TEMPORARY FIX

Critics say nuclear plan shows leadership failure



Oconee Nuclear Station is among the country's 104 nuclear reactors temporarily storing thousands of metric tons of spent fuel while the national quest for a permanent solution stalls. KEN OSBURN/STAFF

By Eric Connor
Staff writer
econnor@greenvilleonline.com

Nearly four decades later, a permanent solution to America's commercial nuclear waste problem remains so distant on the political horizon that politicians, bureaucrats and scientists are now staking out new political territory.

It's one that is neither here nor there.

This new realm, recently building momentum, is a limbo where commercial reactors will be relieved of nuclear waste bound not for a permanent grave but for yet another temporary home — "interim storage" — until some decision somewhere at some time can ultimately be made.

The pivot to the concept of temporary storage of the nation's stockpile of commercial spent nuclear fuel at reactors like Oconee Nuclear Station — a topic broached by U.S. senators recently at the behest of an expert panel — is one that the industry and policy makers themselves say reflects a failure of the government.

The burden of the government making amends for decades of broken promises has fallen to a collection of federal judges who find every opportunity to point scathingly to a failure of leadership, both in finding a final solution and ensuring the public's safety from radiation that will take thousands of years to die.

For once, money hasn't been an obstacle.

Billions of dollars, set aside for permanent disposal, sit largely untouched — but at the same time shrewdly accounted for by the government.

Consumers of nuclear power in South Carolina and elsewhere, through charges tacked onto their monthly power bills, are writing the checks yet to be cashed.

Meanwhile, the political stalemate that has vexed the country for decades stands still today in the shadow of an abandoned mountain in the Mohave Desert.

Billions unspent

The charge is but a fraction of a percent — .001 cent per kilowatt-hour produced — but each year ratepayers who use nuclear energy contribute $750 million into the Nuclear Waste Fund.

About $27 billion sits unspent.

"Rate-payers may not realize they are overpaying," said David Wright, a member

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BROKEN PROMISES

For more than 40 years, nuclear waste has been piling up around the country despite promises by the government to find a final resting place for the radioactive material. Learn more about the billions of dollars that have been spent and the risks of not devising a disposal plan with this story at GreenvilleOnline.com/broken-promises.

SAFETY AT OCONEE

Duke Energy's Sandra Magee talks about the storage of spent fuel and about safety at Oconee Nuclear Station.

NUKE

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of the South Carolina Public Service Commission and president of the National Association of Regulatory Utility Commissioners.

For thousands in the Upstate who rely on Duke Energy's three reactors on the shores of Lake Keowee to power their homes and businesses, that equates to about $5.85 per customer per year, said Sandra Magee, a Duke spokeswoman.

The waste fund was set up by Congress in 1982 to pay for permanent burial of commercial spent fuel into a scientifically approved geologic site underground.

That site was to be Yucca Mountain in the remote Nevada desert, where $12 billion was spent drilling underground to create a permanent disposal site for the country's thousands of metric tons of waste.

The nuclear industry has produced about 65,000 metric tons since its inception, and 2,000 more per year must be stored in deep pools of water and moved above ground to steel containers reinforced with concrete — all at the sites of the country's 104 nuclear reactors.

Funding for the project was cut off three years ago, however, at the order of President Barack Obama and the insistence of powerful Senate Majority Leader Harry Reid, D-Nevada.

At the same time, the Blue Ribbon Commission on America's Nuclear Future was created and tasked with finding a solution, though not with rendering a judgment on the suitability of any particular permanent site, including Yucca Mountain.

The government's contract with energy companies was clear: By 1998 it would transport spent fuel stored at commercial reactors to a permanent disposal site.

Instead, utilities were left to sue for the cost to store fuel at their reactors, and the judicial system has awarded them more than $1 billion paid by taxpayers.

Judicial criticism

Following Yucca's death by lack of funding, a group of utilities sued again, this time demanding that the government explain why it still charges energy customers a fee with no plan to use it in sight.

This month, a U.S. District of Columbia Court of Appeals panel ruled that the energy secretary must explain within six months his reasoning for continuing to charge the fee.

Each year, the secretary is charged with examining the fee to evaluate whether its collection will provide sufficient revenues to offset program costs.

In 2010, Energy Secretary Steven Chu determined that the fee — which had collected more than $24 billion at that point through investment income and interest — was justified, prompting the National Association of Regulatory Utility Commissioners to challenge the decision in the appeals court.

By the end of this year, investment income and interest will grow the fund to more than $28 billion — money originally meant to be separate from the federal budget but since used as an accounting tool to weigh against the budget's deficit.

"Aye, there's the rub," Senior Circuit Judge Laurence Silberman wrote in the panel's withering opinion that orders further department review.

In its arguments, the Department of Energy said that laws require only that the secretary review the fee and that he has complete discretion in how to identify and evaluate costs.

All along, the Department of Energy has assumed the eventual existence of two permanent repositories as it considers the funding need, the appeals court wrote.

The secretary, the court wrote, "may, like an ostrich, put his head in the sand; so long as he is unaware of any information that questions the existing fee structure, he is not obliged to propose an adjustment. That interpretation is farfetched, almost absurd."

In the lawsuit, utilities argued that the secretary, following the abandonment of the Yucca Mountain project, failed to examine or even mention the expected costs of disposal and compare them with expected revenues.

The secretary's determination is invalid, the utilities argue, because no future program for permanent disposal exists and the Yucca Mountain project shouldn't be used as a proxy to estimate future costs.

The Department of Energy submitted expected disposal costs at $97 billion. However, the court wrote that the department's calculation "appears to be off by $30 billion."

The court ruled that the energy department "failed to perform a valid evaluation."

The judges stopped short of ordering a suspension of the fee but made note of the department's "disposition to delay" and retained jurisdiction to ensure a timely response.

New plan

In discussions of how to dispose of nuclear waste, terms such as "temporary" and "interim" are defined in timelines extending more than 100 years.

In 1987, Congress dismissed two other options being studied to designate Yucca Mountain as the only site the Department of

Energy could consider for a permanent repository.

Nevada at the time lacked political clout, and the decision has long been described by the state as the "screw Nevada bill."

Twenty five years later, the government is back where it started.

The Blue Ribbon Commission on America's Nuclear Future, in its long-anticipated report, said recently that just selecting a new site could take as long as 20 years.

A new political order could revive the Yucca project. Congress never passed a law dismissing it. Currently, South Carolina's political leaders have staked their ground by calling on the government to revive Yucca Mountain.

Whether the government decides to "retain, discard (or) put into deep freeze" the project, it must move forward in the meantime to alleviate the danger of spent fuel stockpiling at the nation's reactors, said Dr. Per Peterson, a professor and chair of Nuclear Engineering at the University of California-Berkeley and member of the blue ribbon group.

In a recent Senate hearing on nuclear waste disposal, lawmakers pivoted to the idea of establishing "interim" storage of spent fuel at "consolidated" sites.

"Whether or not you favor Yucca Mountain, we need to move ahead with consolidation sites, with finding a second repository, and we can argue about Yucca Mountain along the way," said Sen. Lamar Alexander, R-Tennessee, a member of the Senate Environment and Public Works Committee. "Sometimes we do better step-by-step than we do comprehensively."

How those sites would be selected is perhaps, the lawmakers said, the most-daunting political obstacle, but they point to a facility in New Mexico — whose creation involved state and local leaders — that will be used to store waste from the nation's nuclear weapons production.

Local and state governments, unlike in the Yucca Mountain selection process and in South Carolina's troubled history as once the nation's nuclear waste dumping ground, must buy in to the idea.

The commission suggested a "consent-based" approach that would allow local and state governments to formulate safety standards, offer research-based incentives and, in an ideal scenario, have states bidding against one another to accept a disposal project.

A new federal organization would be formed to manage the waste disposal program, and "stranded" spent fuel being stored at 10 decommissioned reactors would be first to move to interim storage.

In its early laws setting the rules for waste disposal, Congress specifically mandated that temporary facilities couldn't be developed until permanent disposal was assured.

The commission suggests that law must first be changed along with a mandate that the waste fund be structured so that it is accessible and no longer competing for federal funding.

In appropriations for the 2013 budget, Sen. Diane Feinstein, D-Calif., and others including Alexander, have pushed a plan to provide money for the Department of Energy to create a pilot program for one or more interim-storage sites.

However, nuclear watchdog groups point to the past as a warning for moving forward with interim storage: Environmental standards must be set, with states on board, before locations can be considered.

"Congress must ensure we not repeat the mistakes of the past," said Geoffrey Fettus, senior project attorney for the Natural Resources Defense Council.

Fettus recently argued a case in which the District of Columbia appeals court ruled that federal regulators failed to explain well enough its determination that spent fuel can be stored safely over a longer period of time than originally intended.

Two years ago, the Nuclear Regulatory Commission issued a "waste confidence decision" declaring that storage of spent fuel at reactors is safe despite the fact that the country has no place to store it permanently.

The fuel rods must cool in large pools near the reactor for several years before they can be moved into "dry cask" containers.

Instead, the regulatory commission relies on the notion that a permanent site will be operating by the time it is necessary.

The court, though, wrote that the NRC apparently doesn't have a long-term plan — and the government's failure means the fuel will stay at the reactors.

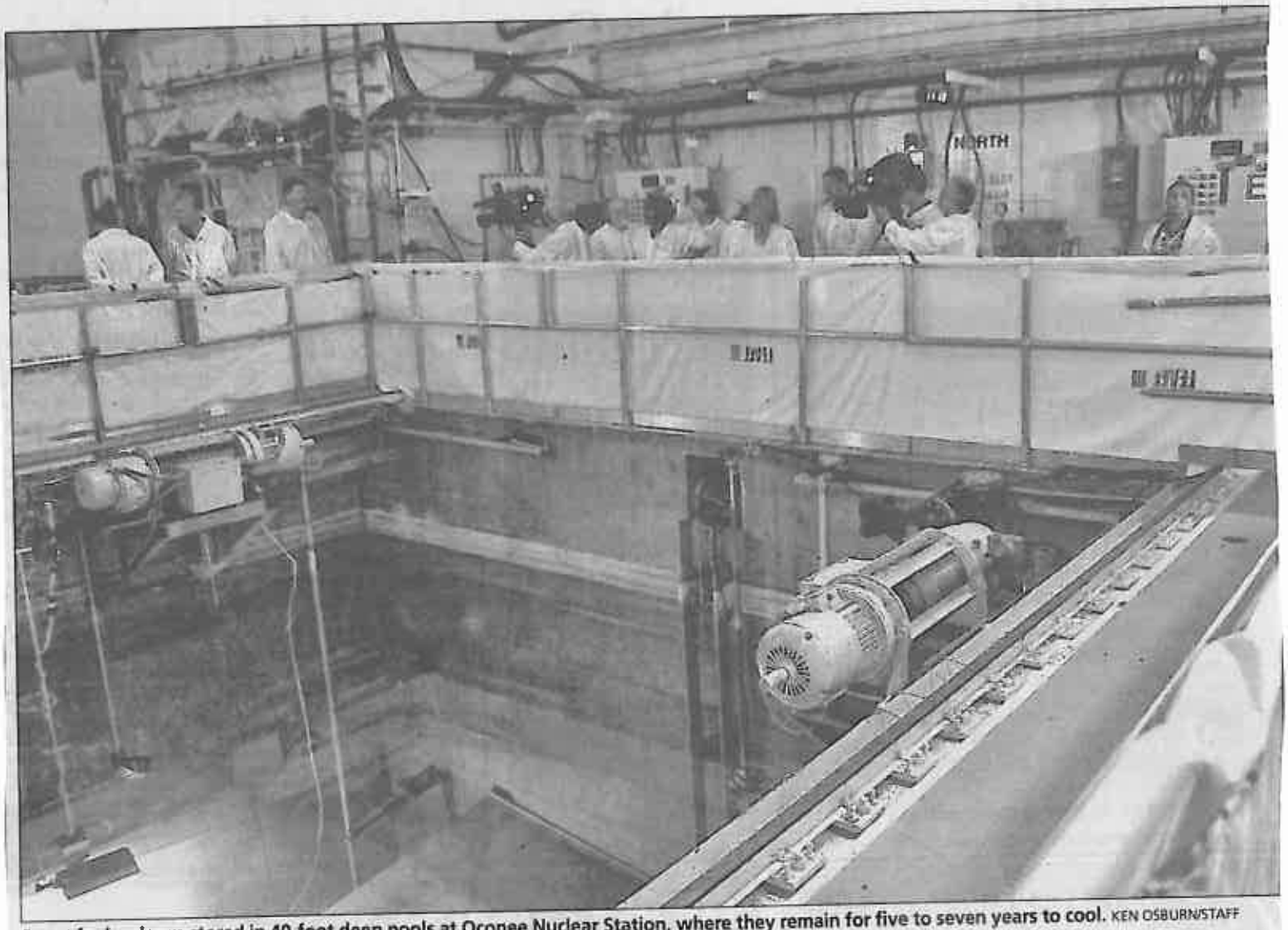
In particular, the court wrote, federal regulators failed to assess the risks of storage pools leaking or malfunctioning — whether through error, attack or natural disaster — in the future.

The regulatory commission relied on an analysis of groundwater contamination that occurred during past leaks to determine that leaks would result in "negligible near-term health impact."

The analysis wasn't specific to one site but instead a generic study of "environmental risks across the board at nuclear plants."

The court ruled that regulators didn't analyze past leaks "in a manner that would allow the commission to rule out the possibility that those leaks were only harmless because of site-specific factors or even sheer luck."

The court didn't set a deadline for the regulatory commission to complete its review.



Spent fuel rods are stored in 40-foot deep pools at Oconee Nuclear Station, where they remain for five to seven years to cool. KEN OSBURN/STAFF



Staff in the Oconee Nuclear control center keep watch on the plant's vital signs. MYKAL MCELDOWNEY/STAFF