

**August 30, 2010**

**Summary Statement of the Union of Concerned Scientists to the Blue Ribbon Commission on America's Nuclear Energy Future's Reactor and Fuel Cycle Technology Subcommittee**

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On behalf of the Union of Concerned Scientists (UCS), I am pleased to provide a summary of our views on the two questions put before this panel.

**Question #1.** UCS is not aware of any reprocessing-based technology option currently being put forward for near-term deployment that would have a significant and beneficial impact on the storage and disposal of spent fuel. To have a significant and beneficial impact, a technology should have a demonstrated potential to substantially reduce, in a reasonable time frame (one or two generations), the risks to public health and safety from the nuclear fuel cycle without increasing the risks of proliferation and nuclear terrorism.

In our view, current evidence indicates that fuel cycle options that entail reprocessing and recycling of weapon-usable materials fail on all of these counts and should not be adopted in the United States. This is the case even for options utilizing modifications of conventional aqueous (PUREX) reprocessing, such as COEX and NUEX, or non-aqueous processes such as pyroprocessing, and applies to scenarios employing thermal reactors, fast reactors or accelerators. Relative to the once-through cycle, these options would:

- Increase the complexity and cost of nuclear waste management and disposal;
- Increase risk to the public from routine releases, accidents and sabotage attacks;
- Increase the risk that terrorists will obtain materials usable in a crude nuclear explosive device; and
- Continue to leave a substantial burden on future populations for management of wastes produced by the current generation, contravening the principle of intergenerational equity.

Instead of reprocessing, UCS favors aggressive research and development to improve the efficiency of the once-through cycle by increasing resource utilization, reducing the rate of spent fuel generation, and minimizing the need for uranium enrichment, while preserving a high level of safety. Reactor concepts that can achieve high rates of internal conversion and fission without reprocessing and recycling are of particular interest.

**Question #2.** UCS does not believe it is appropriate for the federal government to facilitate commercial efforts to adopt any particular fuel cycle option other than to develop a geologic repository and conduct innovative R&D that industry is reluctant to pursue. The government should shape policy by instituting a regulatory framework that will ensure that no fuel cycle strategy is licensed unless it meets the highest standards for protecting public health, safety and security. We oppose attempts to weaken safety, security and material-accounting requirements for fuel cycle facilities that would promote reprocessing plant development by

reducing the costs of regulatory compliance. The Nuclear Regulatory Commission (NRC) is currently considering industry requests to weaken its security requirements on the storage and transport of nuclear weapon-usable materials, such as mixed-oxide fuel, and its material-accountancy requirements at fuel cycle facilities. The industry's requests for such regulatory relief are clear indications that current NRC requirements for security and accounting of weapon-usable materials cannot be met at reprocessing and fuel fabrication plants. Rather than lower standards, NRC should adopt regulations that promote significantly greater safety, security and proliferation resistance in the next generation of nuclear facilities.

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The Union of Concerned Scientists is the leading U.S. science-based nonprofit organization working for a healthy environment and a safer world. Founded in 1969, UCS is headquartered in Cambridge, Massachusetts, and also has offices in Berkeley, Chicago and Washington, D.C. For more information, go to [www.ucsusa.org](http://www.ucsusa.org).