

## **SUMMARY: International impact of U.S. spent-fuel policy**

Statement to the Blue Ribbon Commission on America's Nuclear Future

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The U.S. was for reprocessing before we were against it. We were for it because our Atomic Energy Commission grossly overestimated the rate at which nuclear power would grow, grossly underestimated how much uranium would be found and grossly underestimated the cost of reprocessing. This led the AEC to propose fast-neutron breeder reactors that would convert the abundant but non-chain-reacting isotope of uranium, U-238 into chain-reacting plutonium. From the 1960s through the 1980s, the U.S., France, Germany, Japan, Russia, U.K. and other countries spent about \$100 billion in today's dollars on research, development and demonstration projects.

The primary legacy of all the breeder-development efforts is 240 tons of separated plutonium – enough for 30,000 first-generation nuclear weapons – stored in the U.K., France, Russia, Japan and India. Another legacy is a group of national laboratories and companies that continue to advocate for more expenditures on fast-neutron reactors.

The U.S. government began to rethink the wisdom of promoting reprocessing after India used plutonium separated as part of its breeder reactor R&D program in a “peaceful nuclear explosion.” Secretary of State Henry Kissinger worked hard to block the transfer of reprocessing to other countries and managed to derail France's transfer of reprocessing plants to South Korea and Pakistan and to stall the transfer from Germany to Brazil. All three countries were pursuing nuclear weapons at the time. The U.S. adopted the position, “we don't reprocess and you don't need to either.”

In the 1980s, France and the U.K. built modern reprocessing plants financed with prepaid contracts from foreign utilities that were having trouble with anti-nuclear movements focused on the spent-fuel issue. The utilities bought themselves respite by exporting their spent fuel to France and the U.K. The respite was only a temporary, however, because France and the U.K. insisted that the high-level waste from reprocessing return to the countries of origin. As a result only one reactor renewed its reprocessing contract. The United Kingdom is expected to end its reprocessing program.

Électricité de France was forced by the French government to renew its reprocessing contract with Areva. France is currently recycling its plutonium once in “mixed oxide” (MOX) fuel but most of the plutonium remains unfissioned and Areva has acknowledged that this does not simplify the radioactive waste disposal problem.

Today, Japan is the only non-weapon state that reprocesses. South Korea is insisting, however, that its new agreement of nuclear cooperation with the U.S. include the same prior consent to reprocess as Japan received from the Reagan Administration.

Looking back over this history, the U.S. has done rather well by not reprocessing: Our nuclear utilities have been able to save perhaps a \$100 billion and our influence, backed by our example, has helped constrain the spread of reprocessing. Finally, countries that reprocess have had no more luck in siting repositories than countries that do.