

EPA Issues Yucca Mountain Standard; Other YM News

On June 6, the U.S. Environmental Protection Agency released its radiation protection standard for a proposed spent-fuel and high-level waste repository at Yucca Mountain, Nev. The standard would establish an "all pathways" radiation limit of 15 millirems per year and a separate groundwater provision of 4 millirems per year. Now that the standard has finally been released, the U.S. Department of Energy can prepare final criteria for an anticipated presidential decision on the repository by the end of this year.

After the EPA action, Energy Secretary Spencer Abraham stated: "EPA has issued tough and challenging standards, tougher than the NRC and the National Academy of Sciences considered necessary, but we believe we can meet the requirements of environmental and groundwater standards outlined by the EPA."

A proposed version of the standard has been in circulation for some time. Indeed, the EPA's standard has caused some friction between the EPA and the U.S. Nuclear Regulatory Commission, which had proposed its own all-pathways standard of 25 millirems per year.

The groundwater standard in particular has drawn a great deal of criticism from the NRC and the nuclear industry. Noted Marvin Fertel, the Nuclear Energy Institute (NEI) senior vice president for business operations: "An 'all pathways,' or overall, radiation standard can conservatively meet the Energy Policy Act's individual radiation protection requirement by comprehensively addressing all potential radiation exposures, including those from groundwater. This 'all pathways' standard fully protects public health and safety. For example, the 15 millirem 'all pathways' limit in the EPA rule is five and one-half times less than the exposure level from working in the U.S. Capitol for one year, and two times less than the typical exposure level from a medical X ray."

The groundwater provision "lacks a sound scientific basis," Fertel continued; it "does nothing to increase public health and safety protection."

The NEI filed suit on June 6—the same day the standard was issued—to challenge it both in the U.S. District Court for the District of Columbia and in the U.S. Court of Appeals for the District of Columbia Circuit.

■ In other Yucca Mountain news, in mid-May the DOE issued the 900-page "Yucca Mountain Science and Engineering Report," which summarizes the results of 20 years of scientific and technical study of Yucca Mountain, as well as the long-term performance of the potential repository.

The report presents the latest study of the capabilities of the repository's system of natural and engineered barriers to protect public health and safety. The report

shows that under the most likely scenario, the public will not be exposed to radiation from the repository over the 10 000-year proposed regulatory compliance period.

The potential repository would be sited deep enough underground to protect waste from exposure to the environment or inadvertent human intrusion into the facility, the report notes. It would be isolated not only from present-day groundwater levels, but also from future possible fluctuations of the water table.

According to the report, the mountain's natural barriers would help isolate the spent fuel and HLW by limiting the amount of water entering the repository and, if the corrosion-resistant disposal packages were breached, limiting the movement of radionuclides through the mountain.

The rock for a potential repository should be able to sustain the excavation of stable openings that can be maintained during repository operations and isolate the waste for an extended period after closure. The rock should also be able to absorb any heat generated by the waste without undergoing changes that could threaten the site's ability to safely isolate the waste. The rock should also be of sufficient thickness and lateral extent to build a repository large enough to support the design's intended disposal capacity. Finally, the amount of suitable rock should provide adequate flexibility in selecting the depth, configuration, and location of a repository.

In addition to the science and engineering report, the DOE issued a Supplement to the Draft Environmental Impact Statement, The 2000 Total Systems Life-Cycle Cost Report, and The 2000 Fee Adequacy Report Assessment.

The EIS supplement updates the draft EIS issued in August 1999, and states that for the first 10 000 years of repository operation, there would be no release and no exposure from the spent fuel and HLW disposed of in the mountain. After 10 000 years, the estimated dose level at 20 kilometers would be well below naturally occurring background levels.

The life-cycle cost report notes that the DOE has spent \$6.7 billion through fiscal year 2000 on the repository. The total estimated future cost (from the period 2001 to 2119) is \$49.3 billion in year 2000 dollars, for a total of \$56 billion.

The fee adequacy report notes that the current 1.0 mil per kilowatt-hour fee charged for electricity generated and sold is "adequate," and it recommends that the fee not be changed.

■ New U.S. Senate Majority Leader Tom Daschle (D-S. Dakota) wasted no time in expressing his views on the proposed Yucca Mountain repository. Even before he took office in early June as the Senate's most powerful member, Daschle went on record as saying he was against siting an underground nuclear waste repository at the mountain, stating that he has questions about the site's safety and reliability.

States Express Concern about DOE Budget Levels for Site Cleanup

Governors and state attorneys general are going on record as opposing spending cuts in the nuclear cleanup budget proposed by the Bush administration earlier this year.

In an April report to the U.S. Department of Energy, a National Governors Association task force has warned the DOE that it risks renewed legal warfare with states unless fiscal 2002 funding for environmental cleanup is increased. Most former nuclear weapons sites have cleanup agreements between the states in which they are located, the DOE, and the U.S. Environmental Protection Agency.

The task force noted that the legally enforceable environmental compliance agreements at the weapons sites make DOE subject to fines and penalties if cleanup milestones are not met. Those agreements also require the DOE to ask Congress for sufficient funds to achieve compliance. "Budget requests that fall short of funding levels required to ensure compliance are counterproductive both environmentally and legally," the task force report stated.

DOE officials have suggested that they may need to renegotiate compliance agreements. This, the task force said, would not be well accepted in affected communities and states, making it harder for the DOE and state officials to agree on strategies and goals. "Keeping these commitments is essential to maintain public confidence in the department's ability to manage itself and its contractors to accomplish the cleanup mission," the task force report said.

In addition, the report noted, budget cuts are generally counterproductive, since they actually increase cleanup costs over the long term. The longer cleanup efforts are delayed, the longer the DOE must pay "mortgage costs" to safely maintain aging facilities and prevent leaks to soil and groundwater, the report stated.

■ Attorneys general from ten states are also giving notice to the DOE that cleanup budget cuts are not acceptable. In a June letter to Energy Secretary Spencer Abraham, the attorneys general repeated the argument that the short-term savings from cuts in the nuclear cleanup budget will mean greater costs in the long term. In addition, they said, the spending levels proposed by the Bush administration will trigger widespread violations of the cleanup agreement deadlines.

The letter was signed by attorneys general from Colorado, Idaho, Nevada, New York, Oregon, California, Missouri, New Mexico, Ohio, and Washington state. The letter includes an appendix that outlines what the states think the DOE should do in tackling nationwide cleanup, including:

- Speeding up cleanup to trim long-term costs.
- Adding cleanup money when the DOE adds to the scope of a program.
- Stabilizing appropriations from year to year throughout all the sites.

- Emphasizing that contractor fees should be based on performance.

Minnesota Legislative Proposal Would Allow Expanded Dry Cask Storage at Prairie Island

A legislative proposal introduced in mid-May in Minnesota would expand dry cask storage of spent nuclear fuel at Xcel Energy's two-unit Prairie Island nuclear plant, preventing a forced closure of the plant in 2006, when the plant's current storage capacity is reached.

The bill, introduced by state Sen. Mark Ourada and state Rep. Loren Jennings, would undo a 1994 agreement that limits Xcel's outdoor dry storage to 17 casks, and would allow plant operators to store the spent fuel as needed until the plant licenses expire in 2013 and 2014.

Xcel Energy has already filled 12 storage casks and expects the remaining five casks to be filled by 2006. If the utility cannot get authorization for additional storage or find some other storage solution (the company is one of several utilities working to open a Private Fuel Storage facility in Utah), it would be forced to shut down Prairie Island before the licenses expire.

If the power plant were to shut down, the state would lose about 26 percent of its electricity supply.

The bill also contains provisions in case both the two-unit Prairie Island and the one-unit Monticello plants apply for and receive license extensions. The legislation specifies that no additional state approvals or environmental review would be needed to allow continued operation of the three nuclear units.

The bill is expected to be a top priority for the next legislative term, in 2002, given the fact that Minnesota may be facing energy shortages in the near term.

New EPA Rule on Mixed Waste Published

On May 16, the U.S. Environmental Protection Agency published a new rule that will allow generators of mixed waste—waste that is both hazardous and radioactive—to claim a "conditional exemption" from Resource Conservation and Recovery Act (RCRA) rules for mixed waste that meets certain criteria, thus reducing the dual regulation of the waste. The waste would remain subject to U.S. Nuclear Regulatory Commission or NRC Agreement State regulations for labeling, transportation, and disposal, and it must be kept in tanks or containers that comply with chemical compatibility requirements.

The EPA compared NRC low-level waste and EPA hazardous waste storage and treatment requirements and concluded that the technical design and operating standards of the NRC meet or exceed RCRA standards in virtually all respects. In issuing the rule, the EPA stated that "given NRC waste management, we do not believe that the addition of

RCRA . . . regulation is necessary to protect human health or the environment.”

The rule becomes effective November 13, 2001.

International News

■ In mid-May, the Finnish government ratified a decision in principle on the final disposal facility for spent nuclear fuel. The parliament voted 159 to 3 to pass a measure that will allow for the disposal of spent fuel generated by Finnish nuclear power plants at a site in Olkiluoto. The overwhelming vote demonstrates that the disposal plan has wide political support in the country. An application for the project had been submitted by the country's radioactive waste management agency, Posiva Oy, in May 1999.

Construction of the repository is expected to begin in 2004. Investigations at final disposal depth can begin around 2006. These investigations will study the geohydraulic, geochemical, and mechanical properties of the Olkiluoto bedrock in detail and will also test disposal technology in realistic conditions.

■ Canada has introduced a Nuclear Fuel Waste Act before parliament. The Act would require commercial utilities that own spent nuclear fuel to set up a nonprofit Waste Management Organization (WMO) that would, within three years, propose a storage/disposal strategy to the government. After Cabinet approval of the strategy, the WMO would implement it for both commercial spent fuel and for government-owned spent fuel (the latter on a fee basis). The Act would also require the spent-fuel owners to establish a trust fund to cover future spent-fuel management and disposal costs. The legislation would lead to a government decision without the need for referring the proposals to yet another review by an environmental assessment panel.

■ The Russian Duma has voted 243 to 125 to approve an amendment to the country's environmental law to allow the import of spent nuclear fuel from other nations. Three bills relating to spent-fuel storage in the country are expected to be approved by the upper house as well, and President Putin has pledged to sign them promptly. Russia has been considering establishing an international spent-fuel storage or disposal facility as an income-producing activity. ■