does not object to using nuclear energy, as it would help alleviate global warming, but he explained how spent fuel reprocessing at the Rokkasho plant is not economically viable.

The current price of uranium is about \$40 per kg, but unless the figure tops \$1,650, the cost of electricity generated by MOX fuel from the Rokkasho plant will continue to be more expensive than that from conventional nuclear power generation, he said.

"Advocates (of reprocessing) argue that the cost difference is small and will disappear soon if demand for nuclear power grows," Fetter said. "But we argue that the cost difference is significant and is likely to persist for a long time -- at least 75 to 100 years."

Japan's decided in 1967 to use nuclear fuel recycling as a way to secure a stable energy supply. At that time, Fetter noted, it was believed that nuclear energy demand would grow quickly and that uranium resources were relatively scarce.

In fact, the demand for nuclear power has grown slowly in the last four decades, and the price of uranium has decreased due in large part to the discovery that it is more abundant than was previously estimated, the professor said.

According to the Organization for Economic Cooperation and Development, uranium deposits worldwide are estimated at 16 million tons, enough to last about 270 years at the current rate of consumption, he added.

Most of Japan's spent nuclear fuel is now being stored at nuclear power plants. However, some plants are beginning to reach maximum capacity.

Fetter blasted the argument that fuel reprocessing would help solve the nuclear waste problem, saying that heat and radioactivity levels are still high in the waste from the recycling process and it too has to be stored somewhere.

"In fact, spent MOX fuel is hotter and more radioactive than spent LEU," the low-enriched uranium fuel used at conventional nuclear power plants, he said.

The U.S. government has decided to dispose of spent nuclear fuel in a geological repository currently under construction at Yucca Mountain in Nevada.

Fetter recommended that Japan also build a geological repository or an interim storage facility for spent fuel, but he acknowledged that local opposition often makes it difficult to find such a site.

Antinuclear activists argue that such resistance is not surprising. According to the Citizens' Nuclear Information Center, a Tokyo-based nongovernmental organization, it would take millions of years for the radioactivity of spent nuclear fuel to decay.

Japan Nuclear Fuel has said it plans to start trial operations with depleted uranium at its Rokkasho plant this month, but Fetter said Japan should halt the reprocessing program before trials take place.

"The facility will become radioactive (from the trials), and you will have to spend a lot of money to decontaminate it," he said.