



# Nuclear Fuel Recycling

## Position Statement

Revised June 2007

The American Nuclear Society believes that if the world is to provide sufficient energy to meet the demands of a growing population and improved standards of living in the 21<sup>st</sup> century, nuclear energy will play a substantial role. Nuclear energy is a proven technology that will be part of the mix of technologies used by future generations due to its enormous energy potential with near-zero emissions of greenhouse gases (see related Position Statement 44). Alternative energy sources by themselves will be insufficient to meet these needs during this period of rapidly increasing energy demand.

Nuclear fuel recycling, which involves separating the uranium and plutonium from spent nuclear fuel for reuse in the fabrication of new fuel (see Position Statement 47), has the potential to reclaim most of the unused energy in spent fuel. It is a proven alternative to current U.S. policy of direct disposal of spent fuel in a geological repository, which throws away the fuel's remaining energy content. Recycling of nuclear fuel in other countries with proper safeguards and material controls (see related Position Statement 55) under the auspices of the International Atomic Energy Agency (IAEA) has demonstrated the viability of high level waste volume reduction and energy resource conservation.

Transitioning to a recycle policy in an era of expanded nuclear deployment will enhance resource utilization, radioactive waste management, and safeguards. Additional research and development<sup>1</sup> are needed to address the issue of cost and to further enhance the safeguards and safety of the various processes that are required. Such research is also needed to secure the U.S. position as a leader in nuclear technology and global nuclear materials stewardship.

Therefore, the American Nuclear Society endorses the following:

- U.S. policy that allows an orderly transition to nuclear fuel recycling in parallel with the development of the high level waste repository, Yucca Mountain, in a manner that would enhance the repository's efficiency;
- further research and development of recycle options to ensure a secure and sustainable energy future with reduced proliferation risks.

### Reference

1. McFarlane, H. F., "Nuclear Fuel Reprocessing," *Encyclopedia of Energy*, Volume 4, Elsevier (2004).

---

The American Nuclear Society, founded in 1954, is a not-for-profit scientific and educational society of over 10,000 scientists, engineers, and educators from universities, government and private laboratories, and industry.

Position Statements are the considered opinions and judgments of the Society in matters related to nuclear science and technology. They are intended to provide an objective basis for weighing the facts in reaching decisions on important national issues.