Senate Approves Yucca Mountain Repository; President Signs Congressional Resolution, Moving Repository Project into the Licensing Phase

On July 9, with a vote of 60–39, the U.S. Senate approved a procedural motion to bring the Yucca Mountain issue to a vote. With sufficient bipartisan support for the project thus established, this action was followed by a voice vote overriding the state of Nevada's veto of the project, thus establishing Yucca Mountain as the United States' first high-level waste and spent nuclear fuel repository.

On July 23, President George W. Bush signed the congressional resolution on Yucca Mountain, moving the project into the next phase: preparing the licensing application, which must be submitted to the U.S. Nuclear Regulatory Commission by the end of 2004.

According to Margaret Chu, the director of the U.S. Department of Energy's Office of Civilian Radioactive Waste Management, which oversees the Yucca Mountain project, the schedule is "really tight" to meet the goals of having the license application ready by December 2004 and having the repository open and accepting waste by 2010. In addition, she said, "We have a lot of catch-up to do in the transportation program." She said that the DOE will issue a record of decision later this year, declaring a preference for shipping spent fuel and waste to Nevada by rail, and will issue a draft transportation policy that will be finalized next year.

Transportation was the issue the state of Nevada chose to focus on in its opposition campaign against the siting of the repository in the state. The state's public relations firm on the issue managed a successful effort to get spent-fuel transportation issues discussed at the local, state, and national levels, in all media.

Besides transportation, Chu said she is concerned about the budget for the project, and she said she hopes to shave "billions" from the final price tag. She said savings could be found through stepped-up science and technology efforts that she plans to put in place next year. Sustained research might develop advances in materials and repository designs, she stated. Also, she will be evaluating waste packaging and the need for expensive components, such as the titanium drip shields, which could add billions to the price. Some have questioned the level of protection these shields would provide.

For more information on the future of the Yucca Mountain project, see "What's Next for Yucca Mountain," this issue, p. 40.

Aerial view of the crest of Yucca Mountain.

Regulatory Actions

- The U.S. Nuclear Regulatory Commission has approved partial site release for Maine Yankee, granting a license amendment that removes 641 acres of the 820-acre site from the Part 50 operating license. This action terminates license jurisdiction for a large portion of the site that was determined to be non-impacted by plant operation. This property includes the Eaton Farm area, which Maine Yankee plans to donate to a non-profit entity for conservation and environmental education purposes. The released property is still the subject of the Resource Conservation and Recovery Act (RCRA) closure process being overseen by the state Department of Environmental Protection and the U.S. Environmental Protection Agency.
- The NRC imposed a $288 000 civil penalty for the "unprecedented" loss of two spent nuclear fuel rods at the Millstone-1 nuclear plant some 20 year ago. The fine is triple the base penalty of $96 000 for the failure to account for the nuclear materials contained in the rods. The

NRC raised the fine amount because it deemed the loss to be a "very significant violation." While the fine was imposed on the plant's current license holder, a subsidiary of Dominion Resources, the former owner, Northeast Nuclear Energy Co., will be getting the bill.

The final whereabouts of the fuel rods has never been determined, but Northeast Nuclear has concluded that they were cut into segments in the late 1970s and disposed of at a low-level waste disposal site with other irradiated material at a later date. The NRC has concurred with that finding.

Private Fuel Storage Wins Legal Round in Utah

A federal judge has ruled that Utah laws designed to keep high-level radioactive waste out of the state are unconstitutional. U.S. District Court Judge Tena Campbell ruled on July 30 that the Utah laws unfairly and illegally hinder the plans of Private Fuel Storage LLC (PFS) to construct and operate a spent-fuel storage facility on 100 acres of land located on the Skull Valley Goshute Indian Reservation. The court ruling invalidates five state laws aimed at preventing PFS from building and operating the facility.

The laws, enacted last year, outlaw a spent fuel storage facility in the state, and mandate fines, jail time, and heavy taxes for anyone doing business with such a facility.

PFS, a consortium of several nuclear utilities that plan to store spent nuclear fuel at the site, filed suit, alleging that the laws were unconstitutional. Judge Campbell agreed, stating that it is clear that Congress has given the federal government the authority to regulate nuclear safety, and federal law preempts any state or local regulation of any area over which Congress has exercised exclusive authority.

PFS has applied for a license from the U.S. Nuclear Regulatory Commission to operate the facility for 20 years, with a 20-year extension also possible. A decision on the license could come as soon as this December. Once a permanent repository (presumably Yucca Mountain) is available, the spent fuel would be shipped there.

Utah Gov. Mike Leavitt has said that the state will appeal the ruling.

Low-Level Waste

● South Carolina officials are attempting to get low-level waste generators located outside the Atlantic Compact states to sign multi-year contracts to secure disposal space through 2008 at the Barnwell, S.C., LLW disposal facility. After 2008, Barnwell will serve only those generators located in Atlantic Compact states: Connecticut, New Jersey, and South Carolina. The contracts would guarantee a predetermined amount of space at the facility. They would not require prepayment or reservation fees, and would lock in a price for the duration of the contract. Generators would have to designate an "average annual commitment" and a "minimum annual commitment," and would be prohibited from selling their capacity to a third party.

● Utahns for Radioactive Waste Control has failed in its attempt to place a low-level waste disposal tax initiative on the November 2002 ballot in the state. The group failed to gather enough signatures in enough counties to qualify for ballot placement. The initiative proposed increasing the tax on LLW disposed in the state from the current 10 cents per cubic foot rate to as much as $150/cubic foot.

Envirocare of Utah Inc., which operates an LLW disposal facility in the state, had mounted a strong campaign against the initiative, in some cases meeting with petition signatories and convincing them to ask to have their names removed. Utahns for Radioactive Waste Control has appealed to the state Supreme Court. In turn, Envirocare filed a lawsuit, asking the court to declare the initiative unconstitutional and ineligible for inclusion on the ballot.

● The California state legislature is working on a group of bills that, taken together, would severely restrict disposal of even trace amounts of radioactivity in the state and would all but eliminate any possibility of siting and operating an LLW disposal facility there.

Assembly Bill 2214 would prohibit the state from ever operating an LLW disposal facility on the Ward Valley site (the licensed site for the Southwestern LLW Compact) and would impose new requirements on any new disposal facility established in the state (the waste would have to be stored in individual containers that could easily be accessed for visual inspection).

Senate Bill 1444 sets license termination and cleanup standards for the state specifying that cleanup levels be no greater than background (the U.S. Nuclear Regulatory Commission sets a cleanup level to a dose rate of 25 mrem per year plus ALARA). Senate Bill 2065 would establish extensive data collection and reporting requirements for LLW in storage and shipped for disposal. And Senate Bill 1970 would greatly expand the scope of wastes that must be disposed of at a licensed LLW disposal facility—essentially including any waste containing radioactivity that measures above the background level—and would prohibit any exemptions from that requirement.

International Updates

● A Chinese group has agreed to build a 200-MWt nuclear reactor run on spent fuel from nuclear power stations to provide district heating and desalination. The project at Yingkou in Liaoning Province, valued at $42 million, will heat 5 million square metres of building space for 4–6 months each year and initially desalinate 3000 tonnes of seawater per day in the warmer months, increasing to 80 000 tonnes later. The deep-pool reactor will operate at atmospheric pressure, which will reduce the engineering requirements for safety.

● Sweden has begun geological tests at the first of two possible sites for a spent fuel and high-level waste repository in the nation. The tests will take water and granite samples to determine the geological suitability of a site near the Forsmark nuclear power plant over the next five or six years. Similar tests are scheduled to begin by the end of this year near the Oskarshamn nuclear plant. The Swedish Nuclear Fuel and Waste Management Co. (SKB) plans to begin commercial operation of a permanent HLW repository in the 2015 time frame. SKB expects to decide on a site by 2007 and to begin construction in 2008.

● Safety analyses work has begun on a low- and medium-level nuclear waste storage facility to be built on permafrost at Novaya Zemlya, in the Arctic Ocean off the Kola Peninsula in Russia. Swedish company SKB will lead the safety study, with help from Germany and Norway. It's expected to take about 18 months. The study will consider the effects of a possible permafrost melt as well as facility and waste package design. The facility, estimated to cost between $80 million and $90 million to construct, will store only waste from the Kola nuclear plant, which is located on the Kola Peninsula. ■