National Conference of State Legislatures

# NUCLEAR unWASTEd NEWS

A Quarterly Summary of Generation, Transportation, Storage and Disposal Issues

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## Yucca Mountain

### DOE Submits Yucca Mountain License Application

*June 3, 2008*

The Department of Energy (DOE) announced its long-awaited submittal of a license application to the Nuclear Regulatory Commission (NRC) to construct and operate a deep, geologic repository for the final disposal of the country's high-level radioactive waste and spent nuclear fuel at Yucca Mountain, Nev.

The Nuclear Waste Policy Act Amendments of 1987 directed DOE to characterize the site at Yucca Mountain, and in 2002, Congress and President Bush designated Yucca Mountain as the sole site for development of a repository. After more than two decades of scientific study and state/tribal interaction on the project, DOE submitted the license application this week, along with a Final Environmental Impact Statement and approximately 200 key documents. More than 3.6 million documents related to the Yucca Mountain repository are available to the public on the NRC's Licensing Support Network.

The license application outlines DOE's plans to dispose of spent fuel and high-level waste in a series of tunnels beneath the surface of the earth. Currently, the material is stored at 121 commercial nuclear reactor sites and DOE facilities in 39 states. In a press conference about the license application release, Secretary of Energy Samuel Bodman stated, "We are confident that the NRC's rigorous review process will confirm that the Yucca Mountain repository will provide for the safe disposal of spent nuclear fuel and high-level radioactive waste and will be protective of human health and the environment now and into the future." The NRC will spend up to six months reviewing the application to ensure it is complete and ready for full consideration, after which the NRC will take three to four years to examine the 8,600-page document and determine whether to grant DOE a license.

Several factors may impede smooth development of the repository at Yucca Mountain. The State of Nevada opposes the facility and plans to file more than 600 contentions against the license. Congress has also reduced the budget for the repository program in recent years, which has hindered DOE's ability to meet milestones such as constructing a railway in Nevada for transporting nuclear waste to the repository. Utility ratepayers have contributed to a Nuclear Waste Fund since the early 1980s to pay for the repository, and although the account now stands at about $20 billion, funding for the project is dependent on congressional appropriation and therefore oscillates unpredictably based on political will.

**In this Issue:**



Along with funding constraints, the total inventory of waste in the United States is expected to reach the legal limit of disposal capacity at Yucca Mountain by 2010. DOE hopes to expand the statutory cap of 70,000 metric tons to a volume (perhaps double the current limit) based on scientific feasibility to maximize use of the mountain. Several federal bills have been proposed to address the capacity issue, access to the Nuclear Waste Fund and other potential barriers.

The DOE Office of Civilian Radioactive Waste Management, which directs the Yucca Mountain project, does not expect the national repository to be up and running until at least 2020. Debates about the best way to manage nuclear waste will likely continue over the decade to come, and states will determine for themselves whether to promote or oppose new nuclear power based in part on the level of confidence they have in the federal government's plans for the ultimate disposal of radioactive waste.

Licensing Support Network (Application)
DOE Press Release
Other LA Info (DOE Office of Civilian Radioactive Waste Management)

## Cleanup and Waste

### GAO Report Questions DOE Information on Tank Waste

*July 1, 2008*

The Government Accountability Office (GAO) released a report (June 2008) that questions the sufficiency of information related to tanks used by the Department of Energy (DOE) to store radioactive and hazardous waste at the Hanford facility in Washington state.

The Hanford site was used for weapons production from 1943 until the late 1980s. The waste generated at the facility is stored in single and double-shell tanks before it is ultimately treated. According to the report, DOE lacks sufficient information to evaluate the structural integrity of the single-shell tanks. While DOE and the GAO agree that the double-shell tanks are structurally sound, the GAO argued that, "the condition of the older, single-shell tanks — nearly half of which are confirmed or presumed to have already leaked — is much less certain."

The waste at the Hanford site will have to be contained for the foreseeable future. Treatment of the waste is scheduled to begin in 2019 and continue for at least three decades. The concern is that DOE cannot safely predict that the tanks currently in use will be able to contain the waste for the time period outlined.

DOE also is in the process of renegotiating cleanup milestones that it previously reached with the state of Washington and the U.S. Environmental Protection Agency (EPA). Under the existing agreement, DOE must have the single-shell tanks emptied by 2018. Even though the single-shell tanks were originally intended to be used for one or two decades, one current proposal would extend the target date to 2040. "The only certainty is that the tanks are aging, and at DOE's present rate of progress, all will have exceeded their design life — many significantly — by the time the tanks are finally emptied and closed," the report says.

The report suggests that DOE "give priority" to its upcoming assessment of the single-shell tanks. It also recommends an evaluation of the risks posed by the waste every three to five years as well as the need for DOE to develop "realistic" milestones in conjunction with Washington and the EPA.

The report drew a mixed response from officials at DOE. In a written statement, Dr. Ines Triay, principal deputy assistant secretary for DOE's Office of Environmental Management, recognized the need for continued monitoring and technological development, but disagreed with the report's conclusion that DOE lacked sufficient information to make sound decisions.

GAO Report
Tricity Herald news article

### Idaho Wins Court Decision on Nuclear Waste Cleanup

*April 3, 2008*

The Ninth Circuit Court of Appeals agreed with the state of Idaho that the U.S. Department of Energy (DOE) must remove all transuranic waste from the Idaho National Laboratory (INL).

Transuranic waste (rags and other debris contaminated with radioactive elements heavier than uranium) that resulted from Cold War nuclear weapons production was shipped to INL from the Rocky Flats weapons site in Colorado in the 1950s through 1970s. Some of the waste was stored above ground and is now being packaged for shipment to the Waste Isolation Pilot Plant in Carlsbad, N.M., for disposal. Other transuranic waste was buried under about 36 acres at INL. Disagreement between the state and DOE lies with how to manage this buried waste.

The burial method used several decades ago involved putting the waste in unlined pits located about 600 feet over the Snake River aquifer in southeast Idaho. DOE claims that the expense to remove all waste (about $13 billion) and the additional radiation exposure to workers could be avoided by removing only a portion of the waste (from about five acres) and covering the rest with a barrier to prevent leakages into the aquifer.

The federal court determined that a 1995 agreement among Idaho, DOE and the U.S. Navy stipulated removal of all transuranic waste and applied to both above-ground and buried wastes. Idaho had halted shipments of transuranic waste into the state in the 1980s, but in 1995 agreed to accept limited shipments in return for DOE cleaning up the site and removing the waste by 2018.

The U.S. Justice Department is reviewing the ruling, and may seek an appeal to the U.S. Supreme Court. A draft cleanup plan by the parties involved is due June 1, after which state and federal regulators may provide comments before arrangements for cleanup are finalized.

Source: "Federal Court Agrees With Idaho Stand That All Transuranic Waste Must Go," Nuclear Waste News vol. 28, no. 7 (March 31, 2008): 1, 3.

## Congressional and State Considerations

### Congress Considers Sale of Uranium Stockpile

*May 7, 2008*

The U.S. Department of Energy (DOE) manages a large stockpile of depleted uranium in Paducah, Ky., and Portsmouth, Ohio. Congress is considering legislation to determine what to do with the material. Once considered waste intended for offsite disposal, the recent skyrocketing price of uranium—from roughly $8 per pound to $95 per pound—in the last eight years, has forced DOE and Congress to give the material another look. Following a hearing last month on the issue, the House Energy and Commerce Subcommittee on Oversight and Investigations is considering proposing legislation that would provide two options for the 700,000 tons of depleted uranium:

- Auction the material as is to utilities or uranium enrichment companies; or
- Re-enrich the material with the U. S. Enrichment Corporation (USEC) and then sell the enriched uranium.

Since the early 1950s, depleted uranium hexafluoride (DUF6) tails have been generated as a byproduct in the process of enriching natural uranium for both civilian and military applications. In 1993, the U.S. government began privatizing uranium enrichment services at USEC in Kentucky—the only operating enrichment facility in the nation.

Potential buyers for the material, that was once considered worthless and an environmental liability but is now in high demand due to tight uranium markets, have already been identified. The Nuclear Energy Institute conducted a 48-hour survey of industry interest and reported that seven of 15 utilities, which operate 61 nuclear reactors, would be interested in purchasing some of DOE's depleted uranium. The Government Accountability Office (GAO), the investigative arm of Congress, also noted "tentative interest" from eight of 10 utilities.

Instead of auctioning the material as is, the federal government could determine that it makes more sense profit-wise for DOE to contract out enrichment of the DUF6 and sell it as enriched uranium. Both federal and state legislators, particularly from states with DOE Environmental Management sites, are engineering legislation and ensuring oversight of these plans because of their potential economic and environmental benefits. Some legislators suggest the money gained from the sale of DOE material should go back into cleanup of the sites in their states that initially manufactured the material and are now undergoing environmental remediation.

Representative Ed Whitfield of Kentucky introduced legislation (HR 4189) in November 2007 that would require DOE to sign a contract with USEC and begin enriching DUF6 within 120 days of the bill's enactment. The profits from the sale of the enriched uranium would go to cleaning up the Paducah and Portsmouth, Ohio sites. Representative Bart Stupak of Michigan, however, noted that HR 4189 would force DOE to bypass its procurement rules, would not give DOE time to adequately audit USEC's actual costs for the project and would not allow DOE to seek a better deal by auctioning the tails to utilities and letting them use their bargaining power with USEC. Stupak therefore suggests including both options (enrich or auction as is) in legislation, and that any contract DOE enters into with USEC would first need to be approved by GAO and Congress.

Whitfield would like to see DOE begin re-enrichment activities in his state as soon as possible. "In addition to the near-term economic value realized," he says, "an extended tails re-enrichment program could continue the operations of the Paducah plant past its potential shutdown in 2012."

Committee Statement, Rep. Stupak
HR 4189 (must input bill number into search box)
Also sourced: "House panel to draft legislation to guide DOE sales of DUF6," Platts NuclearFuel, vol. 33, no. 7 (April 7, 2008): 17-18.

## Minnesota Legislature Considers Abolishing Nuclear Plant Ban

*May 5, 2008*

Concerns about climate change are factoring into state legislative conversations about how to responsibly provide for a growing energy demand. One energy source receiving renewed attention, nuclear, faces some form of restriction in at least 20 states. Since many of these restrictions (e.g., requiring the Public Utility Commission, state voters or the legislature to approve construction of new plants) were enacted decades ago, reactor designs have become safer and more efficient while the need for power sources that do not produce carbon emisions has increased. Some states historically opposed to nuclear power are giving it another look.

Minnesota is the only state that completely prohibits construction of new nuclear power plants. The state has three operating nuclear reactors on two sites, all built in the early 1970s, that provide slightly more than one quarter of the state's electricity. Monticello's plant life was recently extended to 2030, and Prairie Island plans to submit a 20-year license extension for its two reactors this year. Many of the 31 states that host the 104 aging nuclear reactors in operation around the country today are also contemplating whether to renew or replace their electric generating capacity.

The Minnesota Legislature held hearings this session on the role of nuclear power in the state's future energy portfolio, and testimony was presented on new plant designs and safety technologies. House Energy Finance and Policy Division chair Representative Bill Hilty, believes the whole process—from the costs of construction to emissions from uranium drilling for nuclear fuel—needs to be fully vetted before the Legislature makes any decision on the state's moratorium. The Minnesota Legislature is scheduled to adjourn for the year in May, but Hilty plans to hold several legislative discussions on nuclear power in future sessions and expects the Legislative Electric Energy Task Force and various House and Senate committees to do the same in the interim and in years to come.

The Minnesota Legislature considered three bills this year related to nuclear energy. Two (S.F. 2545 and S.F. 2630) sought to abolish the current prohibition on the Public Utilities Commission from issuing certificates of need for new nuclear power plants. The other (S.F. 3209) urged the president and Congress to promote and support the nuclear electric generation industry. All three bills were sent to the Senate Energy, Utilities, Technology and Communications Committee in February and have yet to see further action.

In the past, similar proposals to expand nuclear power in Minnesota were rejected, but lawmakers in the state have seemed more eager in recent years to find compromises between environmentalists' concerns with greenhouse gas emissions and the concerns of those who must maintain the state's electricity supply amid growing demand. Ed Garvey, director of the Minnesota Office of Energy Security, has supported Governor Tim Pawlenty's interest to lift the nuclear ban, and the Minnesota Climate Change Advisory Group also recommended considering adding more nuclear to the energy mix to help meet state carbon reduction goals.

But several legislators are not yet sold on the idea of a nuclear renaissance, and instead support alternative efforts to meet or reduce energy demand, such as investing in renewable resources and encouraging energy conservation and efficiency. Representative Phyllis Kahn has raised questions about the radioactive waste resulting from nuclear energy generation, which remains onsite at reactors across the country while the U.S. Department of Energy (DOE) struggles to build a nuclear waste repository at Yucca Mountain, Nev., over the state's objections. There are also financial concerns related to the significant up-front costs of building a nuclear plant—about $4 billion to $6 billion—which federal subsidies aim to make more palatable to investors.

Interest in most renewables such as sun and wind, however, do not address baseload capacity issues—or the need for energy to be available from a constant source. Most electricity in the country currently comes from sources that do offer baseload capacity, such as coal (50 percent), but that also create carbon emissions. If the goal is to reduce fossil fuel use but maintain a constant source of energy, nuclear is one method that fits the bill. As Richard Reister of the DOE's Nuclear Power 2010 initiative explains: "Baseload is essentially nuclear, hydro or coal. Hydro is tapped out. It's very difficult to build a coal plant now in any of the states because of concerns over carbon emissions. So what you're left with, really, is nuclear."

Most lawmakers around the country are seeking a mix of sources that meet energy needs, reduce carbon emissions and are safe for human health and the environment. The National Conference of State Legislatures hosts an Energy Summit each year to tackle these complex issues and inform legislators of policy options to address them.

News Article *Twin Cities Daily Planet*
Minnesota Legislation: S.F. 2545, S.F. 2630, S.F. 3209

## DOE Announces $15 Million in Grants for Nuclear Research

*May 28, 2008*

The U.S. Department of Energy (DOE) announced a funding opportunity of up to $15 million for universities, national laboratories and industry to advance nuclear technologies and close the nuclear fuel cycle. The grants are part of the domestic side of the Bush administration's Global Nuclear Energy Partnership (GNEP), which aims to expand the use of nuclear power as a clean energy source and find ways to manage the radioactive byproducts of nuclear energy generation with advanced recycling technologies that reduce waste and lesson proliferation concerns.

DOE has provided $328 million in grants for similar purposes since GNEP's inception in February 2006. Universities have received $39 million for research grants and fellowships, upgrades to laboratories and research reactors, and augmentation of faculty in nuclear-related fields.

This round of grants is specifically targeted for R&D of spent fuel separation processes (used to recycle the waste), advanced nuclear fuel development, fast burner reactor technology and the identification of future waste forms.

Interested parties must apply for the grants by May 8, 2008, and may do so at www.grants.gov.

DOE Press Release

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Articles in this newsletter have been researched by NCSL staff. Resources include *E&E News/Greenwire online, Nuclear Waste News, Nuclear Fuel, Platts Nuclear Fuel*, legislative research office contacts and other sources.

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**NCSL Online Resources**

NCSL Nuclear Waste Cleanup Webpage
http://www.ncsl.org/programs/environ/cleanup/cleanup.htm

State Legislation Database on Nuclear Waste Issues
http://www.ncsl.org/programs/environ/nucwaste.cfm

State Legislation Database on Environmental Justice Issues
http://www.ncsl.org/programs/environ/envjustice.cfm