

## **DOE submits Yucca Mountain license application; Argonne contributes science, engineering support**

The U.S. Department of Energy reached a milestone in its efforts to help enable the renaissance of nuclear energy in the United States June 3, when Energy Secretary Samuel Bodman announced that the department had submitted the formal license application for the federal nuclear waste repository at Yucca Mountain, Nevada, to the U.S. Nuclear Regulatory Commission.

Argonne played a role in developing the license application, and — along with nuclear power generators in Illinois — will benefit from the repository should the NRC approve the license.

“A huge amount of science underpins the application, and most of the national laboratories were involved,” said Mark Peters, deputy to the associate laboratory director for Energy Sciences and Engineering. Eight national laboratories were involved in conducting the research and analyses. Sandia National Laboratories coordinated the scientific work.

“Argonne’s contribution included characterizing spent fuel and high-level waste glass performance in the repository. This included experiments and helping to develop the models for various waste forms.”

Much of this work was performed in Argonne's Chemical Sciences and Engineering, Nuclear Operations and Nuclear Engineering divisions. Their work may not be done yet, Peters said; those who worked on the program may be called on to defend their results during the three- to four-year license review process. If the NRC approves the repository for construction, the agency will conduct long-term monitoring and performance studies of its operation.

DOE has spent 20 years and more than \$10 billion conducting scientific evaluations that have led to the decision to pursue licensing of the Yucca Mountain site.

The 8,600 page application describes DOE's plan to safely isolate spent nuclear fuel and high-level radioactive waste in tunnels deep underground at Yucca Mountain, a remote ridge on federally controlled land in the Mojave Desert 90 miles northwest of Las Vegas. Currently, some 57,000 tons of waste is stored at 121 temporary locations in 39 states across the nation.

"Submittal of the Yucca Mountain license application will further encourage the expansion of nuclear power in the United States, which is absolutely critical to our energy security, environmental goals and national security," Secretary of Energy Samuel Bodman said.

For more information on the license application and DOE's Yucca Mountain Project, visit the [Office of Civilian Radioactive Waste Management's Web site](#).