

Spent Fuel Management and Spent Fuel Storage in the USA

Albert J. Machiels

Electric Power Research Institute, Inc. (EPRI), Palo Alto, California, USA

amachiel@epri.com

It will be shown that interim storage of spent nuclear fuel and/or high-level waste is a key generic spent fuel management activity in all countries that make use of nuclear energy for electricity generation. In the US, over 1300 dry storage systems have been deployed at some 50 reactor sites and contain ~25% of the discharged fuel inventory, as of October 2010.

Given recent developments with regard to the intended disposal of the spent fuel, it is now expected that nearly all nuclear power plants will have to implement at-reactor dry storage for periods of time exceeding current or anticipated maximum 60- to 80-year license durations.

Recommendations to achieve a consistent, sustained political and policy support for spent fuel management have recently been the subject of an interdisciplinary MIT Study entitled “The Future of the Nuclear Fuel Cycle,” and national police guidance is expected from a “Blue Ribbon Commission on America’s Nuclear Future” established under the Authority of the U.S. Department of Energy.

References

“Advanced Nuclear Fuel Cycles – Main Challenges and Strategic Choices”, EPRI, Palo Alto, CA: 2010. 1020307

http://my.epri.com/portal/server.pt?Abstract_id=0000000000010203

MIT’s “Update to MIT 2003 Future of Nuclear Power” (May 2009)

<http://web.mit.edu/nuclearpower/pdf/nuclearpower-update2009.pdf>

MIT’s “The Future of the Nuclear Fuel Cycle”

<http://web.mit.edu/mitei/docs/spotlights/nuclear-fuel-cycle.pdf>