



# **Interim Storage of Used or Spent Nuclear Fuel**

## **Position Statement**

### **February 2008**

The American Nuclear Society (ANS) supports the safe, controlled, licensed, and regulated interim storage of used nuclear fuel (UNF) (irradiated, spent fuel from a nuclear power reactor) until disposition can be determined and completed. ANS supports the U.S. Nuclear Regulatory Commission's (NRC's) determination that "spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least 30 years beyond the licensed life for operation."<sup>1</sup>

Current operational and decommissioned nuclear power plants in the United States were licensed with the expectation that the UNF would be stored at the nuclear power plant site until shipment to an interim storage facility, reprocessing plant, or permanent storage. Because of delays in Federal programs and policy issues, utilities have been forced to store UNF. Current means of interim storage of UNF at nuclear power plant sites include storage of discharged fuel in a water-filled pool or in a sealed dry cask, both under safe, controlled, and monitored conditions. This UNF interim storage is designed, managed, and controlled to minimize or preclude potential radiological hazards or material releases.

At nuclear power plant sites in the United States and internationally, this interim storage is regulated under site license requirements and technical specifications imposed by the national or state regulator. In the United States, NRC is the licensing and regulatory authority. ANS believes that UNF interim storage at nuclear power plant sites has been, and can continue to be, achieved with a high degree of safety and protection of the environment.

ANS also endorses the findings of the NRC Waste Confidence Proceedings as summarized in the following quote: "The Commission finds reasonable assurance that high-level radioactive waste and spent fuel will be managed in a safe manner until sufficient repository capacity is available to assure the safe disposal of all high-level waste and spent fuel."<sup>2</sup>

Interim storage of UNF at nuclear power plant sites is a partial and incomplete answer to the waste surety issue within the nuclear fuel program, and the interim storage time frame needs to be addressed. While the current pool and dry cask storage conditions are maintained, longer-term storage issues need to be addressed at the local and national levels. Indefinite UNF storage at nuclear power plant sites is not an acceptable long-term condition. Within the Federal programs designated for nuclear energy, a disposition method and path forward for an operational facility to receive the UNF from nuclear power plants are required.

ANS recognizes that ultimate disposition methods and facilities for UNF may not be fully determined or operational in the immediate future in the United States. Current proposed U.S. disposition options for UNFs comprise one or more of the following:

- Consolidate interim storage location(s) away from nuclear power plant sites for dry storage.
- Reuse and recycle materials in the UNFs (processing to recover usable materials and the separate waste products). (See ANS Position Statement 45.)
- Store or dispose in a geological repository.

Until such facilities are licensed, ready for transport, and operational, the safe interim storage of UNF will continue under the current controlled conditions.



In other countries, the safe, controlled, licensed, and regulated interim storage of UNF is managed through similar options or methods. One or more of the current methods in use include (a) on-site and off-site storage in fuel pools, fuel ponds, or dry casks; (b) storage in reprocessing facility fuel pools; (c) reprocessing for use and recycle of material and waste volume reduction; and (d) consolidated central storage. The use of a geological repository for general nuclear waste, UNF, or the high-level waste stream from reprocessing is planned in several countries. ANS endorses these efforts to manage UNF safely throughout the nuclear fuel cycle.

The interim storage and ultimate disposition of UNF can be achieved in manners that will ensure the health and safety of the public and the environment in the overall nuclear fuel cycle waste management program.

## References

1. “Temporary Storage of Spent Fuel After Cessation of Reactor Operation—Generic Determination of No Significant Environmental Impact,” Title 10, Part 51.23(a), *Code of Federal Regulations*.
2. *Waste Confidence Decision*, 49 FR 34694, August 31, 1984, as amended at 55 FR 38474, September 18, 1990; 72 FR 49509, August 28, 2007, *Federal Register*.

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