

## U.S. election may impact nuclear policy -- Bush, Democrats don't see eye to eye on fuel reprocessing plants

### *The history of reprocessing from a Japanese perspective*

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Reverberations from the U.S. presidential election in November and debate over Washington's nuclear nonproliferation policy may be felt in Japan.

In February, President George W. Bush announced a policy banning North Korea and several other countries from reprocessing spent nuclear fuel and enriching uranium, while recognizing that developed countries allied with the United States should be allowed to continue production.

But Tetsuya Umemoto, a University of Shizuoka professor and a specialist on nuclear proliferation, said the U.S. Democratic Party takes the position of limiting atomic power use by nonnuclear countries, and this stance is a problem for Japan.

After entering the White House in January 1977, President Jimmy Carter proposed a freeze on nuclear fuel reprocessing. He was concerned over a possible increase in the number of countries possessing nuclear weapons after seeing India develop and test a nuclear bomb in 1974.

Japan has few natural resources, so during the 1970s the government decided to try recycling nuclear fuel as a way to resolve energy shortages.

The Power Reactor and Nuclear Fuel Development Corp. planned to begin operating a reprocessing facility in Tokai, Ibaraki Prefecture, in July 1977.

Carter attempted to halt construction, and Japan came under intense international pressure not to reprocess spent nuclear fuel as it would involve the production of plutonium, which can be used to make nuclear weapons.

But the corporation was at a loss with what to do with the Tokai facility.

Yoshiharu Takahashi, now a division chief at the corporation's successor, the Japan Nuclear Cycle Development Institute, came up with the idea of producing plutonium that could not be used for military purposes.

Ordinary microwave ovens proved able to prevent the extraction of plutonium from a solution of spent nuclear fuel containing both plutonium and uranium.

"We used the oven by chance and it went well," Takahashi recalled. "It was like a dream."

In October 1979, a U.S. delegation visited the Tokai facility, confirmed the plutonium there could not be converted for weapons use and issued a formal go-ahead to the reprocessing plant.

The Japan-U.S. reprocessing talks were a major achievement for Japan, because, for the first time since World War II, Japan had U.S. agreement to reprocess nuclear fuel for nonmilitary use.

The Tokai plant went into full operation in 1981 and Japan began promoting the use of recycled fuel for running commercial nuclear reactors.

A report made public in August 2000 said Japan's plutonium stockpile totaled 32.9 tons, obtained by reprocessing spent nuclear fuel from overseas, as well as 5.3 tons extracted at the Tokai plant.

Japan's domestic extraction of plutonium was suspended at one point because the Tokai plant, the nation's only reprocessing facility, was closed following a 1997 fire and explosion. Operations there have since resumed.

The Tokai plant has a large volume of spent fuel, and nuclear arms experts see it as a potential source for nuclear proliferation.

Meanwhile, a large-scale nuclear reprocessing plant, being built by Japan Nuclear Fuel Ltd. in the village of Rokkasho, Aomori Prefecture, is scheduled to begin operations in 2006, using a reprocessing method Takahashi and his colleagues developed.