Goodbye, Yucca Mountain; Hello, Blue Ribbon Panel

On Friday, January 29, Secretary of Energy Steven Chu announced the formation of the long-awaited Blue Ribbon Commission on what to do with the nation's nuclear waste. (For more on the Blue Ribbon Panel, see "Editor's Note," this issue, page 4.) One workday later, on Monday, February 1, he announced that the Obama administration was immediately suspending the license application for a spent fuel/high-level waste repository at Yucca Mountain, Nevada. Within 30 days, he continued, he expected to completely withdraw the application, "with prejudice," meaning the U.S. Department of Energy would be barred from refiling the application at a later day.

In addition, the proposed fiscal 2011 DOE budget the White House sent to Congress on February 1 declared that the proposed repository at Yucca Mountain is "not a workable option." The budget proposed to zero out funding for the project office in fiscal 2011 (which begins October 1, 2010), and absorb the Office of Civilian Radioactive Waste Management, which oversees the Yucca Mountain project, into the department's Office of Nuclear Energy. The approximately 180 federal workers on the project will be offered new assignments, and Chu said that the DOE will work with project contractors to find new positions for the more than 440 contract employees at the project. Chu also said the DOE will work with the U.S. Nuclear Regulatory Commission to preserve and archive nuclear waste studies and other documents.

The White House budget plan still needs to get through Congress, and judges at the NRC would need to sign off on the DOE's bid to pull the license application.

Low-Level Waste in the News

On January 11, the U.S. Supreme Court heard oral arguments in the pending lawsuit, *Alabama et al v. North Carolina*, over low-level radioactive waste responsibilities. The states of Alabama, Florida, Tennessee, and Virginia and the Southeast Compact Commission for Low-Level Radioactive Waste Management filed a lawsuit in the U.S. Supreme Court in June 2002 to enforce $90 million in sanctions against the state of North Carolina. The suit alleges that North Carolina failed to comply with the provisions of North Carolina and Southeast Compact laws and did not meet its obligations as a member of the Compact. North Carolina was a member of the Southeast Compact from 1983 until it withdrew in 1999. The state allegedly withdrew from the compact because it was chosen to host the compact LLW disposal site and did not wish to do so.

- The U.S. Nuclear Regulatory Commission announced in late 2009 that it is seeking public comment on issues associated with the blending of low-level radioactive waste. According to the NRC, "blending" refers to mixing LLW of different concentrations, primarily Class B or C with Class A. It does not involve mixing radioactive waste with nonradioactive waste, a practice the NRC defines as "dilution." And it does not imply release of radioactive material to the general environment, either to municipal nonradioactive waste disposal sites or to consumer products. Blended wastes remain LLW and must be disposed of in a licensed LLW disposal facility.

  Blending is not prohibited or expressly addressed in NRC regulations. NRC staff guidance discourages blending in some circumstances, but also recognizes that blending—including blending that lowers the classification of a waste—may be appropriate in other cases.

  Specific questions discussed at a public meeting in Rockville, Md., on January 14 were spelled out in a *Federal Register* notice published on November 30, 2009. Comments were accepted through January 29, 2010.
- The U.S. Nuclear Regulatory Commission would be prohibited from authorizing imports of low-level radioactive waste under a bill passed 309–112 by the U.S. House of Representatives in early December 2009. The bill was designed partly to keep EnergySolutions from importing some 20 000 tonnes of LLW from Italy for treatment and disposal. A companion bill is pending in the Senate.

Spent Fuel Storage

In late December, a federal appeals court in Manhattan, N.Y., refused a request by several states to force the U.S. Nuclear Regulatory Commission to declare spent fuel pools at nuclear power plants a serious environmental threat. The 2nd U.S. Court of Appeals denied appeals by New York, Connecticut, and Massachusetts that it review the NRC's rejection of a California/Massachusetts request that the risk level of spent fuel pools be raised. The court said it must defer to the regulatory agency's expertise.

International Isotopes Submits License Application for Deconversion Plant

At the beginning of January, International Isotopes submitted its license application for a proposed depleted uranium deconversion and fluorine extraction processing facility in Hobbs, N.M., to the U.S. Nuclear Regulatory Commission. The licensing review is expected to take some 18–24 months to complete. The facility would remove fluorine from depleted uranium hexafluoride left over from the uranium enrichment process and use it to manufacture high-value fluoride gases.

The company plans to select the design and construction contractor this year and, subject to NRC approval, may initiate pre-license construction activities at the Hobbs site. The NRC held a public meeting on January 14 in Hobbs to discuss the license review process.

SRS Making Progress in Tank Closures; Other D&D Updates

With a little help from funds from the American Recovery and Reinvestment Act, the U.S. Department of Energy's Savannah River Site is upgrading H Area Waste Tank 13, so that other tanks in its area can be emptied and closed.

Tank 13 is an underground waste storage tank with a capacity of more than one million gallons. It has been out of active service for more than 25 years, and during that time has safely stored nearly 800 000 gallons of highly radioactive waste. Like many of the older tanks at SRS, it must be emptied and closed by the year 2022. Now it has been selected as a "hub" tank, which will allow SRS to accelerate tank closures for a set of tanks. By late 2011, upgrades to the tank will be complete, and nearly half of the existing waste will be removed. This will pave the way for moving waste from three adjacent tanks into Tank 13, accelerating the closure of those tanks as well and increasing the quantity of waste that is put through the Defense Waste Processing Facility. The contractor on the project, Savannah River Remediation LLC, estimates the project will cost $27 million and will save or create more than 100 jobs. In addition, the upgrades to the tank will require engineered equipment and materials that will provide significant opportunities for vendors and suppliers.

Recovery Act funding is also helping accelerate closures at the F Tank Farm at SRS. There, in a $1.4 million project, a 50-foot-long failed submersible mixing pump in Tank 5 was removed (see photo at left) and is being replaced by a submersible pump from nearby Tank 6. The interior of the tank, nearing cleaning completion (see photo at right), is a complicated matrix of horizontal and ver-

Tank 5 pump being removed

Tank 5 interior

tical cooling coils, risers, and supports for the nearly two-foot-thick concrete roof.

SRS is committed to the closure of 22 waste tanks in eight years.

- The U.S. Department of Energy's Toxic Substances Control Act (TSCA) Incinerator at the East Tennessee Technology Park (formerly the K-25 site) in Oak Ridge permanently shut down on December 2, 2009, after more than 18 years of operation and more than 35 million pounds of waste safely incinerated. During its operating lifetime, the one-of-a-kind thermal treatment facility burned materials regulated under TSCA and the Resource Conservation and Recovery Act (RCRA), most notably radiologically contaminated polychlorinated biphenyls (PCBs). It was constructed in the mid-1980s and began routine operations in 1991. The facility will now undergo formal closure as required by RCRA that will place it in the surveillance and maintenance mode until it is demolished; demolition is anticipated in fiscal year 2014. Immediate closure activities include the installation of scaffolding and platforms inside the incinerator for removal of brick liners, sampling and analysis of various components, removal of sludge and packing material, and offsite disposal of the waste generated during this process. These activities are scheduled to be completed by the end of this year.
- The U.S. Department of Energy's Hanford Vitrification Plant finished 2009 with major accomplishments in three of its primary nuclear facilities: the High-Level Waste Vitrification Facility, the Pretreatment Facility, and the Low-Activity Waste Vitrification Facility. These accomplishments included fabricating key equipment, placing a 36-ton rebar curtain, and completing a support building, respectively. The plant reached the 50 percent complete mark in the fall. It is scheduled for completion in 2019.
- The first of the American Recovery and Reinvestment Act–funded shipments of transuranic waste from the U.S. Department of Energy's Argonne National Laboratory site in northern Illinois took place in mid-October 2009. The lab has been shipping TRU waste to the Waste Isolation Pilot Plant in New Mexico for three years, but the October shipment was the first time the ARRA picked up the tab. The TRU waste removal project at Argonne is scheduled for completion by September 30, 2011.
- Demolition is scheduled to begin this spring on four buildings in the former Biology Complex at the Y-12 National Security Complex at the U.S. Department of Energy's Oak Ridge, Tenn., site. The project will eliminate more than 135 000 square feet of building space and is the largest of three Y-12 demolition projects slated for funding by the American Recovery and Reinvestment Act. Two of the four buildings in the Biology Complex D&D project were constructed in 1945 (buildings 9211 and 9769); building 9220 was built in 1967, and building 9224, in 1968. The buildings will be completely demolished, including disposition of all material and waste. The demolition is part of Y-12's ongoing effort to significantly reduce its footprint. The buildings have been vacant since late 2003.

ANL has been shipping TRU waste to the Waste Isolation Pilot Plant in New Mexico for three years, but the October shipment was the first time the ARRA picked up the tab.

- Savannah River Remediation LLC, the liquid waste contractor at the U.S. Department of Energy's Savannah River Site, produced 95 canisters of vitrified radioactive waste in 2009, surpassing the performance goal of 81 canisters. More than 2800 canisters have been filled since operations at the Defense Waste Processing Facility, the largest radioactive waste vitrification facility in the world, began operations in March 1996. This production represents more that 11 million pounds of radioactive sludge being treated and the removal of nearly 20 million curies from SRS waste.
- The U.S. Department of Energy has signed a Record of Decision on the treatment of high-level waste calcine at its Idaho National Laboratory, putting it closer to meeting a legal commitment to the state to complete treatment of the waste by the end of 2035. The DOE announced that a manufacturing process known as hot isostatic pressing (HIP) will enable it to treat some 5750 cubic years of highly radioactive calcine generated by the reprocessing of DOE-owned spent fuel to remove the high-enriched uranium for use in production reactor fuel and the subse-

The 100th ARRA-funded TRU waste shipment prepares to leave SRS.

quent volume-reduction of the resulting liquid reprocessing waste.

- The 100th American Recovery and Reinvestment Act–funded shipment of transuranic waste from the U.S. Department of Energy's Savannah River Site to the Waste Isolation Pilot Plant in New Mexico left South Carolina in mid-November, and was the last shipment of TRU waste from SRS to WIPP in 2009. Since TRU waste shipments started between SRS and WIPP in 2001, SRS has made more than 1000 of these shipments, and has safely shipped nearly 29 000 waste drums offsite.

International Briefs

- At least a dozen small communities have submitted bids to host Spain's centralized interim radioactive waste storage facility, although regional authorities may oppose some of these bids. Three of the communities already host nuclear facilities. The Spanish government has proposed paying a host community up to €7.8 million ($11 million) per year after the facility is operational. The €700-million ($1-billion) store, designed to be similar to the Habog facility in the Netherlands, will hold, for up to 100 years, an estimated 6700 metric tons of spent fuel, 2600 cubic meters of intermediate-level waste, and 12 cubic meters of high-level waste (resulting from the reprocessing, in France, of the Vandellos-1 fuel after that facility shut down in 1989).
- Three German opposition parties plan to hold a formal federal parliamentary investigation into past government decision-making on the high-level waste repository at Gorleben, a project that has been suspended since 2000. The controversy centers on whether German Chancellor Helmut Kohl in 1983 stated that the Gorleben salt dome was a suitable site for disposal of high-level radioactive waste, independent of scientific information and advice. The German elections last September resulted in the formation of a pro-nuclear government that wants to terminate the 10-year moratorium on work at Gorleben. In early January, the opposition parties, the Social Democratic Party, the Greens, and the Left Party, were negotiating the scope of the Gorleben investigation.
- A major hazard reduction milestone was reached at Sellafield in mid-November with the completion of the transfer and processing of more than 2300 cubic meters of medium-active solvent in Sellafield's Solvent Treatment Plant, representing more than 10 years of work by the teams involved. The treatment plant was built to treat most of the historic medium-active solvent inventory and future low-active wastes from both Magnox nuclear plants and the Thorp plant. Prior to the opening of the treatment plant, these wastes were stored in tanks on the site's tank farms. ■