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## **New NAS Report Slams DOE Reprocessing Plan**

The U.S. Department of Energy is proposing to embark on a massive program, called the Global Nuclear Energy Partnership (GNEP), for managing the world's irradiated fuel created by nuclear power plants. Under this program, the U.S. would reprocess its irradiated fuel (as well as fuel from other countries) and use the plutonium in mixed oxide (or MOX) fuel in fast neutron reactors. The program is the cornerstone of the administration's plan to revitalize interest in nuclear power. They claim the program will substantially reduce nuclear waste, however the reprocessing technology they have tapped to accomplish their objectives is unproven, financially risky, and above all, will not solve our country's nuclear waste problem.

In October 2007, the National Academy of Sciences (NAS) released a report on the Department of Energy's Nuclear Energy Research and Development Program. The review includes an evaluation of the technical, scientific, economic, and management aspects of the Global Nuclear Energy Partnership program. The NAS committee concluded that the rationale for the GNEP program, as expressed through the stated goals, objectives, and criteria, has been unpersuasive. The program is premised on an accelerated deployment strategy that will create significant technical and financial risks. In short, **all committee members agree that the GNEP program should not go forward** and that it should be replaced by a less aggressive research program.

The NAS committee's conclusions are based on the following findings:

**Finding 1-**Domestic waste management, security, and fuel supply needs are not adequate to justify early deployment of commercial-scale reprocessing and fast reactor facilities.

**Finding 2-**The state of knowledge surrounding the technologies required for achieving the goals of GNEP is still at an early stage, at best a stage where one can justify beginning to work at an engineering scale. However it seems to the committee that DOE has given more weight to schedule than to conservative economics and technology. To carry out or even initiate efforts on a scale larger than the engineering scale in the next decade would be inconsistent with safe economic and technical practice.

**Finding 3-**The cost of the GNEP program is acknowledged by DOE not to be commercially competitive under present circumstances. There is no economic justification to go forward with this program at anything approaching commercial scale. Continued research and development are the appropriate level of activity, given the current state of knowledge.

**Finding 4-**Several fuel cycles could potentially meet the eventual goal of creating a justifiable recycling system. However none of the cycles proposed, including UREX+ and the sodium fast reactor, is at a stage of reliability and understanding that would justify commercial-scale construction at this time.

**Finding 5-**The qualification of multiply-recycled transuranic fuel is far from reaching a stage of demonstrated reliability.