



Q: *What alternative technologies might eliminate the need for a repository?*

A: Alternative technologies and options have been, and will continue to be, evaluated for the responsible management of high-level radioactive waste.

Many nations reprocess their spent nuclear fuel, which slightly reduces the volume of high-level radioactive waste. Liquid high-level radioactive waste, however, is a by-product of reprocessing. Prior to transport or disposal, this new amount of liquid waste must be vitrified, a process by which the waste is combined with sand and other materials and melted together to form a stable glass. This waste also must be disposed of in a repository to ensure the protection of public health and safety.

The DOE supports, and continues to fund, further research and development of accelerator transmutation of nuclear wastes, a process that could reduce the amount of long-half-life actinides (a type of radionuclide) in the commercial spent fuel. The high-level radioactive waste that is a by-product of this process also requires disposal in a repository to ensure the protection of public health and safety.

A repository at Yucca Mountain would centralize the disposal of high-level radioactive waste, while maintaining the option to retrieve it. With the waste retrievable, we preserve future generations' options to take advantage of alternative technologies, while protecting the health and safety of the public for thousands of years in the future.

For the foreseeable future, there are no technologies that would eliminate the need for a repository. Options for the management of high-level wastes have been evaluated, but all produce high-level radioactive waste as byproducts that must themselves be disposed of in a repository to protect public health and safety.