

NRC: "No Confidence" in Waste Disposal Options?

Two of the three commissioners on the U.S. Nuclear Regulatory Commission have voted "no" on issuing the NRC's final waste confidence rule, suggesting instead that the public be given additional opportunities to comment on whether the Obama Administration's decision to stop the Yucca Mountain Project has affected the proposed update of the rule. Commissioners Dale Klein and Kristine Svinicki, both Republicans, included lengthy comments explaining their decision to vote to only "partially" approve the rule. Both had voted to support the draft rule last October, before the 2008 elections that brought the Obama Administration into power. NRC Chairman Gregory Jaczko voted in favor of issuing the rule.

The ruling could have an impact on the construction of new nuclear power plants. A finding of waste confidence is legally required before U.S. utilities can proceed with plans to build new nuclear power plants. Some industry analysts were worried that the decision would give new ammunition to anti-nuclear activists who oppose new plant construction.

A new public comment period could force the administration to defend and explain its decision to scuttle the Yucca Mountain project. While the administration has cited its concerns about the safety of the project, many analysts have opined that the decision was a political one, payback to Sen. Harry Reid of Nevada, a long-time opponent of the project, in return for his early support of presidential candidate Barack Obama.

The Notation Vote Response Sheets, along with comments, for the three commissioners can be found on the Internet at <http://www.nrc.gov/reading-rm/doc-collections/commission/cvr/2009/> under document number SECY-09-0090.

Texas Signs Final WCS License Authorizing LLW Disposal

In early September, the executive director of the Texas Commission on Environmental Quality signed the final license that authorizes Waste Control Specialists LLC (WCS) to undertake the near-surface disposal of Class A, B, and C low-level radioactive waste at the company's Andrews County, Texas, facility, once WCS has completed all the necessary administrative requirements. According to WCS, the Andrews county facility is the first facility licensed for the disposal of LLW since Congress adopted

the Low-Level Waste Policy Act in 1980, which authorized states to form compacts for the safe, secure disposal of LLW. The Texas Compact is composed of the states of Texas and Vermont. The facility will dispose of LLW generated in the two states, as well as LLW generated by the federal government. It may also be able to dispose of LLW generated outside the compact states, subject to the approval of the Texas Low-Level Radioactive Waste Disposal Compact Commission.

Construction of the new disposal facility will take about a year, WCS said, with disposal operations scheduled to begin in late 2010.

Utah Radiation Control Board Approves Continued DU Disposal at Clive—But with a Catch

In late September, the Utah Radiation Control Board voted 8–3 to deny a request from Heal Utah, an environmental group, to bar EnergySolutions from disposing of depleted uranium at its Clive low-level waste disposal facility until the U.S. Nuclear Regulatory Commission completes work on a review of its regulations on the burial of the material. In the process, the Board amended the EnergySolutions license to reflect commitments made by the company in a recent letter to the Control Board, making those commitments enforceable. Among the commitments, EnergySolutions agreed to hire a consultant to assess the disposal method and to make any changes the consultant might recommend.

In mid-October, however, the board voted 7–1 on an amendment to its earlier ruling that requires EnergySolutions to complete a pending site performance assessment before it can bury any additional depleted uranium at the clive site. The company does not expect the performance assessment to be completed before December 2010. EnergySolutions has objected to the new requirement, saying the board action is "equivalent to" a moratorium, which is inconsistent with Utah state law. The board was not expected to finalize this latest ruling until its December meeting.

Depleted uranium, a by-product of uranium enrichment and weapons production, is unusual in that, unlike other LLW, its hazard level does not decrease as its radioactivity decays; rather, the material increases in risk over time because the decay products generate substantial radon gas. However, because it is not listed in the NRC's table of low-level wastes in Part 61 of the NRC regulations, it is considered Class A waste, the least hazardous category, and thus eligible for disposal at the Clive site.

Earlier this year, the NRC had voted to keep depleted uranium classified as Class A waste. At the time, Commissioner Gregory Jaczko voted against the decision; Jaczko has since become NRC Chairman. The NRC staff has expressed concerns about shallow-land burial of depleted uranium, particularly large quantities of the material or burial at humid sites with a potable groundwater pathway.

EnergySolutions has already accepted 49 000 metric tons of depleted uranium for burial at the site, and may accept an additional 14 000 more drums from the U.S. Department of Energy's Savannah River Site in South Carolina.

ILW Storage Facility Opens at U.K.'s Trawsfynydd Site in September

The Intermediate Level Waste (ILW) Store at the Trawsfynydd nuclear power plant site in Wales was officially opened on September 17 by Lord Dafydd Elis-Thomas, assembly member for Dwyfor Meirionnydd and presiding officer of the Welsh Assembly Government. Trawsfynydd, which is managed by Magnox North on behalf of the U.K. Nuclear Decommissioning Authority, is currently undergoing decommissioning. The nuclear plant generated electricity between 1965 and 1991. Defueling commenced in 1993 and was completed in 1995.

Construction of the £20 million (\$32 million) ILW Store began in May 2006 and was completed in March 2008. It can hold up to 368 concrete overpacks and 2444 drums containing ILW. It will hold wastes arising both from the

operational period of the Trawsfynydd plant and from the decommissioning period. Some 43 percent of Trawsfynydd's radioactive waste volume has already been packaged and is ready to be transferred to the store.

Jaczko Calls for Review of NRC Buried Pipe Oversight

In the wake of the August discovery of a tritium leak at the Oyster Creek nuclear power plant in New Jersey, U.S. Nuclear Regulatory Commission Chairman Gregory Jaczko has directed NRC staff to analyze the agency's oversight of buried piping and make recommendations on how it might be improved.

Exelon Corp., owner of the Oyster Creek plant, revealed in August that it had discovered a leak of tritium-contaminated water from an underground aluminum pipe at the plant site. Earlier this year, smaller leaks were discovered at the same plant, although none leaked beyond the plant site boundaries, and they posed no threat to the public. Tritium-contaminated water has also leaked at the company's Braidwood plant in Illinois. The company has pledged to clean up the contamination, and is working with state, local, and NRC officials to do so.

Jaczko stated that the NRC should expand and standardize its approach to the underground piping problem, rather than dealing with specific incidents as they occur. Jaczko suggested that the NRC look at what the agency is doing on a generic level in order to gather more information that could enhance their understanding of buried piping. He directed the staff to assess the adequacy of NRC requirements for the design, inspection, and maintenance of safety-related piping and to recommend necessary revisions to existing regulations, requirements, practices, or oversight regarding the integrity of buried piping.

Yucca Mountain Fiscal 2010 Budget Set at \$197 Million

As expected, at the end of September, a House-Senate conference committee approved some \$197 million in fiscal 2010 funding for the U.S. Department of Energy's Yucca Mountain



The new ILW Store at Trawsfynydd.

Project, but issued no directives to the DOE on how it should proceed with the repository project. President Barack Obama's administration is already on record as wanting to terminate the project, and a new Blue Ribbon panel of experts is expected to convene sometime this fall to consider the future of the project, as well as alternatives for high-level waste and spent nuclear fuel disposal.

The funding is part of a \$33.5 billion energy and water appropriations bill. Funding for the continuation of the U.S. Nuclear Regulatory Commission's licensing review in fiscal 2010 would be \$29 million, little more than half of the budget request of \$56 million.

In testimony before the Nuclear Waste Technical Review Board in late September, Chris Kouts, acting director of the DOE's Office of Civilian Radioactive Waste Management, which oversees the Yucca mountain Project, said that the ability of the program to perform any additional studies or tests, if those are needed to respond to NRC licensing questions, would depend on the program resources available. Kouts said the DOE has already filed responses to roughly 90 percent of the NRC's 570 requests for additional information. Those responses did not require any extra tests or studies.

D&D Updates

- Expansions and upgrades are under way at the Environmental Restoration Disposal Facility (ERDF) at the U.S. Department of Energy's Hanford Site using funds from the American Recovery and Reinvestment Act (ARRA). About \$100 million of the \$1.96 billion in stimulus funding that the Hanford Site will receive will be used to expand the ERDF and make improvements. The facility is Hanford's low-level radioactive and mixed waste landfill. About \$55 million will be used to construct two super cells at the facility, while \$45 million will be used to make a number of facility improvements and purchase additional equipment. All work is expected to be completed by the fall of 2011.

In addition, three spent fuel storage buildings at the Hanford Site are being demolished under a \$12.5 million ARRA project. In the early 1950s, the 212-N, 212-P, and 212-R buildings were used as underwater storage facilities for irradiated fuel rods prior to chemical processing. The fuel rods were transported by railcar from Hanford's nuclear reactors along the Columbia River and placed underwater in 20-foot-deep basins in the 200 North Area until they could be transferred to chemical reprocessing facilities in the center of the Site (200 North Area). In lat-

er years, two of the buildings were used to store equipment and waste, including electrical transformers contaminated with PCBs and contaminated railcars. The cleanup project involves demolition of the three buildings, as well as remediating waste sites near the buildings, and disposing of 15 contaminated railcars.

- In August, the Savannah River Site announced that it had hired 1000 new employees to work on ARRA-supported projects. Under ARRA, SRS is receiving a \$1.6 billion economic stimulus package, which is expected to accelerate the environmental cleanup activities at the site, save or create up to 3000 jobs, and reduce the site's operational footprint by about 40 percent. (For additional information on the plans for the stimulus funding at SRS, see "Putting the Stimulus to Work," *Radwaste Solutions*, Sept./Oct. 2009, p. 18.)

- The Nuclear Energy Institute has asked the U.S. Department of Energy to reconsider its plan to use its excess uranium to pay for the accelerated cleanup of the shutdown Portsmouth Uranium Enrichment Plant. Over the next several years, the DOE could transfer as much as \$200 million worth of uranium from its stockpile to commercial entities to pay for the cleanup. In a September 21 letter to the DOE, the NEI, citing the potential downward price spiral such a move could cause, which in turn might affect new uranium projects and jobs in the United States, urged the department instead to seek stimulus funding to finance the project.

- Two new trails are scheduled to be opened at the Fernald Preserve, site of the decommissioned Fernald uranium processing plant, to provide access to a much wider variety of wildlife habitat. The two-mile Hickory Trail will originate near the visitor's center and will allow viewing of prairie and edge habitats as well as mature hardwood and coniferous woodlots. The 1.5-mile Sycamore Trail will provide access to the Paddys Run riparian corridor as well as the prairies and vernal pools at the southern portion of the site. The new trails have been designed to increase the site's popularity with birders, photographers, and hikers.

To further enhance wildlife viewing opportunities, an observation platform is being constructed on the hill immediately north of the Lodge Pond. It will allow visitors to view prairies and wetlands. The observation platform should be completed before the end of 2009.

- In late August, crews working on the Hanford Waste Treatment Plant (WTP) Pretreatment Facility reached a significant milestone when they finished installing the structural steel that raises the facility's elevation from 28 feet to 56 feet. And work has already commenced on the

floor of the 77-foot elevation. Crews began installing the rebar, which reinforces the concrete floor, in mid-August. When complete, the Pretreatment Facility, the largest of the four major nuclear facilities that compose the WTP, will comprise five total steel elevations and reach an overall height of 120 feet. Its footprint is approximately the size of nearly four football fields. Construction of the \$12.2 billion WTP, which will vitrify the radioactive liquid waste currently stored in 177 underground tanks at the Hanford Site, began in 2002; the plant is expected to be operational in 2019.

International Briefs

- The first flask of spent fuel was dispatched in mid-August from the shutdown Sizewell A nuclear power plant in the United Kingdom, headed for the reprocessing plant at Sellafield. Defueling, involving some 310 flask-loads, is expected to be completed around 2012. Fuel removal had been planned for shortly after the plant shut down at the end of 2006, but challenges at the Sellafield reprocessing plant resulted in fewer transport flasks being available. Generating sites were given priority, so Sizewell A's defueling was delayed. Since plant shutdown, small-scale decommissioning projects have been completed. After defueling is completed, the plant will be placed in a "care and maintenance" status to allow radiation levels to drop before eventual dismantling and decontamination activities begin. Final site clearance should be completed in 2110—more than a century from now. Sizewell A operated between 1966 and 2006.
- In early September, defueling also began at Unit 3 of the four Chapelcross reactors. Defueling of the four reactors will continue until around November 2011, requiring some 270–300 flasks to transport all 38 075 fuel elements to Sellafield for reprocessing.
- In early September, Lithuania's Nuclear Power Safety Inspectorate (Vatesi) issued a license for the Ignalina nuclear power plant to construct an interim storage facility for spent RBMK-1500 fuel from Units 1 and 2. The license will also allow the plant to install ancillary equipment for management of spent fuel in the plant's reactors. A week earlier, in late August, Vatesi issued a license to build solid radioactive waste treatment and storage facilities at the site. Vatesi issued both licenses under preconditions that must be met before operation of the facilities can begin. For both projects, the plant must ensure physical protection and install security equipment at the construction site. The plant must also demonstrate that the contract has enough qualified workers to perform specific functions. And, by September 2010, as a precondition for the license for the spent fuel storage facility, Ignalina must prepare and receive approval for a separate project dedicated to manage damaged fuel. Ignalina signed a contract with the GNS-Nukem consortium for the design and construction of the spent fuel facility, while an additional contract was signed with Nukem for the design, construction, and commissioning of the solid waste facility.
- The United Kingdom is preparing to remove and package more than 1500 tonnes of radioactive waste from fast reactor experiments at Dounreay that has been buried in two underground vaults for up to 50 years. The older of the two vaults is an unlined shaft, 65 meters deep, first built in 1958. The second vault, a 750-cubic meter concrete box known as the "wet silo," has been used since 1971. Waste retrieved from the shaft and the silo will be segregated, characterized, and conditioned in cement containers for above-ground storage, pending a national management strategy for intermediate-level waste. The total estimated cost of the project, excluding the cost of managing the waste in the long term, is approximately £290 million (\$461 million).
- Japan's Rokkasho reprocessing plant, due to be completed this past August, will not be finished until October 2010; the delay will allow for cleaning and inspections of the vitrification facility. The reprocessing plant had been due to reprocess 160 tonnes of fuel during the year ending March 2010, with 320 tonnes scheduled to be reprocessed during the following year. However, with the further delay in the plant's completion, no fuel will be reprocessed by March 2010, and only 80 tonnes will be reprocessed in the following year.
- Vitrified high-level wastes from spent nuclear fuel sent to the United Kingdom for reprocessing will soon begin returning to the countries of origin. In a September 28 announcement, the U.K. Nuclear Decommissioning Authority said that the infrastructure is in place and plans are sufficiently advanced that the Vitrified Residue Returns (VRR) program can begin this fiscal year. The VRR program is the culmination of a 1986 government decision to exercise an option included in all reprocessing contracts dating from 1976 to return the wastes to the countries of origin. The return of all 1850 canisters of vitrified waste will take about 10 years to complete. The NDA's commercial transport subsidiary, International Nuclear Services, will be responsible for transporting the waste to Japan, the Netherlands, Germany, Switzerland, and Italy. ■