**Reprocessing Is Not Recycling**
**By Carah Ong[1]**
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Like the nuclear industry in general, the reprocessing industry was started initially to give access to plutonium and other material needed for nuclear weapons. In 1992, the first Bush administration wisely decided to phase out reprocessing, yet once again reprocessing has reared its ugly head. This fact sheet explains why **reprocessing is dangerous, dirty and costly**.

- **Reprocessing is not recycling.**

Despite claims by proponents, reprocessing is an extremely polluting process that creates more nuclear waste that will remain lethal for tens of thousands of years. Reprocessing is probably the dirtiest operation in the nuclear fuel cycle, second perhaps only to the initial mining and milling of uranium. In South Carolina alone, reprocessing is responsible for creating the most radioactive waste in the country – over 30 million gallons of high-level liquid waste containing chemicals used in the separation process combined with a long list of radioactive elements created inside the reactors. Reprocessing has also generated tens of thousands of containers of solid radioactive waste which is buried just a few miles from the Savannah River. Already some of that waste has moved into soils and groundwater, while some liquid low-level radioactive waste from reprocessing began seeping into creeks at the Savannah River Site years ago.[2]

- **Rather than solving the nuclear waste problem, reprocessing actually just repackages nuclear waste in a different form.**

The industrial process of reprocessing just spreads the radioactivity over a vastly greater volume. Reprocessing creates a liquid acidic waste form that is up to 160 times larger than the original volume of spent fuel. Intermediate level wastes must also be disposed of, adding considerably to total repository waste volumes.[3] Although only a small quantity of high-level waste is produced from the process, it is so radioactive and hot it must be continually cooled for at least 50 years before anything can even be done with it.

- **Reprocessing sites would become *defacto* nuclear waste dumps.**

Proposed reprocessing sites identified by Congress and the Department of Energy (DOE) will appear as an attractive option for accepting additional waste.

Spent fuel assemblies removed from a reactor are very radioactive and produce heat. They are put into large tanks of water in order to cool them. Here they remain, either at the reactor site or the reprocessing plant for a number of years. For most types of fuel, reprocessing doesn't occur

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[2] Institute for Energy and Environment Research, "*Reprocessing and Spent Nuclear Fuel Management at the Savannah River Site*." February 1999. http://www.ieer.org/fctsheet/srs-snf.html

[3] Berkhout, Frans. *The International Civilian Reprocessing Business*, "*Reprocessing and the Environment*." Issue #2, Jan 1997; http://www.ieer.org/ensec/no-2/rep-env.html.

until anywhere from 5 to 15 years after reactor discharge.[4] Thus, reprocessing sites identified by Congress and the DOE would be come long-term nuclear waste dumps.

- **Reprocessing sites endanger the health of citizens.**

There is widespread concern about the health risks of reprocessing, especially clusters of childhood leukemia around reprocessing plants. Independent research from Pr Viel previously found a leukemia cluster in the region around France's La Hague reprocessing plant. A 1997 study by the British Department of Health entitled "Variations in the Concentration of Plutonium, Strontium-90, and Total Alpha-emitters in Human Teeth Collected within the British Isles" found traces of plutonium from the Sellafield reprocessing plant in teeth of children throughout Britain.

- **Reprocessing is not cost effective.**

From the mid-1950s through the beginning 1990s, tens of thousands of tons of radioactive material were reprocessed at the Savannah River Site (SRS) near Aiken, South Carolina. However, since the end of the Cold War, operations at SRS have been predominantly aimed at trying to stabilize the waste and contamination created by past reprocessing and at stabilizing a few hundred tons of radioactive material, most of which has been stored on-site since the 1980s. The last SRS reactor operated in 1988.

Construction of a commercial reprocessing plant just beyond the border of SRS in Barnwell County was halted in the late 1970s and early 1980s, most notably due to concerns over treating plutonium, which could be made into nuclear weapons as a commercial product, and the simple economics that reprocessing is not cost effective.

It will cost U.S. taxpayers tens of billions of dollars to contain the waste from past reprocessing at the Savannah River Site. Further, there are no plans to ever completely clean it up and no one yet knows how to do so safely, even if there was money to try.

**Recommendations**

Congress should eliminate all funding for reprocessing in favor of funding for research into alternatives to reprocessing. Instead of reprocessing, spent fuel and other nuclear waste should be stored above ground at, or as near as possible, to the point of production.

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[4] Madic, C. UIC Nuclear Issues Briefing Paper #72, "*Processing of Nuclear Wastes*." December 2001.