



## Storage of Nuclear Spent Fuel Criticized

A classified report by nuclear experts assembled by the National Academy of Sciences has challenged the decision by federal regulators to allow commercial nuclear facilities to store large quantities of radioactive spent fuel in pools of water.

The report concluded that the government does not fully understand the risks that a terrorist attack could pose to the pools and ought to expedite the removal of the fuel to dry storage casks that are more resilient to attack. The Bush administration has long defended the safety of the pools, and the nuclear industry has warned that moving large amounts of fuel to dry storage would be unnecessary and very expensive.

The report was requested by Congress after the terrorist attacks of Sept. 11, 2001, as homeland security officials sought to understand the potential consequences of a Sept. 11-scale attack on a nuclear facility.

Because the report is classified, its contents were not made public when it was delivered to the Nuclear

Regulatory Commission (NRC) last summer. Even a stripped-down, declassified version has remained under wraps since November because the commission says it contains sensitive information.

However, the commission made excerpts of the report public when Chairman Nils Diaz sent a letter to Congress on March 14 rebutting some of the academy's concerns. His letter also suggested that the academy had largely backed the government's views about the safety of existing fuel storage systems.

E. William Colglazier, executive officer of the academy, said the letter was misleading and warned that the public needs to learn about the report's findings.

"There are substantive disagreements between our committee's views and the NRC," he said in an interview. "If someone only reads the NRC report, they would not get a full picture of what we had to say."

Although the commission said it is keeping the report under wraps for security reasons, some officials who have seen the document suggest

that the NRC is merely suppressing embarrassing criticism.

"At the same time that the NRC is saying that the National Academy's study is classified and not releasable to the public, it has somehow managed to send a detailed rebuttal of the report's conclusions to Congress in unclassified form," said Rep. Edward J. Markey (D-Mass.), who has seen the report.

"I am concerned that the totality of the Commission's actions reflect a systemic effort to withhold important information from . . . the public, rather than a genuine effort to be protective of national security," Markey said in a March 21 letter to the commission's inspector general.

NRC spokesman Eliot Brenner countered that the commission is "a very open agency" and that regulators are working with the academy to make the report public.

"Our core concern is making sure that information that could reasonably be expected to be available to a

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## Storage of Nuclear Spent Fuel Criticized (Continued)

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terrorist is not publicly available," he said. "We are continuing to work with them on finding the right balance."

The report was solicited by Congress to study how best to store spent nuclear fuel -- tons of rods containing radioactive byproducts of nuclear fission reactions are produced each year by the nation's 103 electricity-generating nuclear reactors. Spent fuel rods generate intense heat and dangerous long-term radiation that must be contained.

Most of the spent rods are stored in large swimming-pool-like structures called spent fuel pools, said David Lochbaum, a nuclear safety engineer at the science and advocacy group Union of Concerned Scientists, who has worked at several plants. The pools are about 45 feet deep and 40 feet square and are filled with about 100,000 gallons of circulating water to remove heat and serve as a radiation shield, he said.

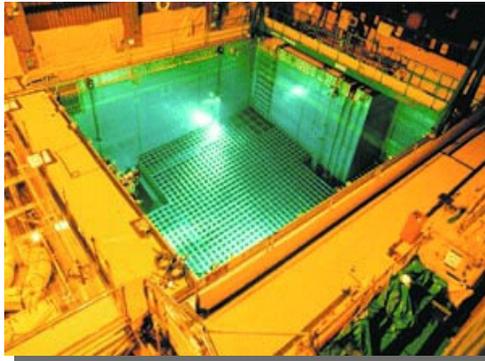
After cooling for about five years, the rods can be moved to dry storage -- heavy casks of lead and steel. But the casks are expensive, and commercial reactors have elected to leave the rods in the pools until the pools fill up. Lochbaum said some pools hold 800 to 1,000 tons of rods. In the event of a terrorist strike, Lochbaum said, the dry casks would be much safer, because explosions could drain the pools and set off fire and radiation hazards.

The nuclear industry wants the fuel moved to a storage site in Nevada, but that project has long been plagued by delays and opposition. Steven Kraft, director of waste management at the Nuclear Energy Institute, an industry group, said studies had shown that the pools are as safe as the dry casks -- the same position adopted by the Nuclear Regulatory Commission.

Kraft said that the risk of catastrophic attacks is minuscule and that modeling analyses have shown that

even plane crashes are unlikely to affect the pools' integrity. And even if they did cause damage, he added, there would not be catastrophic consequences because of safety systems already in place.

"If the pool is safe and the casks are safe and they both meet the requirements, there is no justification for going through what is a huge amount of



*Sent nuclear fuel pool. Source: <http://www.nrc.gov>*

expense and worker exposure" to move the rods to dry storage, he said.

In his letter to Congress, Diaz said the academy's recommendation to move fuel to dry storage was based on "scenarios that were unreasonable."

But Arjun Makhijani, a nuclear engineer with the Institute for Energy and Environmental Research, a nonprofit research and advocacy organization that supports underground dry storage of the rods, said the commission had been lax.

"There is no question that any terrorist who wants to know about spent fuel has plenty of information already," he said of the withheld report. "Publication of a report on security will not help terrorists. The only thing it is hindering is discussion of public safety."

Diaz's letter to Congress shows that the academy recommended that the government conduct additional analyses to evaluate "the vulnerabilities and

consequences" to storage pools of "attacks using large aircraft or large explosives." The academy also called for a review and upgrade of security measures to prevent theft of spent fuel rods by insiders and an assessment of security by "an independent organization."

The commission letter defended measures it has in place and said that "the likelihood an adversary could steal spent fuel . . . is extremely low."

To keep the report secret, the federal agency used a classification called "Safeguards Information" that it applies to data that are unclassified but reveal sensitive details about nuclear facilities and security procedures. Brenner, the spokesman, emphasized that the academy's report and the commission's response had been seen by the Department of Homeland Security and members of Congress charged with oversight. "The full report is there with those with the appropriate clearances," he said.

The academy's Colglazier said the science organization had produced many classified reports but had never encountered such hurdles in creating a public version.

"We don't want to provide information in our report that could be used by terrorists to exploit vulnerabilities," he said. "But we also want the public and decision makers to know what things need to be addressed."

The scientist also rejected Brenner's reassurance that the classified report had been seen by relevant decision makers. Governors of states with nuclear plants need to see the report, he said, and the public had an important role as well.

"The way our political system works, when politicians hear from their constituents, they are motivated to take action that they don't when the public is unaware," he said. *Source: Washington Post*

# Bennett not hot on Yucca now

In a gamble to block a proposed nuclear waste storage site 45 miles from Salt Lake City, Utah Sens. Orrin Hatch and Bob Bennett threw in three years ago with the Bush administration's effort to bury nuclear waste deep inside Nevada's Yucca Mountain.

But now, as Yucca's political and scientific problems mount, Bennett, at least, appears to be hedging his bet.

He indicated in an interview last week that he might entertain the option of leaving the waste at the reactors that produced it - a step away from the White House and toward closing a divide between the senators and other Utah politicians.

Gov. Jon Huntsman Jr. has come out squarely against Yucca and in support of leaving the highly radioactive nuclear material on site at the reactors. Two of the three U.S. House members from Utah have said they oppose Yucca, and Rep. Chris Cannon, who voted to send the waste to Nevada, has changed his stand. And an increasingly vocal cadre of state lawmakers has joined the chorus.

They agree that building Yucca Mountain would not kill the proposal by Private Fuel Storage (PFS), a consortium of electric companies, to "temporarily" store 44,000 tons of spent nuclear rods on Utah's Skull Valley Goshute Indian reservation and would, in the best case scenario, mean thousands of tons of waste would be shipped through the state.

"Now people are starting to focus on the fact that, well wait, Yucca Mountain is also a sorry idea. Why haven't we been thinking of something else?" asked state Rep. Steve Urquhart. The St. George Republican says the "straight to Yucca" strategy is driven more by politics than reality, and he predicts a change.

"On this one, Hatch is the weather vane and if the political winds are changing, he'll turn," Urquhart said. Hatch is up for re-election next year.

The drive toward Yucca Mountain suffered a serious setback last month when it was revealed U.S. Geological Survey scientists may have falsified documents on the suitability of the site. The FBI has launched a criminal investigation, according to The Associated Press.

With Yucca Mountain already well over budget and years behind schedule, opponents hope the latest episode dooms the project. A House Government Reform subcommittee will hold a hearing on Yucca's safety and viability.

Cannon, who voted in 2002 to build Yucca Mountain, now says much has changed and storing the waste at the reactors offers a safe, practical alternative. Continuing the Yucca push could actually make it more likely the fuel would end up in Utah and stay longer, he says.

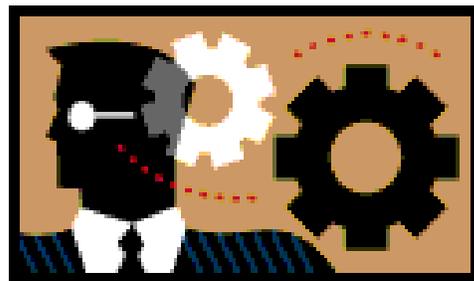
"The more distant [Yucca] appears, the more likely that we will get temporary storage in Utah," he said. "So either we have to have assurances that Yucca is going to work, or we have to be thinking, 'What else are we going to do with it?'"

Bennett and Hatch also voted for Yucca in 2002, based on an assurance from the White House that it would make the PFS site unnecessary. They reiterated their support after another meeting with the White House last month.

"It's what has to be done under the circumstances and we're going to do everything to help them get there," Hatch said. He remains committed to Yucca Mountain, a spokesman says, but Bennett said that he could reconsider.

"My previous support of Yucca has never been based on the science because the science says to me leave it where it is, but the politics take that off the table," Bennett said. "I am perfectly willing to consider other alternatives if they are politically viable."

The politics are prickly. Not only does the nuclear industry and Bush



administration back Yucca, but congressional delegations from Eastern, urban areas that rely on nuclear power support it.

Sen. Pete Domenici, R-N.M., chairman of the Senate Energy Committee and the subcommittee that sets the budget for energy programs, is concerned about the delays and cost of the project, but he remains committed to building the repository and is not considering other options, said his spokeswoman Marnie Funk.

Senate Minority Leader Harry Reid, D-Nev., who has spent years trying to kill Yucca, will introduce legislation this month that would allow the federal government to assume responsibility for the waste and store it in casks near the reactor sites. He was scheduled to meet privately with Huntsman in Salt Lake City and was expected to discuss the issue.

The nuclear industry and companies backing the Private Fuel Storage facility say Reid's idea is flawed and would not solve the storage and security problems many reactors are facing.

Time may be running out to stop the Goshute facility. The Nuclear Regulatory Commission will hold a hearing on Utah's challenge to the PFS license. If the NRC grants the license, the state can challenge it in court. The Interior secretary could also stop the facility by vetoing the lease between PFS and the tribe or preventing a rail line across federal land to the reservation.

*Source: The Salt Lake Tribune*

# Nevada files brief in suit against nuclear waste railroad

Nevada is accusing the Energy Department of failing to complete required environmental studies and usurping jurisdiction of the government's railroad agency in planning to build a rail line to the Yucca Mountain nuclear waste site.

In documents filed in Washington, D.C., the state asks the U.S. Circuit Court of Appeals for the District of Columbia to put the brakes on the Energy Department plan to ship nuclear waste by rail to the southern Nevada site.

There is no evidence the Energy Department consulted the Surface Transportation Board, which oversees the nation's railroads, before pressing forward with the rail plan, according to the brief. It calls jurisdiction "a purely legal issue" that alone should send the process back to the start.

An Energy Department spokeswoman said staff would be reviewing the filing. The department is expected to file opposing briefs in coming weeks.

The court has yet to schedule oral arguments in the lawsuit,

which was filed Sept. 8.

Blocking the railroad is one of



a series of legal maneuvers Nevada is using to try to derail federal plans to bury 77,000 tons of spent nuclear fuel at Yucca Mountain, 90 miles northwest of Las Vegas.

The effort gained momentum when Energy Secretary Samuel Bodman revealed a government worker may have falsified data concerning water infiltration and climate tests at the site.

There currently is no rail line to the site the Bush administration and Congress picked in 2002 to entomb spent nuclear reactor fuel and high-level radioactive waste now stored in 39 states.

The Energy Department announced in April 2004 that it

wants to ship most of the waste by train and said it would build the new rail line from Caliente, a small town 150 miles northeast of Las Vegas, to the Yucca Mountain site. The cost was estimated at \$880 million.

In the lawsuit, the state claims the department violated the National Environmental Policy Act, a federal law that requires environmental studies before federal projects are finalized.

The brief also casts radioactive waste shipments as vulnerable to accident or attack, which will "pose extraordinary hazards to the populations and environment on the way to Yucca."

Nevada officials have long criticized plans for shipping nuclear waste cross-country, through cities like Chicago, St. Louis, Kansas City and Salt Lake City, as dangerously flawed.

But Bob Loux, the top Nevada official fighting the project, said that if the court rules against the Energy Department in the railroad case, Yucca project planners might still opt to ship waste by truck. *Source: Associated Press*

## DOE probes Yucca Emails

WASHINGTON -- Amid calls for an independent probe, the Department of Energy is moving forward with its own investigations to determine whether Yucca Mountain science was compromised by allegations that documents may have been falsified by frustrated scientists.

DOE also plans to arrange an outside review of how it manages

quality assurance, a fundamental part of the nuclear waste project that has been criticized consistently dating back almost 20 years to the early days of the Nevada program.

DOE officials say the evaluations aim to weigh the scientific fallout after disclosure that several scientists involved in climate and water infiltration studies ex-

changed e-mails that discussed making up documentation of data.

The workers, who were assigned by the U.S. Geological Survey, have not been publicly identified. Inspectors general at the Energy Department and the Interior Department are investigating possible misconduct that could result in criminal charges.

## DOE probes Yucca emails (continued)

(Continued from page 4)

E-mail messages and memos made public by a House subcommittee indicate the most provocative messages may have been authored by two or three people. DOE and USGS officials have said copies were sent to others and as many as 10 people may have been involved.

Critics of the Yucca project said they put little faith in the DOE evaluations. They renewed calls for an independent body to examine the program.

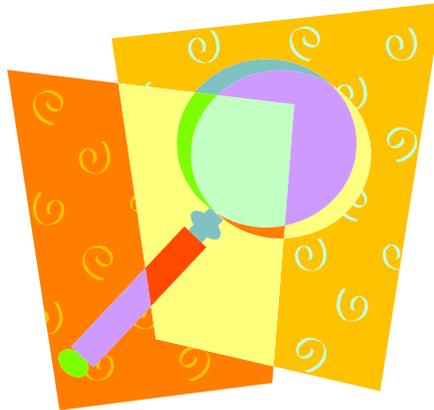
"I do not have much confidence in the DOE investigating themselves," said Rep. Jim Gibbons, R-Nev. "These e-mails were written on the DOE's watch and now that they have become public, the DOE expects Nevadans to believe them and trust them to do a full and thorough investigation that could very well unearth even more impropriety?"

Rep. Jon Porter, R-Nev., said the House Government Reform Committee has the authority to assemble a team of outsiders to study the Yucca program. Porter, who heads one of its subcommittees, said the committee's chairman, Rep. Tom Davis, R-Va., supports the idea.

"Now we're talking about the options," Porter said, including possibilities of requesting a federal agency to perform the study, or a consultant team or university academics. He offered no timeline for such a study.

In the meantime, an investigative work plan was posted to the Yucca Mountain Website, along with a letter from John Arthur, head of the Office of Repository Development in Las Vegas.

Arthur said DOE "will proceed to assess the falsification allegations, the work environment from



which they arose and the potential impacts of the allegations to the Yucca Mountain Project."

The documents were no longer on the Web site the following day. Instead, a message said the posting "was premature since final decisions on our plans for this important issue are still being made."

DOE spokesman Allen Benson said the document was withdrawn because listed deadlines for the investigations were being reworked.

"We're still looking at the timing," Benson said, declining to say whether the probes would take longer than announced.

The work plan posted online set a May 31 deadline for a technical investigation and a Sept. 2 dead-

line for a quality assurance management study.

Yucca employees said reviews are under way in Las Vegas involving federal workers and employees of Bechtel SAIC Corp., the Yucca Mountain management firm.

The investigation work plan that was posted online said they are seeking to identify technical reports, software scientific models and analyses that may be called into question, and if any affected the Energy Department's justification for recommending the Yucca site and pursuing a license to build a repository there.

Beyond that, DOE said it plans to seek three to five individuals to conduct a broader management review of Yucca quality assurance, a program that is supposed to ensure quality controls for the repository.

The study is DOE's latest stab at reforming Yucca quality assurance, which has been criticized over the years by congressional auditors, technical reviewers and the Nuclear Regulatory Commission.

In September 1988, the Government Accountability Office issued one of its first Yucca Mountain audits. It said that quality assurance was substandard.

The study singled out U.S. Geological Survey personnel, quoting a 1986 stop work order that said USGS technical staff "have not achieved a full appreciation of the importance of QA on this program. This is clearly a USGS management problem."

Source: Las Vegas Review Journal

## What is Spent Nuclear Fuel and High-Level Waste?

Spent nuclear fuel and high-level radioactive waste are materials from nuclear power plants and government defense programs. These materials contain highly radioactive elements, such as cesium, strontium, technetium, and neptunium.

Some of these elements will remain radioactive for a few years, while others will be radioactive for millions of years.

When spent fuel is first removed from a reactor, it is placed in a special pool of water contained in a steel-lined concrete basin. The water cools the spent fuel and protects workers and the public from radiation. After it has cooled considerably, some commercial power plants and government facilities move the fuel to dry-storage containers made of steel and/or concrete to shield radiation.

The containers are either placed upright on concrete pads, or stored horizontally in metal canisters in concrete bunkers.

In the United States today, over 161 million people reside within 75 miles of temporarily stored nuclear waste.

Source: <http://www.ocrwm.doe.gov/factsheets/>

## Lander County Oversight Program

This newsletter is a publication of the Lander County Repository Planning and Oversight Program. Lander County is one of ten affected units of local government involved in the proposed Yucca Mountain Repository. Funding provided to Lander County is paid by users of electricity generated by nuclear power plants. Under a general contract with nuclear generating utilities, the federal government collects a fee of one mill (one-tenth of a cent) per kilowatt-hour from utility companies for nuclear generated electricity. The money goes into the Nuclear Waste Fund which is used to fund all program related activities.

For more information on Lander County's program contact Deborah Teske at the Community Development Department (775) 635-2860 or Joy Brandt at (775) 964-2447 in Austin, Nevada. Additional information on the repository program can be obtained from the U.S. Department of Energy. Yucca Mountain, Site Characterization Project Office at (702) 794-1444 or contact them at [www.ymp.gov](http://www.ymp.gov), or the Nevada Agency for Nuclear Project, Nuclear Waste Project Office, Capital Complex, Carson City, Nevada 89570, (775) 687-3744 or visit them at their web site at <http://www.state.nv.us/nucwaste>, or visit our website at <http://www.landercountnwop.com>.

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