

## ASLB: Congress, Not President or DOE, Should Decide Fate of Yucca Mountain

In a June 29 decision, the U.S. Nuclear Regulatory Commission's Atomic Safety and Licensing Board (ASLB) for the Yucca Mountain project ruled that the U.S. Department of Energy cannot withdraw its license application for the repository, stating: "Unless Congress directs otherwise, the DOE may not single-handedly derail the legislated decision-making process by withdrawing the application. The DOE's motion must therefore be denied."

The board stated that the DOE has no right to substitute its own ideas in place of those legislated by Congress, adding that the DOE and the NRC are bound by law to complete the work at Yucca Mountain unless Congress decides otherwise.

The national high-level waste repository program was created by the Nuclear Waste Policy Act of 1982. A 1987 amendment to the act selected the Yucca Mountain site (one of three sites being studied at the time) as the preferred location for characterization. In 2002, the DOE recommended to the president that the Yucca Mountain site be officially selected for the waste repository. The president agreed with the recommendation, the state of Nevada objected, and Congress voted to override that objection.

After the 2008 election of President Barack Obama, however, the Yucca Mountain project fell into disfavor with the new administration, which decided to cancel the project and appoint a Blue Ribbon panel to come up with new ideas for waste disposition. (Many have stated that the administration's move was political payback to Nevada Sen. Harry Reid, D, an ardent opponent of the project, for supporting Obama at an early stage in the 2008 election process.)

Considering this history, the ASLB stated that the original 1982 act put ultimate siting authority with Congress and not with the president or the DOE. "When Congress selected the Yucca Mountain site over Nevada's objection in 2002, it reinforced the expectation in the 1982 act that the project would be removed from the political process and that the NRC would complete an evaluation of [its] technical merits."

The ASLB ruling will be forwarded to the NRC commissioners, who will decide what the agency's next move will be. Regardless of which way the commissioners rule, the decision will almost assuredly go to the U.S. Court of Appeals for the District of Columbia Circuit for final resolution.

• Oral Arguments on lawsuits challenging the U.S. Department of Energy's termination plans for the Yucca Mountain project will be held no earlier than September 20, the U.S. Court of Appeals for the District of Columbia Circuit announced in early May. Under the court schedule, parties suing the DOE, the U.S. Nuclear Regulatory Commission, and President Barack Obama over the shutdown of the project filed a joint opening brief before the court in mid-June. The parties include Aiken County, S.C., as well as the state of South Carolina; three residents of Washington state, as well as the state itself; and the National Association of Regulatory Utility Commissioners (as an intervenor).

• Legislation introduced in early May by Sen. George Voinovich (R-Ohio), the U.S. Nuclear Fuel Management Corporation Establishment Act, would designate a government corporation, not the U.S. Department of Energy, to manage and dispose of spent nuclear fuel. The self-sustaining entity would have access to the Nuclear Waste Fund and would not receive government appropriations. This is the second time in two years that Sen. Voinovich has introduced such legislation, which he said is "paramount" to a U.S. nuclear renaissance. It is unlikely, however, that the bill will receive any action this year, and Sen. Voinovich is retiring at the end of this term.

• In early May, a ruling by the U.S. Court of Appeals for the District of Columbia Circuit gave the U.S. Department of Energy the go-ahead to continue dismantling the Yucca Mountain repository project in Nevada. That decision barred a request for a preliminary injunction to bar the DOE from further program dismantlement. According to DOE spokesman Alan Benson, the department expects to have completely dismantled the program's Las Vegas office by the end of the current fiscal year, which ends September 30.

• The U.S. Department of Energy's Blue Ribbon Panel on America's Nuclear Future has hired two experts to work as staff: Matthew Milazzo, a former senior policy adviser for nuclear affairs to Sen. George Voinovich (R-Ohio), and Alex Thrower, an official in logistics management in the DOE's Office of Civilian Radioactive Waste Management. Also joining the panel is Tom Isaacs, director of Lawrence Livermore National Laboratory's Office of Planning and Special Studies. He was made available to the commission by the DOE. The panel itself has formed three subcommittees: on waste disposal, on storage and transportation, and on advanced reactor and fuel processing systems.

## Supreme Court: North Carolina Did Not Violate LLW Compact Agreement

On June 1, the U.S. Supreme Court ruled that North Carolina did not breach its duties under the Southeast Interstate Low-Level Radioactive Waste Management Compact when it failed to take the appropriate steps required under the Compact to license a waste disposal facility in that state.

In the lawsuit *Alabama et al v. North Carolina*, filed in 2002, the states of Alabama, Florida, Tennessee, and Virginia and the Southeast Compact Commission for Low-Level Radioactive Waste Management alleged that North Carolina had 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 had been a member of the Compact until it withdrew in 1999. The suit asked for \$90 million in sanctions against the state.

Writing the decision, Justice Antonin Scalia said that North Carolina was under no obligation to continue underwriting the cost of building a disposal site after the other states stopped paying their shares in 1997. "The Plaintiffs' assertion that it was understood that the host state would bear the up-front licensing and construction costs, but recoup those costs through its regional monopoly on radioactive waste disposal, is not reflected in the compact," the justice wrote.

"The Commission is disappointed that the Court did not uphold the terms of the Southeast Interstate Low-Level Radioactive Waste Management Compact, a binding contract and a federal law," said Carter Phillips, attorney for the member states and the Commission. "The Court's decision today weakens the regional Compact system established by the United States Congress."

"This decision will not end our efforts to secure a safe and effective solution to the problem of low-level nuclear waste disposal. There remain several issues that the Court expressly did not decide, and the Commission will study how best to proceed with respect to those issues," said Michael Mobley, chairman of the Commission.

## GNEP: Renamed, With New Mission

Former President George W. Bush's Global Nuclear Energy Partnership (GNEP) has been renamed the International Framework for Nuclear Energy Cooperation (IFNEC) and has been given a new mission to broaden its scope to wider international participation. The change in title was approved by the GNEP steering group at a June

meeting in Accra, Ghana.

GNEP, launched in 2006, started out as a partnership of countries aiming to improve the proliferation-resistance of the nuclear fuel cycle while at the same time guaranteeing access to fuel supplies through both political and technological initiatives. Eventually, some 25 nations signed on to be members of the partnership. With the change of administration in the United States, however, the U.S. had maintained a low profile in the organization. The group focuses on collaboration to make nuclear energy more widely accessible to developing as well as developed countries in accordance with safety, security, and nonproliferation objectives to improve international energy security and to combat global warming.

## NRC Issues Inspection Report on Vermont Yankee Groundwater Contamination

The U.S. Nuclear Regulatory Commission staff has issued its inspection report on groundwater contamination issues at the Vermont Yankee nuclear power plant, which is located in Vernon, Vt., and operated by Entergy Nuclear.

The focus of the inspection was Entergy's response to the leakage of radioactive liquid into groundwater at the site identified earlier this year, as well as the company's implementation of the Groundwater Protection Initiative (GPI) instituted by the nuclear power industry in 2007. In the report, the NRC staff states that its extensive reviews have found that Entergy took prompt and effective action to identify the source of the leakage, halt it, and develop an effective plan to address any resulting groundwater contamination. With respect to the GPI, however, the NRC staff found that some voluntary aspects of the initiative were not completed at Vermont Yankee.

"Based on the results of this inspection, the NRC determined that Entergy-Vermont Yankee appropriately evaluated the contaminated groundwater with respect to offsite effluent release limits and the resulting radiological impact to public health and safety; and that Entergy-Vermont Yankee complied with all applicable regulatory requirements and standards pertaining to radiological effluent monitoring, dose assessment, and radiological evaluation," the report states. "No violations of NRC requirements or findings of significance were identified."

The affected groundwater at Vermont Yankee is not used for drinking-water purposes. With respect to any groundwater from the site migrating to the nearby Con-

necticut River, a calculation performed by Entergy—and independently verified by the NRC—estimated a dose of 0.000035 millirems of maximum exposure to members of the public from contaminated groundwater reaching the waterway.

The NRC continues to closely monitor and assess Entergy's investigation, conclusions, and remedial actions to resolve the issue.

A copy of the report is available on the NRC web site at [http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/listofrpts\\_body.html](http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/listofrpts_body.html).

In late June Entergy released its own findings on the cause of the tritium leak. The company stated that the leak was primarily caused by an earlier design deficiency and inadequate inspection of an underground area of the plant that could not be accessed. Because the plant's advanced off-gas (AOG) pipe tunnel was not accessible for inspection, Entergy said, staff was prevented from identifying the two leaking AOG pipes and from discovering that the tunnel drain was blocked with construction-related material left in the tunnel after work there in 1972. Subsequently, design and construction of an unrelated pipe connected to the tunnel created a pathway into the ground. The leakage from the two AOG pipes into the tunnel was caused by internal corrosion.

Entergy's analysis also found that the plant did not fully implement groundwater protection measures recommended in the industry's voluntary initiative on reducing groundwater contamination. The analysis found that plant management lacked adequate commitment to implement the initiative. Entergy concluded that the groundwater protection initiative, if it had been fully implemented, "may have prevented or led to more timely identification of the tritium leakage to the groundwater."

- In related news, the U.S. Nuclear Regulatory Commission announced in mid-June that it had established a senior management review group to evaluate the findings and recommendations of the internal Groundwater Task Force and identify possible policy issues for Commission consideration. The Groundwater Task Force issued its final report on June 11, containing conclusions based on several months' evaluation of the agency's past, current, and planned actions regarding radioactive contamination of groundwater and soil at U.S. nuclear power plants. The management group will decide whether it agrees with the independent Task Force analysis and how best to act upon the conclusions and recommendations contained in the final report.

## NRC Staff Recommendation on LLW Blending

According to the staff of the U.S. Nuclear Regulatory Commission, the NRC should revise and risk-inform its position on blending low-level waste streams as a way to lower the waste's classification, as opposed to banning the practice. In a report (SECY-10-0043) dated April 7, 2010, the staff recommended the following changes and clarifications that should be made to the existing blending positions: (1) clarify that a site-specific intruder analysis must be performed to determine whether an intruder would be protected, or the conditions necessary for such protection; (2) develop criteria defining acceptable homogeneity and sampling considerations; and (3) eliminate the "factor of 10 rule" for mixing of wastes that can be blended into a homogeneous mixture, because the concentration of the final mixture will be relatively uniform in the context of a site-specific intruder scenario.

This change could be implemented through a combination of rulemaking and issuance of guidance, the staff said.

At a June 17 meeting of the Commission, NRC Chairman Gregory Jaczko praised the staff's work on the blending report. "In developing the paper, the staff did a commendable job in soliciting input from the broad range of stakeholders that have taken an interest in this issue. We have heard from states, regional compacts, advocacy groups, waste generators, waste processors, and the Department of Energy. As we deliberate, we must remain focused on the crucial safety and technical questions at issue in order to make the right safety decision. It is also important that we continue to engage the public so that—if there is a policy change—we can implement it in the most effective way possible."

For more on blending, see "In Pursuit of Risk-Informing Low-Level Waste Disposal Regulations" and "To Blend or Not to Blend: Blending U.S. Commercial Low-Level Waste to Allow Disposal," *Radwaste Solutions*, May/June 2010.

## NRC Publishes Proposed Rule on Security of Radioactive Materials

The U.S. Nuclear Regulatory Commission is seeking public comment on proposed new regulations that would

codify and expand upon recent security measures the agency has imposed for certain sensitive radioactive materials. A proposed rule would add a new Part 37 to NRC's regulations in Title 10 of the U.S. Code of Federal Regulations (10 CFR), and make conforming changes to other parts of NRC regulations regarding radioactive materials.

The proposed rule will establish security requirements for the most risk-significant radioactive materials (those in Category 1 and Category 2 of the International Atomic Energy Agency's rankings of radiation sources), as well as for shipments of small amounts of irradiated reactor fuel.

"Radioactive source security is a high priority for the agency, and this new regulation will mark an important milestone in the progress that the agency has made in this area," NRC Chairman Gregory B. Jaczko said. "Through this rulemaking and other interrelated activities, the agency is contributing to an increase in the effectiveness of the nation's security." Other efforts Chairman Jaczko mentioned include implementation of the National Source Tracking System, the ongoing rulemaking for limiting the quantity of by-product material in a generally licensed device, and the efforts of the Radiation Source Protection and Security Task Force, an inter-agency group headed by the NRC.

The NRC took steps to strengthen the security of risk-sensitive radioactive materials immediately after the terrorist attacks of Sept. 11, 2001. Since that time, the NRC has issued various orders imposing enhanced controls, implemented requirements for fingerprinting and criminal background checks for people with access to certain radioactive materials, and developed and implemented the National Source Tracking System.

The new Part 37 and changes to other parts of 10 CFR contained in the proposed rule incorporate NRC's lessons learned in implementing those security measures, as well as stakeholder input on proposed language for the new rule. Codifying these requirements in NRC's regulations will enhance consistency of implementation as well as transparency and predictability of NRC's oversight of radioactive material security.

Comments will be accepted for 120 days following publication of the proposed rule in the *Federal Register*. Comments may be submitted over the federal government's rulemakings Web site at <http://www.regulations.gov>, using docket ID NRC-2008-0120. They may also be sent to Secretary, U.S. Nuclear Regulatory Commission, Wash-

ington, D.C. 20555-0001, ATTN: Rulemakings and Adjudications Staff; or e-mailed to [Rulemaking.Comments@nrc.gov](mailto:Rulemaking.Comments@nrc.gov).

The NRC will separately publish for public comment in the *Federal Register* guidance on implementing the new regulations.

## D&D Updates

- The U.S. Department of Energy has met a Tri-Party Agreement milestone by completing cleanup work on 11 different waste sites at the Hanford Site's 300 Area. Work on the waste sites began in 2002 and was completed in April by the DOE's River Corridor contractor, Washington Closure Hanford. During that time, 426 000 tons of soil and debris were removed from waste sites, with the most significant volumes coming from a waste site called the 618-7 Burial Ground, which contained more than 800 barrels of hazardous materials, 20 large contaminated stainless steel tanks, 100 drums of zircaloy chips, and extensive amounts of soil and debris containing lead contamination. Volumes of waste in the 11 waste sites ranged in size from 10 tons to 178 000 tons removed.

- The U.S. Department of Energy's Office of Environmental Management is creating an independent advisory panel to review and offer advice on the cleanup of high-level nuclear waste stored in underground storage tanks at three DOE sites. The panel will be established as a subcommittee of the DOE's existing Environmental Management Advisory Board. According to Ines Triay, assistant secretary for environmental management, the panel will be composed of independent experts and will focus first on the Hanford Site's Waste Treatment Plant, currently under construction but not expected to be completed until 2019. The panel will also review DOE strategies for retrieving and treating waste stored at the Savannah River Site and at Idaho National Laboratory. There have been numerous cost overruns and delays in the tank waste cleanup programs at Hanford and Savannah River.

- Dounreay is being demolished at a rate of 100 square feet each day. Fourteen buildings with a total floor space of almost 30 000 ft<sup>2</sup> were flattened during 2009–2010 so far. This means that the total area of property cleared under U.K. Nuclear Decommissioning Authority (NDA) ownership of the site is more than 178 000 ft<sup>2</sup>, or some 4.1 acres. More than 160 redundant structures and buildings

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have been removed from the site since the start of decommissioning, with more than 60 cleared in the period since 2005 when the NDA was formed.

- Blowing bubbles is not usually associated with processing liquid radioactive waste. Nevertheless, new bubbler technology and other enhancements are soon expected to double the amount of radioactive waste processed annually at the U.S. Department of Energy's Savannah River Site (SRS). The bubbler technology, which will be used at the Site's Defense Waste Processing Facility (DWPF), was modified from existing technology by Catholic University's Vitreous State Laboratory to improve melter performance. During processing, glass frit and radionuclides are combined in a melter and heated to form molten glass. The bubblers—tubular devices inserted into the melter—blow argon gas through the molten glass waste mixture to maintain an even temperature and allow higher-temperature operation, which produces the best glass form. According to SRS, inserting bubblers into the melter will significantly enhance the facility's capabil-



*Cutaway drawing of DWPF melter with two bubblers inserted.*

ity to process more than 36 million gallons of liquid radioactive waste being removed from the underground waste tanks at SRS. The installation and implementation is being funded by the American Recovery and Reinvestment Act.

- With the final shipment of U.S. Department of Energy radioactive waste removed from GE Hitachi Nuclear Energy's Vallecitos Nuclear Center, the DOE's Environmental Management Office announced the completion of DOE cleanup activities at the site. Accelerated by American Recovery and Reinvestment Act funds, the two-and-a-half-year project removed some 2303 cubic feet of radioactive waste from the 1600-acre commercial facility, located approximately 40 miles east of San Francisco, Calif. From 1967 to 1975, the facility conducted research work for the U.S. Atomic Energy Commission's Nuclear Energy Program, Fast Breeder Reactor Development Program, and the civilian nuclear power industry. As the successor to the AEC, the DOE was responsible for removing defense-related radioactive waste from a hot cell and a glove box used for government-sponsored research. Now that the DOE wastes have been removed, GE Hitachi Nuclear Energy will be able to reuse the hot cell for research and other commercial nuclear work.

### International Briefs

- Japan's Ministry of Economy Trade and Industry has approved the construction of a spent fuel storage facility in the country's Aomori Prefecture. The facility, to be operated by the Recyclable Fuel Storage Co. (a joint venture of Tokyo Electric Power Co. and Japan Atomic Power Co.) would store spent fuel from the companies' nuclear plants until it can be reprocessed at the Rokkasho J-MOX reprocessing plant—located some 50 kilometers (about 30 miles) away—construction of which has also been approved. It is estimated that construction of both facilities will take about five years. Once operational, J-MOX could produce 130 tonnes of heavy metal in mixed oxide fuel each year.

- Construction was completed, under budget and two months ahead of schedule, on the Sellafield Product and Residues Store, the first major project to be completed by Sellafield Ltd. under the ownership of Nuclear Management Partners on behalf of the U.K. Nuclear Decommissioning Authority. The facility will accommodate materials already at Sellafield that need to be retrieved from older facilities, repackaged, and placed in a modern facility. It will receive materials recovered from historic fuel manu-

facturing buildings that are now being decommissioned.

● The European Parliament has approved a European Commission proposal to extend financial aid to cover decommissioning of four shutdown reactors at Bulgaria's Kozloduy nuclear power plant at Belene. Two of the four VVER-440 units at the site were shut down at the end of 2002, and the other two were shuttered at the end of 2006. Between 2007 and 2009, the European Union provided €210 million (\$250 million) for decommissioning the units. In October 2009, the European Commission proposed earmarking an additional €300 million (\$360 million) for site cleanup and radioactive waste treatment between 2010 and 2013. In May, the Parliament approved the proposed additional aid, but called for stricter financial controls and more investment in energy efficiency. Of the proposed €300 million, the Parliament said Bulgaria should spend €180 million (\$216 million) on decommissioning, while the remaining €120 million (\$144 million) should go toward energy saving measures.

● The search has now begun for an "informed and willing community" to host a deep geological repository for Canada's spent nuclear fuel. The country's Nuclear Waste Management Organization (NWMO) is responsible for conducting the search and developing the facility. Key to the program will be an "Adaptive Phase Management" process under which communities will be in constant conversation with NWMO and can withdraw from the process at any time. The facility itself will be about 500 meters underground, and bundles of spent fuel will be placed in a metal basket within a 4-m copper canister. These will be regularly spaced underneath a network of tunnels in the rock and packed into place with bentonite clay. Depending on the site's geology, the network of tunnels could span an area of about 2.5 km by 1.5 km. ■