

Energy Secretary Sends Yucca Legislation to Congress

Some 20 years and \$8.6 billion after Yucca Mountain in Nevada was first rated by the US Department of Energy as the best site in the country to permanently store tens of thousands of tons of high-level nuclear waste, the Bush administration is beginning a new push to get the languishing project moving. But the new initiative, a legislative proposal DOE Secretary Samuel Bodman sent to Congress in early April, faces a difficult time on Capitol Hill.

Even before Bodman sent the proposal, Senator Pete Domenici (R-NM), chairman of the Senate Energy Committee, said that it would be difficult to conduct a debate on the controversial Yucca Mountain program in a congressional session that is caught up in election-year politics. And although Bodman has sent the proposal to Congress, DOE officials remain reluctant to say when they will submit to the Nuclear Regulatory Commission the application to begin construction of the facility. In testimony before the Senate Environment and Public Works Committee earlier this year, DOE official Paul Golan said a "schedule" for the application's submission to the NRC would be published "later this summer." The application was originally intended to go to the NRC in 2004.

In a letter to the Senate and House that accompanied the legislative proposal, Bodman said the "existence of a repository at Yucca Mountain is critical to the expanded use of nuclear power." Even with the administration's new proposal for a global nuclear energy partnership, which focuses on recycling nuclear waste instead of storing it, Bodman said the Yucca repository "will continue to be

necessary to deal with the spent nuclear fuel and high-level radioactive waste that will be generated by those [recycling] technologies."

Currently about 55 000 metric tons of spent nuclear fuel and high-level radioactive waste are stored at more than 100 sites in 39 states, according to DOE officials. An additional 2000 metric tons of high-level nuclear waste is being generated each year.

The proposed legislation calls for several specific actions by Congress to make the development of the Yucca site possible. DOE asks that 147 000 acres of land surrounding Yucca Mountain, which is located about 90 miles northwest of Las Vegas, be withdrawn from public use. Possession of the land by DOE is one of the NRC requirements for granting a license to build the facility. The legislation would also repeal the 70 000-metric-ton capacity limitation for waste storage at the facility and allow the limit to "be determined by the actual physical capacity of the mountain."

The legislation would also reclassify the Nuclear Waste Fund money paid by nuclear-power-plant operators to cover the cost of disposal of radioactive waste. The fund now contains about \$15 billion, but that money, by law, cannot be used to directly pay for the development of Yucca Mountain. Instead, the Yucca project is funded by discretionary appropriations from the civilian nuclear-waste program. Freeing up the Nuclear Waste Fund money for Yucca could significantly increase funds available for the project. There are other provisions that would "simplify" the regulatory requirements related to Yucca and, according to a DOE



Yucca Mountain, Nevada

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analysis, would “eliminate lengthy, largely duplicative reviews” of the transport and storage of nuclear waste.

On another front in the push for Yucca, the US Environmental Protection Agency is expected to announce in the next several months a new standard for limiting radiation exposure at the Yucca repository for a one-million-year period. The revised standard is needed since the previous standard, based on the repository’s being safe for 10 000 years, was thrown out in 2004 by the US Court of Appeals in the District of Columbia because it was not “based on and consistent with” an earlier National Academy of Sciences radiation peak-dose safety recommendation.

While Domenici is doubtful that the Yucca legislation will see any action this year, the Republican staff of the Senate Committee on Environment and Public Works delivered a report in March to committee chairman James Inhofe (R-OK) strongly urging that the Yucca project move forward. The report concluded that “the more we examine Yucca Mountain, the better it looks. There is certainly no reason in science not to move forward directly with the project.”

Yet at a hearing Inhofe held after receiving the report, Sen. Harry Reid (D-NV), who has staunchly opposed the

development of the waste facility in his state, testified, “I am convinced the proposed Yucca Mountain nuclear-waste dump will never be built because the project is mired in scientific, safety and technical problems. The . . . project is a failure. I have fought against Yucca Mountain for decades, and I will continue to fight it.”

Jim Dawson

Debye Stripped of Honors Because of Nazi Past

Two universities in the Netherlands have distanced themselves from Dutch-born Nobel laureate Peter Debye in light of new scrutiny about his actions in Nazi Germany.

Utrecht University has stripped Debye’s name from its Institute of Physics and Chemistry of Nanomaterials and Interfaces, and Maastricht University will no longer award an international prize for mid-career physicists and chemists unless the sponsoring foundation renames it. The moves came in February, shortly after publication of *Einstein in the Netherlands* (Ambo/Anthos, Amsterdam). The book’s author, Sybe Rispens, uncovered a letter showing that Einstein

tried to prevent Debye from getting a job in the US. The book also notes that Debye considered returning from the US to wartime Germany in 1941, and that he signed letters “Heil Hitler.” For example, in 1939, he wrote to members of the German Physical Society, of which he was president, that “because of circumstances beyond our control, the membership of German Jews as defined by the Nuremberg Laws in the German Physical Society can no longer be maintained.” Anyone “affected by these measures,” he continued, should “communicate their resignation from the society to me. Heil Hitler!”

The Netherlands Institute for War Documentation confirmed the authenticity of the documents cited in Rispens’s book, and the universities have begun to investigate their meaning in the context of the times, says Jeannine Hermans, spokesperson for Maastricht University’s executive board.

But regardless of the historical context, she says, “Maastricht University doesn’t want to honor a person if there is a reasonable doubt that he stood up for academic freedom.” Adds Leo Jenneskens, director of the former Debye Institute at Utrecht, “I can understand the choice of our university board in deciding that the name is not suited as a role model.” Still, he says, the decision was hasty. “The letter [to members of

Nobelists Create Films on Solar Power

Do you know that the solar energy that strikes the Earth’s surface for one hour is enough to feed the world’s current electricity needs for one year?” asks John Cleese of Monty Python fame in a new, hour-long documentary, *The Power of the Sun*. “So why haven’t we gone solar already?” he continues. “I mean, it’s pollution free; there’s no global warming; there’s no dependence on foreign oil powers; it’s decentralized, so it’s virtually terrorist-proof; and effectively there’s an infinite supply.”

The film tours the history of solar power, from the controversy over the wave and particle theories of light to the first solar-powered batteries made at Bell Labs in 1954 to current developments on solar panels. Interviews with researchers guide the audience through the science and show some of the ways solar power is used today, such as on satellites and other spacecraft, in lighting at remote airports, and for cooling the vaccines carried by camels through the desert. Solar energy is a \$7 billion industry, and it’s growing 30%–35% a year, according to the film. A 22-minute companion film focuses on the science of silicon solar cells and is intended for high-school students and college freshmen with a physical sciences bent. The \$500 000 it cost to make and distribute the films came from state, private, and federal sources. A DVD with both films can be purchased for \$10 at <http://www.ucsbstuff.com>.

The Power of the Sun was the brainchild of solar energy historian John Perlin and Walter Kohn, a Nobel laureate in chemistry at the University of California, Santa Barbara, some of whose work is related to solar materials. Kohn’s assistant knows Cleese, which is how the British comedian and actor became the narrator for the longer film; a high-school teacher narrates the short one.

Kohn says he hopes the films will make “a small contribu-

tion” to the world’s energy problems. “I am a member of the Basic Energy Sciences Advisory Committee to the Department of Energy, so I had a front-row view of what was happening nationally and internationally concerning energy,” he says. “And I was getting terribly worried.”

“Overall demand [for energy] is still rising, and it’s clear that it has very negative results—most dramatic are global warming and the melting of the arctic ice caps and glaciers. It’s happening in front of our eyes,” continues Kohn. Toward the end of the film he says, “I am convinced that energy is one of the make-or-break challenges of our times. Unless we put our minds to it, the second half of the century is going to be the beginning of a worldwide disaster. On the other hand, if we do put our minds to it, I am convinced we can look forward to a better future. And solar energy is going to be part of that solution.”

Toni Feder

Nobel movie-makers: Walter Kohn (right) and Alan Heeger were, respectively, the executive producer and a science adviser in the making of *The Power of the Sun*.

