NRC Approves License for PFS Spent Fuel Storage Facility in Utah Desert

By a 3–1 vote in September, the U.S. Nuclear Regulatory Commission has authorized the NRC staff to issue a license to Private Fuel Storage LLC to construct and operate an independent spent fuel storage facility on Skull Valley Goshute tribal land in Tooele County, Utah. The actual NRC Commissioner vote was on the state of Utah's petition for review of Commission and Atomic Safety and Licensing Board rulings, which found that cruise missile testing and accidental crashes of military aircraft do not pose credible hazards to the proposed facility. These were the last outstanding issues before the Commission concerning the state and intervener challenges to the project. The vote caps an eight-year licensing process, which began in June 1997 when PFS submitted its license application.

Once a license is granted, PFS will market its facility to commercial nuclear operations and begin a two-year construction program. PFS will also work with the railroad industry and appropriate state officials to coordinate detailed transportation plans. The earliest the facility is expected to be in operation would be 2008.

Environmental groups and state officials have promised to challenge the decision and the project in court.

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Radwaste Bags Used in New Orleans Levee Repairs

Remember those video shots of helicopters dropping large sand bags into the breached levees in New Orleans, La., in the aftermath of Hurricane Katrina in late August? If those large bags looked familiar, it's because they were. They were, in many cases, standard radwaste disposal bags.

Several companies were involved in supplying radwaste bags to the Army Corps of Engineers, which was spearheading the repair operations. MHS Logistical Solutions provided more than 2000 of its 24 000-pound, 242-cubic-foot radwaste bags to the ACE. PacTec provided some 120 of the same sized bag, but then also provided more than 800 custom-built 15 000-lb bags. Because the ACE was filling the larger bags only about half full, the smaller bags ultimately saved the Corps money. The bags were filled with ordinary sand bags, as well as soil, road-based fill, and other materials.

The levees, repaired within a few weeks of the Hurricane, were briefly overtopped again after Hurricane Rita in September. At press time in early October, the levee repairs had essentially been completed.

State Regulators Approve Doubling of Envirocare of Utah's LLW Disposal Space

Regulators in the state of Utah have approved Envirocare of Utah's request to nearly double the amount of land licensed for disposal of low-level radioactive waste and mixed LLW. Envirocare currently has about 540 acres licensed at its Clive, Utah, site. The expansion would add some 536 adjacent acres to the licensed facility. The company did not seek permission to expand its uranium mill tailings license.

Under state law, the Utah legislature and governor must also approve the license changes. The company plans to seek the needed approvals when the legislature's next session begins in January. The company believes that a significant majority of the legislators and the governor will back the plan.

The company also plans to spent some $35 million in capital improvements to its facility, including a new railcar rollover, a concrete rubblizer, and an administration building.

D&D Updates

● The Maine Yankee nuclear power plant has officially completed decommissioning. In early October, the U.S. Nuclear Regulatory Commission amended the Maine Yankee license, reducing the land under the license from approximately 179 acres to the 12-acre Independent Spent Fuel Storage Installation. This marks the first time a commercial nuclear power plant in the United States has been fully decommissioned with all plant buildings removed. The nearly eight-year project was performed to a significantly higher radiological cleanup standard than federal regulations' 25-millirem per year level (and came in better than the state's 10 mrem/year target as well) and within the $500 million cost estimate.

Among the other accomplishments of the Maine Yankee decommissioning project, the Maine Yankee Atomic Power Co. cited the following: the first use of explosives to demolish a containment building (see "Taking Down the Maine Yankee Containment Building," *Radwaste Solutions,* Jan./Feb. 2005, pp. 40–43), largest single campaign to move spent fuel from wet to dry storage, creation of an upland marsh area, donation of 200 acres of plant property for conservation and environmental education, and sale of approximately 400 acres of plant property for economic development.

Going forward, Maine Yankee's primary purpose will be the safe storage of the plant's spent fuel and greater than Class C waste at the ISFSI at Bailey Point in Wiscassset.

● In late September, the U.S. Department of Energy's Fernald site produced its 1000th canister of treated Silos 1 and 2 waste. On a typical day, about 20 canisters of silos waste are produced through three treatment lines at the site's $170 million treatment facility. The waste is mixed with flyash and cement for stabilization before loading into steel canisters. Approximately 90 trucks leave the Fernald site each week loaded with these canisters, transporting them to the Waste Control Specialists site in Andrews County, Tex., for storage (see "Fernald Cleanup Effort on the Move Again: K-65 Materials Shipped to WCS," *Radwaste Solutions,* Sept./Oct. 2005, pp. 30-31).

● GPU Nuclear has applied for termination of Saxton's possession-only license, now that decommissioning activities are complete. The unit has been shut down since 1972.

● Final groundwater cleanup has begun at M Area at the U.S. Department of Energy's Savannah River Site, setting the stage for final area closure. M Area groundwater cleanup is utilizing a new Dynamic Underground Stripping (DUS) system, now operational at the site's Settling Basin. This system is removing volatile organic compounds (VOCs) that had been deposited into the basin from the production process in M Area's facilities. The DOE estimates that it will take some 39 months to remove the more than 1 million pounds of VOCs from M Area., compared to more than 200 years using pump and treat and/or soil vapor extraction technologies. Groundwater cleanup work, coupled with ongoing demolition work in M Area's former reactor materials production facilities, will end in final area closure later this decade. DUS was first developed by the Lawrence Livermore National Laboratory and the University of California–Berkeley, with DOE funding.

The Maine Yankee decomissioning marks the first time a commercial nuclear power plant in the United States has been decommissioned with all plant buildings removed.

Also at SRS, the radiation impact of activities at the site on the offsite public continues to be far below the DOE's all-pathway dose standard of 100 millirem per year. The largest radiation dose that any offsite individual could have received from SRS operations in 2004 is estimated to be 0.15 mrem, less than 1 percent of the DOE limit. Environmental monitoring is conducted extensively within a 1000-square-mile network extending 25 miles from SRS, with some monitoring performed as far as 100 miles from the site. The area includes neighboring cities, towns, and counties in Georgia and South Carolina. Thousands of samples of air, rainwater, surface water, drinking water, groundwater, food products, wildlife, soil, sediment, and vegetation are collected by state and SRS authorities and analyzed for radioactive and nonradioactive contaminants.

What's New at Yucca Mountain

- In mid-September, Edward (Ward) Sproat was nominated to head the U.S. Department of Energy's Office of Civilian Radioactive Waste Management, which oversees the Yucca Mountain high-level waste repository program. Sproat most recently has been serving as managing partner of McNeil, Sproat & Associates, a consulting firm. He has also held executive positions with Exelon Corp. and PECO Energy. The nomination must be confirmed by the U.S. Senate.
- The licensing process for the Yucca Mountain repository could take up to ten years, according to testimony before the Senate Environment and Public Works Committee by former U.S. Nuclear Regulatory Commission Commissioner Edward McGaffigan. Assuming that the U.S. Department of Energy submits a license application in 2006, that means that a repository could not open before 2016. The Senate committee is reviewing McGaffigan's nomination for a third term at the NRC.
- The U.S. Department of Energy has issued its draft Environmental Assessment on the proposed Yucca Mountain rail corridor through Nevada. The assessment will support the DOE's application to the U.S. Department of the Interior for a Public Land Order protecting a one-mile wide corridor along the proposed rail line from surface entry and new mining claims for a period of up to 20 years. The corridor is on public lands and goes from the Union Pacific railhead near Caliente, Nev., to the Yucca Mountain site. The Public Land Order would support the DOE's ability to evaluate and preserve options for siting the proposed rail line. Grazing permits, public access, and other current uses of the land would not be affected.
- The U.S. Department of Energy must release its draft license application for the Yucca Mountain repository, an Atomic Safety and Licensing Board has ruled. The ASLB, supporting a contention brought by the state of Nevada, which opposes the repository, concluded that the draft application is documentary material, is a circulated draft, and is not protected by the litigation work product or deliberative process privileges. Therefore, the ASLB said, the draft application must be loaded on the Licensing Support Network (LSN) with all other relevant documents before the DOE can certify that all repository-related documents have been loaded onto the network.

The DOE is appealing the decision, and in the meantime will delay certification of its LSN document collection until the appeal is decided. This could delay the license application for several months, since the department has said it will not be submitting the final license application until six months after all documents have been loaded onto the LSN.

- The U.S. Nuclear Regulatory Commission is proposing to revise its standards for radiation doses from the U.S. Department of Energy's Yucca Mountains repository to be consistent with the U.S. Environmental Protection Agency's newly published radiation standard for the period between 10 000 years and one million years after disposal. The new EPA standards leave in place the current standard of a peak dose of 15 millirems per year for the first 10 000 years following disposal, and specify a new standard of 350 mrem per year after 10 000 years. The proposed NRC regulations also mandate that the DOE study the effects of climate changes on periods after 10 000 years after disposal. The climate change analyses would be limited to the increased water flow to the repository as a result of any change, and any resulting release of radioactive materials to the environment. Finally, the proposed regulations specify that the DOE must calculate radiation doses to workers at the Yucca Mountain facility using the same methods that the EPA uses for calculating doses for members of the public.

The licensing process for the Yucca Mountain repository could take up to 10 years, according to former NRC Commissioner Edward McGaffigan.

NEI Reorganizes, Creates Post for Spent Fuel Management VP

The Nuclear Energy Institute, a membership organization of nuclear utilities and other companies in the nuclear

field, announced a reorganization, effective October 1, to allow it to better focus on key policy issues and future energy challenges. Among the changes, the NEI is creating a new post for vice president of spent fuel management, a post that was, at press time, still vacant.

Regulatory Updates

- The U.S. Nuclear Regulatory Commission is conducting site-specific spent fuel pool assessments and is hoping to complete these assessments by the end of the year. The agency is conducting the assessments to identify additional mitigation strategies to enhance the spent fuel pool cooling safety function under severe circumstances challenging the functional capabilities of the plant.
- The U.S. Nuclear Regulatory Commission and its Agreement States are going to be tightening controls over certain radioactive materials by the end of the year. The move is part of a joint effort between the NRC and its Agreement States to create better controls over radioactive materials that could be used by terrorists. The increased controls will affect some 550 NRC licensees and around 1650 Agreement State licensees.

International Briefs

- The International Atomic Energy Agency has selected the decommissioning of the Salaspils research reactor in Latvia as its decommissioning demonstration project. The 5-MW unit went on line in 1961 and operated until 1998. The IAEA will assist Latvia in dismantling the reactor and disposing of the radioactive waste.
- Russia was planning to open the country's first land-based storage facility for reactors removed from dismantled submarines in November. The facility at Saida Bay on the western Kola peninsula is designed to hold 120 units as sealed compartments for between 60 and 70 years, or until natural decay reduces radioactivity to manageable levels. It was financed with the help of Germany. Russia had previously stored its reactors in seawater, but that type of storage capacity was running out. Another land-based reactor storage facility for Russia's Pacific fleet is under construction near Razboynik Bay. The world's only other dedicated land-based storage facility for submarine reactors is in the United States, at the Hanford site.
- Ukraine is threatening to fire Framatome and build a spent fuel storage facility for Chornobyl fuel without the French vendor. Ukraine is upset at the rising costs (now up to more than 230 million euros) and slipping schedule (to 2010) of the facility, which under the original contract was to open in 2005. Donors to the International Chornobyl Fund, managed by the European Bank for Reconstruction and Development, have postponed to the end of the year a decision on how to proceed with the project.

Speaking of Chornobyl, a major report by eight United Nations agencies concluded that the long-term health and environmental impacts of the 1986 accident were far less catastrophic than feared. Indeed, the study stated, the governments of Ukraine, Belarus, and Russia, the three countries most affected by radioactive fallout from the Chornobyl accident, should work toward ending the "paralyzing fatalism" of ten of thousands of their citizens who wrongly believe that they are still at risk of an early death because of the accident. Continuing medical monitoring of these people is no longer a smart use of limited resources, the report continued, and has the effect of contributing to mental health problems among this population because it reinforces their fear of early death.

The report notes that the vast majority of the 600 000 area residents and workers in the affected area received relatively low doses of radiation, comparable to naturally occurring levels of exposure. The survival rate among the 4000 children in the region who developed thyroid cancer has been 99 percent. An expected spike in fertility problems and birth defects has failed to materialize. Total deaths attributed to radiation exposure from the accident are fewer than 50, the report concluded, and most of these were the emergency workers who died in the first months after the accident.

- Cost estimates for the United Kingdom's national nuclear cleanup have jumped from £48 billion to £56 billion ($86 billion to more than $100 billion) in the past three years, primarily because of a more coherent and detailed approach to cost estimating since the formation of the national cleanup agency, the Nuclear Decommissioning Authority, and cost estimates could continue to rise as the scale of the work becomes better understood, NDA Chairman Anthony Cleaver reported. On the other hand, time schedules have contracted, with some sites now projected to be cleaned up 100 years earlier than previous estimates. ■