

# NUCLEAR FUEL MANAGEMENT AND DISPOSAL ACT

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HEARING  
BEFORE THE  
COMMITTEE ON  
ENERGY AND NATURAL RESOURCES  
UNITED STATES SENATE  
ONE HUNDRED NINTH CONGRESS  
SECOND SESSION

ON

**S. 2589**

TO ENHANCE THE MANAGEMENT AND DISPOSAL OF SPENT NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE, TO ENSURE PROTECTION OF PUBLIC HEALTH AND SAFETY, TO ENSURE THE TERRITORIAL INTEGRITY AND SECURITY OF THE REPOSITORY AT YUCCA MOUNTAIN, AND FOR OTHER PURPOSES

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AUGUST 3, 2006



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## **NUCLEAR FUEL MANAGEMENT AND DISPOSAL ACT**

**THURSDAY, AUGUST 3, 2006**

U.S. SENATE,  
COMMITTEE ON ENERGY AND NATURAL RESOURCES,  
*Washington, DC.*

The committee met, pursuant to notice, at 10:15 a.m., in room SD-628, Dirksen Senate Office Building, Hon. Pete V. Domenici, chairman, presiding.

### **OPENING STATEMENT OF HON. PETE V. DOMENICI, U.S. SENATOR FROM NEW MEXICO**

The CHAIRMAN. Now, with the committee's permission, we are going to proceed with the hearing that we have scheduled. We have two distinguished Senators from Wyoming before us.

Senators, even though I know you are both busy, I have some opening remarks that I have not been able to give on this subject for a long time, to put in perspective where we are, and I would like to give those and then yield. If Senator Bingaman wants to follow me, fine, and if not, we'll proceed to the two distinguished visitors. Good morning to both of you, Senators.

The purpose of this hearing is to receive testimony on S. 2589, the Nuclear Fuel Management and Disposal Act. The administration proposed this legislation, which I introduced with Chairman Inhofe, who has the jurisdiction over many portions of it in his committee.

This legislation provides a number of critical authorities needed to make Yucca Mountain operational: land and water transfer; withdrawal and transfer; waste confidence; Nuclear Waste Fund; environmental and regulatory requirements; raising the cap from 70,000 metric tons; and taking the Nuclear Waste Fund off-budget.

Two weeks ago the Department of Energy released a new timetable for submitting a license application to the Nuclear Regulatory Commission, NRC, for the Yucca Mountain project by June 2008. DOE anticipates opening Yucca Mountain in March 2017, to begin acceptance of spent fuel and high level defense waste. With this, the Department established a schedule by which regulators, consumers, and Congress can monitor the progress for the transportation and the storage of commercial waste, spent fuel, and defense-related fuel.

Yucca Mountain is the cornerstone of a comprehensive spent fuel management strategy for this country, and let me be clear: We need Yucca Mountain, whatever its shortcomings may be. I want

to fix this program as best I can and try to make it work, with the help of the committee and the Congress.

However, experience has shown that the schedule for Yucca Mountain is a very slippery thing. My concern is that the new timetable does not include any margin for any further project delays by DOE, its contractors, or legal action by the State of Nevada, all of which would cause the DOE to miss these new deadlines. Nor does the schedule establish a total time frame by which all commercial fuel will be moved to the repository.

Meanwhile, the Government's liability is piling up. The Nation's electric ratepayers are paying twice—for Yucca, and for storing the waste at the reactor sites. From my estimates, if Yucca Mountain were to open by the goal of December 2017—and I invite the Department or anyone else to show me that what I am just going to say is not correct—ratepayers will be paying until late in the century to keep spent fuel onsite, not because Yucca will not be open but because under current plans this is the fastest that waste can be moved.

DOE plans to send 3,000 metric tons per year to Yucca Mountain, those are the plans, and that is all that the Department thinks they can move there per year, 3,000 metric tons. At that pace, it will be 2040 before DOE transports all the spent fuel that exists today to Yucca Mountain. In the meantime, we will continue to generate additional spent fuel that is destined for Yucca.

So I would like to repeat, for those who don't think we need to address temporary storage, if everything goes perfectly, it will take over 30 years—longer than I have been in the Senate, and that's pretty long—to eliminate the existing backlog of spent fuel. In light of that, it only makes sense to look for additional ways for the Government to meet its obligations.

To address that part of the puzzle, the Senate Appropriations Committee approved the fiscal year 2007 Energy and Water Appropriations bill with a new approach to nuclear waste consolidation. That proposal offers utility ratepayers relief and fulfills the Federal Government's obligation to take spent fuel while the Government works off the enormous backlog.

Furthermore, I have done the math to understand whether Yucca Mountain can address all of the spent fuel needs. As proposed by the administration's bill, we must lift the 70,000 metric ton cap on Yucca Mountain because by 2010 there will already be 63,000 metric tons of spent fuel at commercial sites. We will have in excess of 2,500 tons of spent fuel from our national defense and research efforts, and we will have in excess of 10,000 metric tons awaiting processing and disposal at Hanford and Savannah and Idaho.

Unless we take action to raise the cap, it will be 7 years before Yucca Mountain is projected to be open. We must raise the authorized limit, as DOE has proposed. However, even with that increase in the limit to 120,000 metric tons, by the year 2050 DOE will have shipped enough fuel to Yucca Mountain to fill it up, leaving an additional 40,000 metric tons at reactor sites. This is without any increase in the size of the current nuclear fleet.

The Energy Information Agency estimates that by 2030 our Nation will need an additional 347 gigawatts of electricity brought on line to just keep up with demand. What are we going to build? Nat-

ural gas is expensive, stocks are hard to come by, even though we are looking. The United States is the Saudi Arabia of coal, but until proven coal technology comes online that demonstrates sequestration of carbon emissions, nuclear is the clean air solution. We must and we should build new nuclear powerplants.

So I have reached a few conclusions: One, Yucca must be opened. Two, even if Yucca is opened, significant quantities of spent fuel will remain at reactor sites for many decades, thus the need for practical interim solutions. And, third, continuing to increase the authorized limit at Yucca Mountain, while a necessary step, is not a complete solution.

That's where GNEP comes in. That is recycling. This year the Bush administration took what I believe is the correct path. It proposed to close the nuclear fuel cycle and recycle spent fuel, leaving a reduced amount of material that must be disposed of in Yucca. The fact is that unless we recycle, Yucca can't contain everything.

We must use that time, the time we have before Yucca Mountain opens, to take serious looks and take serious opportunities that are before us to use the terrific new technologies that can reduce the volume and toxicity of spent fuel. It is no great shock that I urge everyone to support the GNEP, the Global National Energy Partnership, and it should be included as part of our nuclear waste solution.

The three pieces to the puzzle that we have discussed are Yucca Mountain, GNEP, and interim storage, and those will establish a program that will provide confidence that our nuclear Nation's waste will be managed, and we ought to proceed on all three fronts with dispatch. We can solve the problem, and I hope we can solve it together. I look forward to a frank discussion with witnesses today, of this difficult and complicated subject, and to move ahead as rapidly as we can from that point.

Senator Bingaman.

**STATEMENT OF HON. JEFF BINGAMAN, U.S. SENATOR  
FROM NEW MEXICO**

Senator BINGAMAN. Thank you very much for having the hearing, Mr. Chairman. Let me just mention two or three things.

First, I'm interested in finding out from the administration why they believe we need to move with this legislation at this point, this legislation that they have presented. As I understand it, the Department of Energy has said it's not going to be ready to file a license application for another 2 years, and there's nothing that I have detected in this bill that would change that or speed it up. I would be anxious to get clarification on that.

I also think we need clarification as to what the different actions are that are authorized by the language of this bill. I know that there is authorization for "infrastructure activities" and that's not defined. I gather that means the billion dollar, 300-mile-long railroad that is contemplated, and also the interim storage facilities, but I think if so, we need to understand that. I think we need to explicitly authorize items of that size, if that's what the administration intends for us to do with this bill.

I think the main thrust of the bill as I read it, is to limit the authority of the Nuclear Regulatory Commission, the Department

of Transportation, and the State of Nevada, to oversee the repository. I'm not sure how that is going to ensure the safety of the repository or the public confidence in the repository. I'm sure that our witnesses and Senators Reid and Ensign may have thoughts about that.

Finally, I would just say you made reference to the legislation that you and Senator Reid have developed as part of the Energy and Water Appropriation bill. I think that is obviously far-reaching, and I hope that we can have a hearing on that legislation before we are faced with consideration of it on the Senate floor. I think this committee should be able to understand that legislation, and obviously that's not the primary thrust or focus of this hearing, but it should be the primary focus of a future hearing.

Thank you very much.

The CHAIRMAN. Thank you, Senator Bingaman.

All right, Senators, we're going to proceed with you in order of seniority, obviously. Senator Reid, we're glad to have you here. We are always considering Yucca matters, and we very infrequently get to hear from you about your views, so it's good to hear from you today.

**STATEMENT OF HON. HARRY REID, U.S. SENATOR  
FROM NEVADA**

Senator REID. Mr. Chairman, I'm very impressed with the attendance at this hearing. This is very, very unusual, at least as far as I've been able to determine with other committees, so this is great.

Everyone knows that the proposed Yucca Mountain nuclear waste dump can be described in many different ways, but it is certainly on a life support system. Some have said it's a dying beast, and it should die. It's a scientifically unsound project that would needlessly threaten the public health and safety of all Americans.

Even the administration knows this is flawed and dangerous. We can see this in the legislation that they have submitted to us. It tells you everything the administration knows that's wrong with Yucca. They have sent us this legislation to change the rules, to break the law and prevent States from protecting their citizens—not Nevada, States.

If Yucca were scientifically sound, if it generally was a safe place to store nuclear waste, the administration would not need to gut the laws that regulate hazardous waste handling and transportation, clean air, water rights, public land laws, and environmental policy. If Yucca were scientifically sound, the administration would not need to preempt States' rights. If Yucca were scientifically sound, if it was genuinely safe, we wouldn't have this bill and we wouldn't be here today.

So, to be honest, the administration is trying to prevent the States from protecting themselves and their citizens—I repeat, not Nevada only, the States. It's important to remember that this proposal does not affect or preempt Nevada only, but your States as well, and not just in the area of transportation.

For instance, the administration also wants to preempt the Resource Conservation and Recovery Act for any Department of Energy facility where waste is transported or stored in Nuclear Regu-



latory Commission-licensed casks, for example, the Waste Isolation Pilot Project in New Mexico. If Yucca were scientifically sound and safe, the DOE would not need to remove control of the project from agencies with expertise: the Department of Transportation, the Environmental Protection Agency, the Department of Fish and Wildlife, Bureau of Land Management, and the Department of Defense.

Do members of this committee know that this bill subordinates the authority of the Department of Defense to the Department of Energy? No longer does DOD get to determine when, where, and how our flights are conducted in Nellis AFB. Think about that. The number one Air Force fighter training facility in the world, without question, and in the future they'll need to get permission from the DOE as to whether those airplanes can take off from Nellis and where they go. If this legislation passes, it would be a tremendous detriment to our military. We can't sacrifice the Nation's security for this shortsighted proposal.

What may even be worse is that Congress is being asked to approve the gutting of all these laws and authorities for a project with no details, no assurances of its safety, no assurance of its viability, and no assurance of its long-term integrity. In fact, the administration has not even done the impact analysis of this proposed project as required by the National Environmental Protection Act.

We have been trying and trying to get this analysis and clarification of what the administration is or is not doing, but we have been given the runaround. I don't think it exists. Maybe that's partly because DOE doesn't have a final design for the facility. That's right. DOE has announced that it is completely redesigning the surface facilities, transportation methods, and storage requirements. What are the details? Who knows? We don't know. No one knows.

The truth is, DOE has never said what they're going to be. They've never said whether the Department truly intends to increase the amount of waste that can be stored at the mountain. If they do, DOE will have to redesign the facility itself. They're just saying, "Trust us. Don't ask questions. Trust us."

Trust DOE? The Department has had more than 20 years of quality assurance and control problems on this project alone, with contractors who have the same problems, both of which have been ignored, but they let them continue. Trust DOE, the agency that does not care that data on water infiltration was falsified? Falsified. Trust DOE? I don't think so.

Let me just address that incident. DOE likes to make a lot of noise about the fact that the Department of Justice did not bring criminal charges against the employees who falsified the data. Avoiding a criminal indictment is not an exoneration. It just means that DOE didn't push the Justice Department into doing something. They lied. They acknowledged they falsified scientific records, and it's in writing.

To meet the high burden of a criminal case—I don't know what the prosecutors thought, but they weren't pushed by DOE—prosecutors would have had to prove the employees made these false statements, and I think they could have done that. They decided not to do it. The employees knew that the statements were false. We know that. They bragged about it. They bragged about lying and falsifying documents. We have those.

So these employees averted Federal felony charges. Does that mean the data is accurate? Of course not. They admitted lying, falsifying the documents. False data is false data. Worst of all, DOE has no intention of redoing the data. The threat of criminal prosecution has passed, but the threat to public health remains. It's not surprising.

Ward Sproat, who oversees the Yucca Mountain project, admitted in testimony before the House just last month that DOE does not have the expertise to design and construct Yucca Mountain. They must rely on their contractor, Bechtel.

Bechtel, to whom DOE has given bonuses for substandard and incomplete work. Bechtel, the contractor that was under a stop work order because it ignored these problems. Bechtel, the same company that ignored problems with the Big Dig, an action that led to the continuing safety problems and, tragically, the death of a motorist from a falling three-ton piece of metal from the roof of the Big Dig.

The Governor of Massachusetts said the design of the Big Dig was incompetent. The designer? Bechtel. So now we're having DOE rely on them for their expertise? This is really a metaphor for this entire project.

Mr. Chairman, you know, we have had conversations, I'm not opposed to nuclear power. I'm opposed to nuclear power unless we find something to do with the waste. I believe we can handle this. I have faith in American ingenuity. America has the best minds in the world, and I believe if we truly focus on solving the real problems of spent nuclear fuel, we could solve our problems.

So we should stop wasting time and money researching and designing Yucca Mountain. After more than 20 years, we know that it won't work, so we really should start trying to solve the problem of nuclear waste.

What are we to do with the waste in the interim? Leave it onsite in dry cask storage containers, where it is safely and securely stored now, would be for 100 years, and where the nuclear industry estimates it will continue to be safely stored for the next 100 years. According to the Nuclear Energy Institute—not my best friend—dry cask storage is here to stay. And according to the Nuclear Regulatory Commission, it's safe, they say, for up to 200 years, and onsite storage saves money.

DOE's last estimate for Yucca Mountain, very low-balled at about \$60 billion—\$60 billion. Other outside experts say it will never be done for less than \$100 billion. Dry cask storage, a few billion, way less than \$5 billion at most, and that's the Cadillac. NEI has shown us, with or without Yucca Mountain, onsite storage will be widespread. It is right now. Calvert Cliffs, right out here in Baltimore, they have been doing it for years.

So we should embrace this option, and search for other alternatives, and save the ratepayers and the Government tens of billions of dollars. We should stop wasting our time and money on Yucca Mountain, and on an administration proposal that even Mr. Sproat himself said they don't need right now. We have too much.

So I challenge all my colleagues to look at this. Let's go with dry cask storage containment. Let's forget about this boondoggle. That's really what it is. Let's take the focus away from this dead project

and find real solutions, and secure our energy future by doing something reasonable with nuclear power.

The CHAIRMAN. Thank you very much, Senator.

Now we're going to proceed to Senator Ensign. Thank you for being so patient, Senator.

**STATEMENT OF HON. JOHN ENSIGN, U.S. SENATOR  
FROM NEVADA**

Senator ENSIGN. Mr. Chairman, just to save the committee some time, if I may ask that my full statement be made part of the record, and I'll try to summarize this as briefly and as succinctly as possible.

The CHAIRMAN. Absolutely. It's done.

Senator ENSIGN. Mr. Chairman, you mentioned in your testimony the fact that interim storage is necessary because there's going to be storage all over the country, simply because you can't bring the waste to Yucca Mountain fast enough.

In the past the Energy Secretary, right after 9/11, talked about the security. We need one site. That was a big issue. We need one site. It's obvious we're not going to have one site. We will never have one site, so that security argument I think is a bogus argument.

There are many problems with this legislation. I think my testimony, written testimony, and Senator Reid's testimony talks about a lot of the environmental laws and some of the problems we have, but I want to look at this thing as maybe a little bigger picture.

The new proposal, first of all, because we realize that Yucca Mountain doesn't store enough waste, the old number was somewhere around \$60 billion. That number, by the way, is a 2000 number. With all the problems of Yucca Mountain, we know that that number has to be a lot higher just today, without expanding, dramatically expanding, what is going to happen. We don't know what the cost of this proposal is going to be, and certainly the way any other government projects have gone, the costs continue to skyrocket.

Is it something that America can afford? Is it something nuclear power can afford, to make it viable for the future? I'm a believer in nuclear power. I think it's important that we have nuclear power for the future energy needs of the United States.

I think Yucca Mountain makes nuclear power less financially viable because it's going to have to come out of the taxpayers. The Nuclear Waste Trust Fund will in no way pay for Yucca Mountain, especially with a new design. There is not enough money in the Nuclear Waste Trust Fund, or not enough money into the future with the Nuclear Waste Trust Fund.

Mr. Chairman, you mentioned recycling technology, and I really believe that that's a big part of the answer for the United States. What Senator Reid mentioned about leaving the stuff where it is, dry cask storage technology works. It solves a lot of the other problems that we have as far as transportation, the controversy.

And recycling technology I believe is a big part of the answer, because it's going to decrease the amount of the waste, it's going to decrease the toxicity. It decreases the half-lives of the waste, and obviously it produces a little bit of energy along with it. Now,

there's still some technology that has to be worked out there, but that I believe is where we should be putting our money and our efforts, is into developing the recycling technology.

Senator Reid mentioned something very important that this legislation talks about, and actually it's with Yucca Mountain or even with the expanded part of it, and that is the ranges for the Nellis Air Force Base, the most valuable ranges in the United States. You talk to the Air Force, the most valuable ranges in the United States are the Nellis ranges. No question. The ranges above Nevada, they mimic the Middle East. They are the most wide open. The rules, what they can do in the flying up there is incredibly important to our national security.

The legislation that we have before us would make the DOD, would make the Air Force second fiddle to the Department of Energy, and I think that that is a very dangerous precedent to start, and not knowing the full implications of what that would bring is very dangerous for the national security of the United States.

So, Mr. Chairman, nuclear waste, everybody agrees that the big problem with nuclear power is nuclear waste, and what are we going to do? How are we going to solve this? It is mostly a perception problem, because everybody wants to get it out of their State, knowing that they aren't getting it out of their State.

Well, actually they don't know that. That is part of the problem. Just because there's Yucca Mountain does not mean that people get nuclear waste, all of the waste, out of their State. They get some of the waste out of their State. If they understood that they're only getting some of it out of their State, I think that there would be much more public acceptance to onsite dry cask storage.

We have 100 to 200 years to work out the technical problems of recycling, of doing some of the other things. Building a boondoggle in the Nevada desert I believe is wrongheaded, it's the wrong financial policy, and it's the wrong nuclear waste policy for the United States. We really should be putting our efforts into modern, forward thinking so that we can make nuclear power viable for the future of the United States.

We see the problems that we have with fossil fuels. You know, we're doing some things about that. But the bottom line is, nuclear has to be an important part of the future, and for it to be an important part of the future, I think that we have to solve this in a way that we can afford, in a way that allays some of the people's safety concerns that we have around the country, and this legislation is certainly the wrongheaded approach.

So I know Senator Reid and I both appreciate you allowing us to be here and share some of our thoughts with you, and we look forward to working with you on some of these proposals for the future.

[The prepared statement of Senator Ensign follows:]

PREPARED STATEMENT OF HON. JOHN ENSIGN, U.S. SENATOR FROM NEVADA

I want to thank the Chair, the Ranking, and other members of the Committee for the opportunity to present testimony on S. 2589, the Nuclear Fuel Management and Disposal Act.

I find the stated purpose of the bill to be outrageous—considering its content. The stated purpose of this bill is to enhance the management and disposal of nuclear fuel and high level radioactive waste, to ensure protection of public health and safe-

ty, and to ensure the territorial integrity and security of the repository at Yucca Mountain. This bill fails on all three fronts.

First, this bill doesn't enhance the management and disposal of nuclear waste—it simply expedites it. The bill tries to legislate around the scientific and safety flaws of Yucca Mountain because supporters of the project know that it will never be opened if current laws and regulations remain in place. Congress has heard repeatedly from experts who acknowledge that the Yucca Mountain nuclear waste repository will never be built because of the numerous and insurmountable scientific, safety, and technical problems with the site. In addition, nearly three decades of poor management and oversight have demonstrated that the vast body of scientific and technical work done by the Department of Energy (DOE) and its contractors, is incomplete or moot due to constantly changing repository designs and plans which do not meet scientific standards.

This legislation does nothing to correct those problems; it merely attempts to circumvent them. In fact, the bill changes the funding mechanism to remove Congressional control and eliminates much needed oversight of how taxpayer dollars are being spent on this project. It also scales back NRC licensing requirements and eliminates regulations with the idea of getting nuclear waste to Yucca Mountain as fast as possible, regardless of the potential consequences. With all the flaws apparent in the project to date, I believe it is disingenuous to claim that management and disposal will be enhanced by cutting corners and taking a “make it work” approach to the nations' most hazardous waste.

Second, this bill doesn't ensure protection of public health and safety—it erodes it. It undercuts safeguards for both the transportation and storage of nuclear waste, leaving the public more vulnerable than ever. It removes all Department of Transportation (DOT), Nuclear Regulatory Commission (NRC), Surface Transportation Board, and state authority over nuclear waste transport so that DOE has sole control over a nuclear transportation scheme of unprecedented magnitude. Shipments of waste would be exempt from present and future DOT safe-routing regulations, from DOT safety regulations, and from NRC safeguards regulations.

Furthermore, the bill would exempt material that is transported or stored in NRC-licensed containers or located at Yucca Mountain from federal, state, and local environmental requirements under the Resource Conservation and Recovery Act (RCRA). This would eliminate the requirement that hazardous non-nuclear contaminants mixed with the nuclear waste be identified and treated according to RCRA. Clearly this evasion of RCRA could serve as a precedent that would impact future transuranic waste shipments to the WIPP facility, as well as DOE environmental clean-up and legacy management sites across our nation.

In February of this year, the National Academy of Sciences (NAS) released its report on the dangers associated with transporting nuclear waste and advocated that states and local governments have a central role in any successful waste transportation program. This legislation directly contradicts that recommendation. It abolishes state, local, and tribal government transportation authority and circumvents involvement from other federal agencies, such as NRC, DOT and the Department of Homeland Security, which is currently called for under existing law. According to DOE, 45 states, 700 counties, and 50 Native American tribes will be affected by the transport of nuclear waste to Yucca Mountain. Common sense would dictate that giving away all transportation authority to DOE, rather than the agencies and communities directly affected, does not protect the almost 11 million people within a half mile of the transportation route.

Third, this bill does not ensure the territorial integrity and security of Yucca Mountain. Instead, it jeopardizes national security by withdrawing land currently controlled by the Air Force and the Nevada Test Site. One of the premier test and training sites in the country, Nellis Air Force Base has a varied mission portfolio that is met only by the size and diversity of its ranges and capabilities. Similarly, the Nevada Test Site is the only location that offers safe, secure, and remote testing for defense systems and high-hazard operations. Not only does this legislation call for a land withdrawal from these two sites, it also hands DOE the rights to the airspace, giving a non-defense agency the right to dictate what missions and operations can be conducted. This is not a zero-sum game. Withdrawing land to ensure the proposed repository at Yucca Mountain meets NRC licensing guidelines would erode the integrity of Nellis and the Test Site. It is not prudent to risk our national security by limiting the ability of these unique assets for a project like Yucca Mountain, which remains riddled with problems and questions and is doomed for failure.

We need to find another solution to our nuclear waste problem and this legislation is not it. Instead, we need to amend the Nuclear Waste Policy Act of 1982 to require the title to all spent nuclear fuel, stored in dry casks, to be passed to the DOE upon on-site transfer from storage pools to casks. Senator Reid and I introduced legisla-

tion to allow the DOE to assume liability of the waste onsite before it is transferred to Yucca Mountain. Conveying the title means that the DOE will have full responsibility for the possession, stewardship, maintenance, and monitoring of all spent nuclear fuel. The DOE would also be made responsible for various maintenance and oversight that would be associated with implementation.

The fact remains that if Yucca Mountain was a workable, safe, and scientifically sound plan, it would not require legislation to move it forward. This bill only makes Yucca seem workable on paper by rolling back the many laws and regulations designed to protect the public health and safety of all Americans.

The CHAIRMAN. Thank you very much, Senators. I might ask, there are a number of Senators here, and I know you're in a hurry, but—

Senator REID. If you have any questions, Senator Ensign will answer them.

The CHAIRMAN. All right, he's got your proxy.

Any questions of either Senator?

Senator CRAIG. Mr. Chairman?

The CHAIRMAN. Yes, Senator Craig?

Senator CRAIG. Mr. Chairman, I thank you both for being here, and I appreciate the passion that you have always approached this issue on. I also understand that all politics is local, and this is important politics for your State. I don't dispute that.

I have to agree with you, John, perception is everything. There is a perception in Nevada, probably not different than perceptions in other States as it relates to waste. That's part of what drives this issue.

Senator Reid, my only observation, when one relates those who constructed the Big Dig and those who are operatives at the site at Yucca Mountain today, there are two other fine facilities in your State that that same company built. One is called Hoover Dam, and the other was the Las Vegas Airport, McCarran. I don't think in any way anybody implies that those are less than safe.

Design is critical. Those who build it need to have good designs. That's what all of this is about at this moment. And your due diligence, I suspect, if this ever happens, will cause it to be a safe place that we can hold up to the citizens of the State of Nevada not to impair their health. Without question, that has to be a primary concern of all of us. To date, our history of storing nuclear waste is excellent. I see no reason why it would change.

Thank you, gentlemen, very much.

Senator REID. My only response, I say to my friend from Idaho, Hoover Dam was built with a number of companies, of course, 75 years ago, and I don't think—we love McCarran Field, a nice airport—but the Big Dig and Yucca Mountain are a little more difficult to construct than some runways on the flat desert.

Senator CRAIG. I'm only referencing the comparatives that you gave. I found them to be interesting.

The CHAIRMAN. Senators, could I just ask, in my statement, because I have a follow-up hearing soon on GNEP, that is, recycling, I only touched on it as kind of the third part of this. You know, I mentioned onsite storing, I mentioned Yucca, which you disagree on, but I also mentioned then GNEP.

I have not asked heretofore, and perhaps I should wait, but would it be fair to assume, first, Senator Reid, that you support a

major American effort to move toward recycling with new and innovative technology?

Senator REID. Senator Ensign and I have talked about that. I have spoken to you about it. That's something I'm happy to take a look at, but as far as signing off on it, I'm not going to do that.

The CHAIRMAN. Oh, I understand.

Senator REID. But sure, I'm interested. I'm interested in anything to make the production of nuclear power safe.

The CHAIRMAN. Senator Ensign.

Senator ENSIGN. I have actually, since my very first time looking at running for office, have been exploring and meeting with scientists from around the country on the whole idea of recycling. You know, there is obviously the reprocessing that some of the other countries do, but there is modern recycling that can be a lot better into the future because it reduces the toxicity and half-lives dramatically without producing, for one thing, weapons-grade plutonium, which has always been a problem with reprocessing.

So I'm actually a big supporter in pursuing that research, because I think that if that research can be perfected to a commercial level, that it will be a bit part of our answer on reducing the length of time you need to store the waste, the amount of waste that will be there, and the cost of the waste as well.

Senator REID. And we may, Mr. Chairman, look back as history books are written, as having made a very, very big mistake in closing the facility at Clinch River in Tennessee. That was there, it was ongoing, and the reasons as I understand historically for stopping it was, they were afraid that the plutonium would get out into other people's hands. Well, certainly if we couldn't guard against that, we're not very good at guarding against anything.

The CHAIRMAN. But the next step down the line is going to be, Clinch River reactor is going to be in the engineering picture when it comes to recycling. That's the point. Thank you very much, Senator Reid.

Senator CANTWELL. Mr. Chairman? Mr. Chairman, if I could just thank the Nevada Senators for testifying, and certainly for bringing up the specific information about under the current proposal how much waste is left at various sites, I think for the Hanford site under the Yucca Mountain proposal it was somewhere between 13 and 18 percent would be moved. The rest, under that current proposal, would stay. So I think you're right in making sure that people are aware of what the proposal actually means going forward and what the alternatives are. So I thank them for their statements this morning.

Senator REID. Mr. Chairman, in just brief response, one of the things that you and I have had a very difficult time doing, but we have done it, is look at the waste removal that is absolutely necessary at Hanford. It takes a huge chunk of money every year out of our energy and water bill, and I think this year we met the expectations of the Washington delegation, that's the House and Senate members. I have been there. We have created some significant problems around the country with nuclear waste, and Washington is a prime example of that. Hopefully we are addressing it appropriately with the money we are doing for removal.

The CHAIRMAN. Anything else?

[No response.]

The CHAIRMAN. Thank you, Senators.

We're going to proceed now with our next group of witnesses here. Two roll call votes are going to come up very shortly, but let's get started here.

Let's take panel number one: Hon. Edward Sproat, III, Director of the Office of Civilian Radioactive Waste Management, Department of Energy; Martin Virgilio, Deputy Executive Director for Materials, Research, State and Compliance Programs, U.S. Nuclear Regulatory Commission; J. Barnie Beasley, Southern Nuclear Company, Birmingham; Robert Loux, executive director, Agency for Nuclear Projects, from the Governor's office in Nevada; Geoff Fettus, Esq., Natural Resource Defense Council, thank you for coming. David Wright, commissioner, South Carolina Public Service Commission.

That's it. We're going to start at this side and move this way. You can lead off for us, please, sir.

**STATEMENT OF EDWARD F. SPROAT, III, DIRECTOR FOR THE  
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT,  
DEPARTMENT OF ENERGY**

Mr. SPROAT. Good morning, Mr. Chairman, Senator Bingaman, and other members of the committee. My name is Edward Sproat. I'm the Director of the Office of Civilian Radioactive Waste Management at DOE, and I'm in my seventh week on the job. I'd like to thank you for the opportunity to appear this morning in front of the committee. On behalf of the President and the Secretary, I'd like to thank Senator Domenici and Senator Inhofe for taking up this critical issue and introducing the legislation, S. 2589, to consider these important issues associated with Yucca Mountain.

I would ask that my written testimony be submitted for the record, and I would just like to make a few summary comments, if I could.

Two weeks ago I announced the best achievable schedule for the Yucca Mountain project, the two key milestones being the submittal of a license application to the USNRC by June 30, 2008, and based on that milestone, the best achievable opening of the repository in March 2017. There has been a lot of discussion among people all over about the reality or the achievability of that schedule.

I want to make it very clear I did not say that was the most probable schedule, I said it was the best achievable schedule. And I want to make it very clear, as I did when I made that announcement, that the probability of making that schedule without this legislation is zero. That's how important this legislation is to making that schedule happen.

There are several key provisions in this legislation that the administration has proposed. I would just like to summarize very quickly because I know there's a lot of misunderstanding around them and what's being asked for.

The first issue is around the Waste Fund itself, and we believe we need stability of funding to support the cash flows for the design and the construction of the Yucca Mountain project. By giving us access to the receipts into that Nuclear Waste Fund on an an-



nual basis, that will certainly help us and go a long way in providing that stability.

I want to make it very clear, our proposal does not remove congressional oversight or appropriations from those annual decisions to fund the Yucca Mountain project. The congressional appropriations are still a part of the project, a part of the process, even with this legislation. If we don't get this legislation and access to the Waste Fund, we won't have the cash flows needed on an annual basis to construct the project to the schedule that I have proposed.

The second issue is around land withdrawal in the State of Nevada. The proposal removes about 147,000 acres around the Yucca Mountain project from public use, and gives the Secretary of Energy the authority to deem the appropriate use of that land. If the Secretary decides he still wants to allow grazing, he can.

The issue was raised a couple times about the impact on the Air Force. I want to make it very clear the amount of land in the Nellis Air Force range that's being withdrawn under this proposal is less than 1 percent of the total area of the Nellis Air Force range, and the no-fly zone that would be established by this is 4 miles in radius, a very, very small issue. And from our discussions with the Air Force, they don't have a problem and don't see an operational impact by this withdrawal on their operations.

Without this, if we don't get this land withdrawal, I can't demonstrate to the NRC that we have permanent control of the repository area, which is a requirement to get the operating license for Yucca Mountain. So basically, if I don't get this land withdrawal, I can't get a license to operate Yucca Mountain. It's that simple.

The third issue is about removing the 70,000 metric ton limit on the mountain. That limit was established by the Nuclear Waste Policy Act as an administrative limit. When the Government performed its environmental impact statement looking at the Yucca Mountain project, it examined a 120,000 metric ton impact for that, so we've already examined what would happen if we expanded the limit.

What we're asking for in this legislation is the ability to analyze the mountain scientifically, present to the NRC what we believe is a licensable upper limit for capacity of Yucca Mountain, and allow the NRC to make that determination. Without getting this 70,000 metric ton limit lifted, we will need a second repository in this country, and the Nuclear Waste Policy Act requires the Department to present a recommendation to the Congress between 2007 and 2010 on the need for that second repository. If we don't lift this limit and allow the NRC to decide the technical license limit for the repository, I will give Congress a report while I'm in this position that says we need a second repository in this country and need to start that process right away.

The fourth issue I would just like to summarize is about water, and this is obviously a major issue to all States out in the West. What we're asking for is for the Congress to declare the Yucca Mountain project to be in the public interest. We are not asking to bypass the Nevada water rights granting process. What we're asking to do is to supersede the Nevada legislative law that's currently in place, that declares the Yucca Mountain project not in the public interest, and therefore the State will not grant a water withdrawal

right to the Department of Energy. And without that, we have no water to either operate or construct Yucca Mountain.

The fifth area is waste confidence, which we've already talked about earlier today, and the importance of establishing the waste confidence for the Nuclear Regulatory Commission to allow the licensing of new plants and the extension of licenses for existing plants.

The sixth and final area that covers a broad range of issues is clarification of Federal authority and duplicative regulatory review processes, and what we're trying to do is provide needed clarification of Federal authority over some issues that are currently subject to State review and approval: air quality, transportation, the Resource Conservation and Recovery Act, and infrastructure improvement. I'll be glad to talk about those in more detail as needed to satisfy the committee.

In summary, the President, the Secretary and I firmly believe that this legislation is critical to the Yucca Mountain moving forward, and moving forward with new nuclear generation capacity, and I respectfully request the Congress to pass this legislation. Thank you.

[The prepared statement of Mr. Sproat follows:]

PREPARED STATEMENT OF EDWARD F. SPROAT, III, DIRECTOR FOR THE OFFICE OF  
CIVILIAN RADIOACTIVE WASTE MANAGEMENT, DEPARTMENT OF ENERGY

Mr. Chairman and Members of the Committee, thank you for the opportunity to appear before you today to discuss S. 2589 entitled the "Nuclear Fuel Management and Disposal Act." Enactment of this bill would significantly enhance the Nation's ability to manage and dispose of spent nuclear fuel and high-level radioactive waste. I thank the Chairman and Senator Inhofe for taking up the critical issue and introducing the legislation.

Over the last 50 years, our country has benefited greatly from nuclear energy and the power of the atom. We need to ensure a strong and diversified energy mix to fuel our Nation's economy, and nuclear power is an important component of that mix. Currently more than 50,000 metric tons of spent nuclear fuel is located at more than 100 above-ground sites in 39 states, and every year, reactors in the United States produce an additional approximately 2,000 metric tons of spent fuel. In order to ensure the future viability of our nuclear generating capacity, we need a safe, permanent, geologic repository for spent nuclear fuel at Yucca Mountain.

Recently the Department announced its plans to submit a License Application for the repository to the Nuclear Regulatory Commission (NRC) by June 30, 2008, and to initiate repository operations in 2017. This opening date of 2017 is a "best-achievable schedule" and is predicated upon enactment of the pending legislation. This proposed legislation addresses many of the uncertainties that are currently beyond the control of the Department that have the potential to significantly delay the opening date for the repository, and I would like to briefly summarize the bill's provisions for the Committee.

First, the most important factor in moving the Yucca Mountain Project forward is the ability of the Department to have access to the Nuclear Waste Fund to support the cash flows needed to implement the Project. By making a technical budgetary scoring change, the proposed legislation would correct a structural budget problem that currently prevents use of the Fund as it was intended. This change would allow the Fund to be used to provide consistent and sufficient funding for the construction and operations of the repository. Funding for the Program would still have to be requested by the President and Congressional appropriations from the Fund would still be required.

Second, to meet NRC licensing requirements it will also be necessary for Congress to approve the permanent withdrawal of the lands needed for the operational area of the repository. The bill would withdraw permanently from public use approximately 147,000 acres of land in Nye County, Nevada. The Department is confident that the permanent withdrawal of land would meet the NRC licensing requirement for the Yucca Mountain repository and would help assure protection of public health and the environment.

Third, to promote efficient management and disposal of the current and projected future inventories of commercial spent nuclear fuel located at reactors throughout the United States, the proposed legislation would eliminate the current statutory 70,000 metric ton cap on disposal capacity at Yucca Mountain and allow for maximum use of the mountain's true technical capacity. By eliminating an artificial statutory limit and allowing NRC to evaluate the actual capacity at Yucca Mountain, this provision would help provide for safe isolation of the Nation's entire commercial spent nuclear fuel inventory from existing reactors, including life extensions, and may postpone the need for a second repository elsewhere until the next century.

In addition the proposed legislation includes a number of provisions that would promote prompt consideration of issues associated with the Yucca Mountain repository or would address other matters that have the potential to cause delays in moving forward with the Yucca Mountain Project.

First, the proposed legislation contains provisions that would provide for a more streamlined NRC licensing process by amending the licensing process in several respects. In particular, it would make clear that an application for construction authorization need not include information on surface facilities other than those facilities necessary for initial operations. The bill would also establish an expedited one-year schedule and a simplified, informal process for use by the NRC to consider the license amendment for the Department to be able to receive and possess nuclear materials as well as applications for other future license amendment actions. The bill would also direct that the NRC, consistent with other provisions under the Nuclear Waste Policy Act of 1982, need not consider in its environmental review any actions taken outside of the geologic repository operations area; this will help focus the licensing process.

Second, the proposed legislation would permit early initiation of infrastructure and pre-construction activities at the Yucca Mountain site for utility, communications, and safety upgrades, and the construction of a rail line to connect the Yucca Mountain site with the national rail network. Construction of repository surface and sub-surface nuclear facilities would still require a construction authorization from the NRC.

Third, the proposed legislation includes additional provisions that would simplify the regulatory framework for the repository. In particular, the legislation would designate the Environmental Protection Agency as the appropriate agency to issue, administer, and enforce any air quality permits required in connection with the Yucca Mountain repository. Material owned, transported and stored in NRC-licensed containers and NRC-licensed materials at Yucca Mountain would also be exempt from Federal, State, and local environmental requirements under the Resource Conservation and Recovery Act.

Fourth, the proposed legislation would address the use of water needed to carry out the authorized functions under the Nuclear Waste Policy Act of 1982. This legislation would allow the Department to be treated like a private business in requesting water access, resulting in a non-discriminatory treatment of the Department. The State of Nevada would still review and administer water allocation to the Department under this provision.

Fifth, the proposed legislation would address transportation and ensure the expedited movement of shipments to Yucca Mountain. In this regard, the legislation would provide the flexibility for the DOE to regulate the transport of spent nuclear fuel and high-level radioactive waste to the repository in the same manner that we currently move nuclear weapons. The Department has been transporting such nuclear materials safely for many years. In addressing this issue, we are not proposing to change in any way our route planning activities with State, Tribal and local authorities or how we work with them on emergency planning, training and education. This provision would not affect our longstanding commitment to transporting nuclear material in a manner that meets or exceeds NRC and Department of Transportation requirements for transportation of comparable material. Likewise, it would not affect our longstanding practice of working with State, Tribal and local governments, transportation service providers, and other Federal agencies to utilize their resources and expertise to the maximum extent practicable.

Finally, the proposed legislation would promote the licensing of new nuclear facilities by addressing the need for a regulatory determination of waste confidence by the NRC in connection with proceedings for those new nuclear facilities. This provision directs the Commission to deem that sufficient capacity will be available to dispose of spent nuclear fuel in considering whether to permit the construction and operation of a nuclear reactor or a related facility.

## CONCLUSION

Nuclear power has been demonstrated to be a safe, reliable, and efficient source of power. Enactment of the proposed legislation is necessary to allow the Yucca Mountain Project to move forward and to advance the Nation's energy independence, energy security, and national security objectives. Mr. Chairman, I look forward to working with you and the Members of this Committee on this legislation to facilitate the construction and operation of the repository and ensuring the continued development of safe, clean, and efficient nuclear power in this country. I would be pleased to answer any questions at this time.

The CHAIRMAN. Thank you very much.  
Mr. Virgilio.

**STATEMENT OF MARTIN J. VIRGILIO, DEPUTY EXECUTIVE DIRECTOR FOR MATERIALS, RESEARCH, STATE AND COMPLIANCE PROGRAMS, OFFICE OF THE EXECUTIVE DIRECTOR FOR OPERATIONS, U.S. NUCLEAR REGULATORY COMMISSION**

Mr. VIRGILIO. Good morning. My name is Martin Virgilio. I'm the Deputy Executive Director for Operations at the Nuclear Regulatory Commission, with responsibility for this project.

Mr. Chairman, members of the committee, it's a pleasure to appear here before you today to talk about the Nuclear Fuel Management and Disposal Act. I'd like to briefly summarize my testimony and request that the record reflect a full statement that I presented to you.

It's important to make clear at the outset that because of NRC's licensing and adjudicatory responsibilities, the NRC is not taking a position on most of the provisions of the legislation, which appear aimed at facilitating the eventual operation of the proposed repository at Yucca Mountain. However, some of these provisions, if enacted, could adversely impact NRC's ability to meet its statutory obligations. These provisions are included in a letter we sent to the committee on June 30 of this year, and the points that we're going to make here today are points we made in that letter.

Our experience in dealing with applications for major nuclear projects such as this make us keenly aware of the level of effort that's required to conduct a thorough licensing review and meet all our statutory obligations to protect the public health and safety, promote common defense and security. Our main concern here is that NRC be given sufficient time and adequate resources to conduct a comprehensive review of the DOE's proposal.

Accordingly, we are concerned with section 4(b) because it appears to give the NRC insufficient time in order to conduct a review of the application to license. Section 4(b) imposes a 1-year limit, with the possibility of a 6-month extension, on the NRC's licensing decision. This deadline does not appear achievable to us.

NRC must conduct a thorough technical, environmental, and legal review, and this is likely going to take us more than a year. NRC would urge that the time for deciding on the application to receive and possess waste be increased to 2 years after the docking of the application, with the possibility of an extension for 6 months.

We appreciate the opportunity to appear before you today, and the Commission looks forward to continuing to work with this com-

mittee on the proposed legislation. We welcome your questions and comments. Thank you.

[The prepared statement of Mr. Virgilio follows:]

PREPARED STATEMENT OF MARTIN J. VIRGILIO, DEPUTY EXECUTIVE DIRECTOR FOR MATERIALS, RESEARCH, STATE AND COMPLIANCE PROGRAMS, OFFICE OF THE EXECUTIVE DIRECTOR FOR OPERATIONS, U.S. NUCLEAR REGULATORY COMMISSION

#### INTRODUCTION

Mr. Chairman and Members of the Committee, it is a pleasure to appear before you today to discuss S. 2589, the Nuclear Fuel Management and Disposal Act, which has several provisions that affect the Nuclear Regulatory Commission (NRC).

It is important to make clear at the outset that, because of the NRC's licensing and adjudicatory role in the national repository program, the NRC is not taking a position on most of the provisions in the legislation, which appear to be aimed at facilitating eventual operation of the proposed repository at Yucca Mountain.

However, some of those provisions, if enacted, could adversely impact the NRC's ability to meet its statutory obligations with respect to radioactive high-level waste. The Commission offers the following comments on provisions in the bill that would affect the timing of the Commission's review of a Department of Energy (DOE) application for a license to receive and store waste at the proposed Yucca Mountain high-level waste repository. These provisions are the subject of a letter we sent the Committee on June 30, 2006, and the points we are going to make here today are the points that we made in that letter.

#### TIME NEEDED FOR ADEQUATE REVIEW

The Commission fully understands the importance of addressing the storage and disposal of high-level radioactive waste in a manner that is both safe and timely. The Commission has a record of moving responsibly and promptly to meet its obligations under the Nuclear Waste Policy Act. We continue our preparations for conducting an independent safety review of a Yucca Mountain application. We are confident that we will be ready to receive an application that DOE now says it will submit to us in 2008. We are also confident that we will reach a decision on the application within the time constraints set forth in the Nuclear Waste Policy Act assuming DOE submits a high-quality license application.

At the same time, our long experience in dealing with applications for major nuclear projects has made us keenly aware of the level of effort required to conduct a thorough licensing review that meets our statutory obligations to protect public health and safety, and to promote the common defense and security. Our main concern here is that the NRC be given sufficient time to conduct a comprehensive review of DOE's applications.

Accordingly, we are concerned with Section 4(b) because it appears to give the NRC insufficient time to review an application to license receipt and possession of waste at the proposed repository. Section 4(b) imposes a 1-year limit (with the possibility of a six-month extension) on the NRC's licensing decision. This deadline does not appear achievable to us for at least three reasons.

First, the NRC staffs technical, environmental, and legal reviews are likely to take more than a year, particularly because the staff is almost certain to ask questions about the application, and to ask for additional information in support of the application. Even the staffs reactor renewal reviews, which are widely recognized as efficient, have required about two years for each application (22-30 months, depending upon whether a hearing is requested and granted), and yet those reviews focus on a relatively narrow range of issues at facilities we have regulated for several decades.

Second, even the informal adjudicatory proceeding called for in the bill would contain certain necessary processes that cannot be carried out quickly. For example, the bill provides for limited discovery; add to this the Commission's own default proceedings, which, though less formal than trial-type proceedings, nonetheless call for written testimony, allow for questioning by the presiding officer, and allow for appeal of the presiding officer's decision to the Commission. The NRC cannot complete, in one year, both the staff's safety review and the adjudicatory proceeding.

Third, another provision in Section 4 might increase the scope of the licensing decision, and thus the time needed to make the decision: Section 4(a) of the bill provides that an application for construction authorization "need not contain information on surface facilities other than surface facilities necessary for initial operation of the repository." This provision might be read simply to place certain surface facili-

ties outside the NRC's jurisdiction, in which case the provision would reduce the time licensing might take; on the other hand, the provision might be read to provide for staged consideration of surface facilities. Under this latter interpretation, the NRC would review certain facilities as part of its decision on construction authorization, but review others during the later receipt and possession phase, with the result that Section 4(a) would increase the scope of the receipt and possession review, and yet Section 4(b) would decrease the time allowed for that review. The intent of this provision needs to be clarified. Section 4(b) also should be revised to make clear whether the use of informal proceedings in hearings is intended to apply to the multiple amendments to the license to receive and possess that are envisioned with a phased approach for the potential repository.

For these reasons, the NRC would urge that the time for deciding on the application to receive and possess waste be increased to two years after the docketing of the application, with the possibility of an extension of six months.

We appreciate the opportunity to appear before you today, and the Commission looks forward to continuing to work with the Committee on this proposed legislation. We welcome your comments and questions.

The CHAIRMAN. Thank you very much.  
Mr. Wright.

**STATEMENT OF DAVID A. WRIGHT, COMMISSIONER, SOUTH CAROLINA PUBLIC SERVICE COMMISSION, ON BEHALF OF THE NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS**

Mr. WRIGHT. Good morning, Mr. Chairman and committee members. My name is David Wright, and I am an elected commissioner of the South Carolina Public Service Commission.

I also serve on the Subcommittee on Nuclear Issues and Waste Disposal of the Electric Committee of the National Association of Regulatory Utility Commissioners, most often referred to as NARUC. I'm testifying today on behalf of that organization. On behalf of NARUC and my commission, I very much appreciate the opportunity to appear before you this morning. In fact, I flew all night from our NARUC meeting in San Francisco just so I could be here this morning.

Mr. Chairman, I want to thank you for your work on this issue. Our questions are not meant to be construed as opposition, but instead as an effort to gain more insight into the details of the interim storage proposal. We generally support the provisions found in S. 2589, and we want to be involved and work with you on this issue throughout the legislative process.

The issues that you are addressing in this hearing are very important to NARUC's membership and to my State, and I'm grateful to have this opportunity to present our views concerning the disposition of spent nuclear fuel at nuclear powerplant sites that is intended for ultimate disposal at the Yucca Mountain geologic repository. I would like to summarize my testimony and have the full statement entered into the record.

As I stated earlier, NARUC just concluded a meeting in San Francisco yesterday, at which the Board of Directors adopted a resolution addressing interim storage. I ask permission today that it also be made part of the record of this hearing, and I brought a copy with me.\*

Now, Mr. Chairman, if you will let me, I would like to summarize what we support in the nuclear waste program. First, we urge

\*The resolution has been retained in committee files.

reform of the Nuclear Waste Fund so collected fees are available for their intended purpose, as proposed in S. 2589. Second, DOE needs to press on with licensing the Yucca Mountain repository. Third, we support central interim storage, away from reactor sites, and that does not interfere with developing the repository and meets a cost/benefit test. Fourth, we support research and further study of all aspects of advanced reprocessing as proposed in the GNEP initiative. Fifth, we support infusing a sense of urgency in spent fuel repository development, as the other provisions of S. 2589 support.

And, to be emphatic, let me summarize what we oppose. We oppose continued diversion of the Nuclear Waste Fund fee payments. Second, we oppose having DOE take title to spent fuel to be retained at reactor storage sites. Third, we oppose the use of the Nuclear Waste Fund for interim storage, certainly not so long as appropriations for interim storage means less appropriations for the repository. And, last, we oppose putting as many as 31 States through a concurrent site search for interim storage before the cost/benefits of the proposed consolidation and preparation facilities have been determined.

Mr. Chairman, thank you for the opportunity to appear before you today and testify. This concludes my testimony.

[The prepared statement of Mr. Wright follows:]

PREPARED STATEMENT OF DAVID A. WRIGHT, COMMISSIONER, SOUTH CAROLINA PUBLIC SERVICE COMMISSION, ON BEHALF OF THE NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS

Good Morning Mr. Chairman, Ranking Member Bingaman, and Members of the Committee.

My name is David Wright. I am an elected Commissioner of the South Carolina Public Service Commission. I also serve on the Subcommittee on Nuclear Issues and Waste Disposal of the Electricity Committee of the National Association of Regulatory Utility Commissioners (NARUC). That Subcommittee focuses directly on the issues that are the subject of today's hearing; I am testifying today on behalf of NARUC. In addition, my testimony reflects the views of the South Carolina Public Service Commission. On behalf of those two organizations, I greatly appreciate the opportunity to appear before you this morning. The issues that you are addressing in this hearing are very important to NARUC's membership and my State, and I am grateful to have this opportunity to present our point of view concerning the disposition of spent nuclear fuel currently stored at nuclear power plant sites that is intended for ultimate disposal at the Yucca Mountain geologic repository.

I would like to summarize my testimony and have my full statement entered into the record.

NARUC is a quasi-governmental, non-profit organization founded in 1889. Its membership includes the State public utility commissions serving all States and territories. NARUC's mission is to serve the public interest by improving the quality and effectiveness of public utility regulation. NARUC's members regulate the retail rates and services of electric, gas, water, and telephone utilities. We are obligated under the laws of our respective States to ensure the establishment and maintenance of such utility services as may be required by the public convenience and necessity and to ensure that such services are provided under rates and subject to terms and conditions of service that are just, reasonable, and non-discriminatory.

NARUC's goals in the nuclear waste area are well known and have been stated before this and other Congressional committees on a number of prior occasions. NARUC believes that the federal government needs to meet its obligation under the Nuclear Waste Policy Act of 1982, as amended, to accept spent nuclear fuel from utilities and other nuclear generators in a timely manner. NARUC further believes that the nation's ratepayers have upheld their end of the bargain struck in the Nuclear Waste Policy Act by providing, either directly or through income generated on prior payments, over \$25 billion for use in constructing a nuclear waste repository. Finally, NARUC believes that the Nuclear Waste Fund should only be employed for

its intended purpose and that the monies in the Nuclear Waste Fund should be utilized, along with appropriations from the Department of Defense budget, for the sole purpose of supporting the opening of the Yucca Mountain facility in a timely fashion. The basic principles underlying NARUC's approach to the nuclear waste issue provide a solid foundation for future policy decisions concerning the nuclear waste program.

Two years ago, the repository program seemed to be very close to having the repository license application completed for submittal to the Nuclear Regulatory Commission during 2004, but was further delayed due to the need for the Environmental Protection Agency to revise the radiation standard to be used in the license review. In addition, there were some difficulties between DOE and the NRC in meeting the documentation certification requirements of the Licensing Support Network (LSN) that many of us outside the government did not fully understand. And there was the revelation that there may have been some records falsification by some employees of the United States Geologic Survey who had worked on the project. Since then, EPA has issued their proposed revised radiation standard and has concluded the public comment period. We don't know the status of the LSN documentation but the USGS and DOE records investigations seemed to be concluded, with the program scientific work reaffirmed.

NARUC's primary concern with the civilian radioactive waste management program is for Congress to reform the way the Nuclear Waste Fund is managed and the way in which appropriations are made from the Fund. Reform of the Fund appropriations process is necessary to provide a stable financial footing so that the government can fulfill its statutory and contractual obligation to provide safe disposal of spent nuclear fuel and other high-level radioactive waste as was the intent of the Nuclear Waste Policy Act. Although the House Energy and Commerce Committee voted favorably on H.R. 3981 in the previous Congress, the bill never made it to a floor vote and no action was taken in the Senate. We did not consider that a perfect bill (it was only for a five year period) but it would have helped ensure that more of the fee revenue collected by the Fund would actually be appropriated for its intended use. While the FY 2006 budget referred to the Administration's remaining interested in pursuing a similar proposal for reclassification of NWF fees as offsetting collections and discussing it with Congress, no legislation was developed that year.

NARUC's and State utility regulator's prime concern for the repository program remains to reform the Nuclear Waste Fund appropriations process. It is difficult for us to see how the repository program can ever shift into an implementation phase when funding requirements would need to increase by orders of magnitude compared with the pre-licensing phase. Simply put, the repository cannot be built without a more stable financing arrangement. Without the repository, spent nuclear fuel continues to accumulate and be stored in places that were never designed or permitted for indefinite storage. Spent fuel would be stored at 72 locations along rivers and lakes in 34 States instead of in a more secure, well-designed repository. Although we see many favorable signs for investment in new nuclear power plants, including provisions of the Energy Policy Act of 2005, we also continue to hear that lack of a clear path towards disposal of spent nuclear fuel may hold back that investment.

We also need reform of the Nuclear Waste Fund because we owe it to the ratepayers who pay the fees in their electric bill. For the past five years, three quarters of the fees collected for nuclear waste disposal have gone to other unrelated federal purposes. In the current fiscal year total fee payments into the Nuclear Waste Fund are expected to be \$750 million. That compares with \$99 million appropriated for the repository program. All that we as utility regulators can show ratepayers is a financial report from the Department of Energy that there is an account in the Treasury called the Nuclear Waste Fund that supposedly has \$18 billion in it for the repository program. It is a cruel fact of life that for all practical purposes those funds are inaccessible or already spent. All the ratepayers want is for the government to remove the spent fuel for disposal as they were promised over 24 years ago would already have begun by now.

We are grateful for the leadership of House Energy and Water Development Appropriations Subcommittee and its unwillingness to simply do nothing last year while the repository license application was delayed and no reform to the Nuclear Waste Fund was in the works. In the markup of the FY 2006 budget, Energy and Water Appropriations Subcommittee Chairman David Hobson sought to add \$10 million to initiate an interim storage program using DOE sites that are presumed to already have the security and other support that could accommodate spent fuel from commercial reactors. DOE would take title to and ship utility waste to the unspecified locations that already store similar government radioactive waste. We had



many questions about that approach, but it could have been a step in the right direction, especially for spent fuel now stored at 14 shutdown reactor sites. We doubt that any significant quantity could have been moved in FY 2006, as the Subcommittee report indicated, or that much could be done for the \$20 million the bill would have appropriated. Of course, when the Senate did not include similar provisions or equal funding, the proposal did not survive in conference.

For FY 2007, the House again took up an interim storage proposal in the appropriations bill, this time adding \$30 million, not from the Nuclear Waste Fund, for development of some undetermined amount of interim storage of spent fuel at "integrated spent fuel recycling facilities" that could be serve as a vanguard for demonstration of spent fuel reprocessing under the Advanced Fuel Cycle Initiative being pursued within DOE as part of the broader Global Nuclear Energy Partnership (GNEP.) There was a stipulation in the bill that authorization be obtained for interim storage, since DOE has maintained that it lacked authority to establish interim storage.

Then this Committee released its proposal, which later became Section 313 of the Senate Appropriations Committee markup of the FY 2007 Energy and Water Appropriations Bill (Senate Report 109-274), that calls for DOE to propose "consolidation and preparation facilities" for interim storage of spent fuel in each State with a commercial nuclear reactor or, alternatively, regional CAP facilities. We understood Chairman Domenici wanted to stimulate a dialogue on interim storage and to get States involved. I have been surprised at the muted reactions from many States, who may be tending to more pressing matters like wildfires, budget crises and other issues. I will say this, however: States are involved in nuclear waste storage at reactors. In my State, we have utilities expressing great interest in building new nuclear plants to provide emissions-free reliable baseload power for forecasted energy demand. Yet, the utilities indicate they may have difficulty raising capital without greater certainty on nuclear waste disposal. State utility commissioners are also involved in another way: those utilities making payments into the Nuclear Waste Fund, pass those costs on to their ratepayers. Since 1983, over \$900 million has been paid into the Fund from South Carolina.

We have many questions about the CAP proposal. Unless DOE is better staffed than I suspect they are, it would seem unlikely that DOE could undertake a delicate site search concurrently in 31 States within the 270 day timeline. There are environmental impact considerations and the potential for litigation that could slow the process. Are we even sure that every State has a storage deficiency? It is my understanding that once it was apparent that DOE would not meet the 1998 waste acceptance mandate, many utilities resigned themselves to the necessity to develop dry cask storage on-site to supplement pool storage. There is litigation over recoupment of those expenses, but for the active reactors, there has been a steady increase (over 38 so far) of separately licensed dry cask facilities and more are planned. The shutdown plants had little choice but to put their fuel in dry cask storage and some of those sites could stand some relief from continuing to store spent fuel.

Governors will want to know how the site search process within their States will proceed. Some States have restrictions on developing new nuclear facilities within the State and, although the factual record on nuclear waste transportation safety is superb, there is nonetheless public concern over transportation and unease over siting that is not likely assuaged by assurances that the CAP storage would only be for 25 years.

NARUC has supported interim storage away from reactor storage sites for some time, whether by the government or at private facilities provided by the utilities themselves such as proposed at Skull Valley, Utah. In our view, the Nuclear Waste Policy Act does not permit government interim storage to be financed by the Nuclear Waste Fund (Section 302.d.). Some of the expenses relating to waste shipping casks and transportation might be permitted since they could be interpreted as needed for the permanent repository. However, there is a broader question of equity: why should the Nuclear Waste Fund, which is supposed to be used to develop a permanent repository be used for expenses that could have been avoided had DOE met its statutory and contractual obligations to begin spent fuel acceptance in 1998? This is at the heart of the ongoing litigation by numerous utilities against DOE and it is not anticipated that the Nuclear Waste Fund will be used to make damage payments that may be awarded in those cases.

Also relevant to the use of the Nuclear Waste Fund is the 2002 decision by the Eleventh Circuit of the United States Court of Appeals (*Alabama Power, Carolina Light and Power, et al. v. Department of Energy*) ruling that the Nuclear Waste Fund may only be used for disposal and an expenditure for interim storage is not an act of disposal.

Last year, the House Appropriations Report (109-086) called for DOE to initiate a plan to begin spent fuel reprocessing (or re-cycling) in FY 2007. Members of the Committee are familiar with the history of reprocessing in this country and the experiences in other countries. We know the 2001 National Energy Plan recommended that the subject be re-visited, and that DOE has an Advanced Fuel Cycle Initiative as part of a research effort to look at what to many is an intuitively appealing goal of 'recycling' used fuel. Yet technology, economics, environmental and proliferation concerns remain. Testimony by industry and academic experts before the House Science Committee last July also suggested there are many economic and other questions to be addressed. We will leave that for others to sort through, but I want make a single point here: There is no known reprocessing method in use today or possible in the future that does not result in some quantity of high-level radioactive waste that will require disposal in a repository. Therefore, whether we reprocess in this country or not we will still need a repository like Yucca Mountain. Put another way, reprocessing is not an alternative to building a repository, as much as some might wish it to be. There may be less waste if we reprocess and it may be of different toxicity, but it still must be isolated from the human environment. All of the countries that reprocess know this and are planning long-term disposal.

Moreover, the repository design that is being proposed for Yucca Mountain does not preclude a future decision to retrieve any or all spent fuel emplaced in it for reprocessing (or other reasons) until the decision is made to seal the repository, which, according to DOE, could be anywhere from 50 to 300 years in the future. If spent nuclear fuel is indeed an energy asset, Yucca Mountain will be an ideal place to store it until needed.

With the FY 2007 Department of Energy Budget, Secretary of Energy Samuel Bodman announced the initiative called the Global Nuclear Energy Partnership (GNEP). It has many dimensions and purposes, but one that we are interested in is the suggestion that if advanced forms of reprocessing and recycling of spent nuclear fuel were to be developed under the GNEP vision, that the amount of nuclear waste requiring disposal might be greatly reduced and its radiation characteristics would be hazardous over a much shorter period of time. Naturally, we are interested in learning more about the proposal and its feasibility in terms of achievable technology, economics, environment and non-proliferation considerations. It is too new for us to take a position on the matter until we learn more, but our existing policy remains current. In 2000, we revised our Nuclear Waste Guiding Principles to include: "Reprocessing of spent fuel may be worthy of research, but, even if feasible, does not eliminate the need for a permanent repository." Accordingly, we support the research proposed for GNEP and the Advanced Fuel Cycle Initiative in the FY 2007 DOE budget request. It appears to be a worthwhile investment that could pay dividends down the road while investigating the feasibility of proliferation-resistant reprocessing.

We have been troubled by the legislative proposal to have the Department of Energy take title to spent nuclear fuel at commercial reactor sites and manage it there for some unspecified time, as in S. 2099. We see press reports that the scheme would be financed by the Nuclear Waste Fund and we also interpret the real objective is to somehow—with no clear terminating point—keep the spent fuel where it is instead of building the repository. Obviously, to abandon the repository would require amendment or possibly repeal of the Nuclear Waste Policy Act. Proponents of this proposal seem to forget the finding in the Nuclear Waste Policy Act that "Federal efforts during the past 30 years to devise a permanent solution to the problems of civilian radioactive waste disposal have not been adequate." Instead, they would have us revert to that Square One posture.

We have been careful to avoid any suggestion that continued spent fuel storage at reactor sites is not as safe and secure as the Nuclear Regulatory Commission, which regulates it, maintains that it is, but let us at least suggest that the proposal to have DOE take title and manage spent fuel at present reactor storage sites is not consistent with the "compelling national interests" that former Secretary of Energy Spencer Abraham referred to when he recommended Yucca Mountain as a suitable repository site to the President and Congress in 2002. He said, and we agree, that the repository is important to homeland security.

We strongly oppose the suggestion that the government take title to spent fuel which would remain at 72 reactor sites instead of going to a repository. That is not what was promised in the Nuclear Waste Policy Act and reaffirmed by joint resolution in 2002 and it is most certainly not what ratepayers have paid \$25 billion in fees and interest over the past 22 years to achieve.

Before I conclude, there is one other item to discuss. We urge strong leadership on the part of the Department of Energy and its support contractors to keep this much-delayed repository program moving forward. We have expressed our frustra-

tions in the past with the chronic underfunding and series of delays that have troubled the program. DOE needs to work its way through whatever else needs to be done to put the repository licensing back on course. We commend the positive spirit and determination of Mr. Edward Sproat, the new director of the Office of Civilian Radioactive Waste Management, when he announced the revised schedule last month and we wish him and the repository team well in meeting that schedule. We appreciate EPA meeting the challenge of responding to the court remand with its proposed revised radiation standard. Although we disagreed with extending the regulatory period to one million years, EPA did meet the mandate of the court and it is time to issue the final rule. We have been aware that during the license application delay, DOE has been conducting a re-examination of repository plans. We saw some of the results of what is termed "program re-direction" in a press release last October. A change in approach was described as being "simpler, safer and more cost-effective," mostly as a result of a shift to standardized spent fuel canisters that will allow significant changes in fuel handling at the receipt facilities at Yucca Mountain. We certainly applaud cost savings, improved safety and the prospect of reducing the licensing complexity, but we have two concerns that we want to pursue:

1. Will these changes further delay the license application and how will that affect eventual repository operational dates? The schedule announced last month showing initial waste disposal in 2017 is predicated on a number of variables including adequate funding.

2. How will DOE and the utilities be able to ensure that all spent fuel presently stored at reactor sites (up to the current planned amount of 63,000 metric tons) will be able to be transferred into the standardized canisters? Spent fuel is increasingly being stored in sealed canisters in dry casks that will either have to be accepted as is or have the contents transferred to the standard canisters.

Finally, NARUC has not taken any strong position on the other elements of the proposed Nuclear Fuel Management and Disposal Act, aside from our support for the Nuclear Waste Fund reclassification proposal. In general, we find the other provisions to be helpful for the overall goal of licensing, building and operating the repository. We agree that the 70,000 metric ton statutory limit on the repository capacity is arbitrary and the proposal to have the capacity be among the elements of the license review by the Nuclear Regulatory Commission makes sense. We have always urged DOE to plan and eventually conduct the spent fuel transportation in cooperation with other federal, State, tribal and local governments and, to the best of our knowledge the Department is planning to do that as required by the NWPA and as has been done successfully in previous nuclear waste shipments.

Let me summarize what we support:

1. Reform of the Nuclear Waste Fund so that collected fees are available for their intended purpose, as proposed in S. 2589.
2. DOE needs to press on with licensing the Yucca Mountain repository.
3. Central interim storage away from reactor sites that does not interfere with developing the repository.
4. Research of advanced reprocessing and further study of all aspects of the GNEP initiative.
5. Infusing a sense of urgency in spent fuel repository development.

And, let me summarize what we strongly oppose:

1. Continued diversion of the Nuclear Waste Fund fee payments.
2. Having DOE take title of spent fuel at reactor storage sites and to retain it there.
3. Use of the Nuclear Waste Fund for interim storage, certainly not so long as appropriations for interim storage would come at the expense of adequate appropriations for the repository.
4. Putting as many as 31 States through a concurrent site search for interim storage before the costs and benefits of the proposed "consolidation and preparation" facilities have been determined.

Thank you for the opportunity to testify before you today. I look forward to your questions.

The CHAIRMAN. Thank you very much.  
Mr. Beasley.

**STATEMENT OF J. BARNIE BEASLEY, JR., PRESIDENT AND  
CHIEF EXECUTIVE OFFICER, SOUTHERN NUCLEAR OPER-  
ATING COMPANY**

Mr. BEASLEY. Mr. Chairman and members of the committee, my name is Bernie Beasley. I'm president and CEO of Southern Nuclear Operating Company, and it's indeed a privilege to be here this morning on behalf of the nuclear energy industry's support of this bill. The nuclear industry is grateful, Mr. Chairman, for your strong leadership on this important issue, and for calling this hearing, and for your commitment to nuclear power.

We believe this bill is a good start toward comprehensive legislation to reform the Nation's nuclear waste program. And my testimony will also address additional provisions that we believe would strengthen the legislation to enhance the management and disposal of the used nuclear fuel and high-level radioactive waste. And I have also submitted written testimony for the record this morning. In keeping with the scope of this hearing, I'll focus my testimony on the following key issues:

First, the need for real progress in licensing and development of the Yucca Mountain repository is critical. Second, the key role that this bill can play in establishing a solid basis for making the necessary progress toward addressing the challenges facing the Yucca Mountain project, as well as helping set the stage for new nuclear plants. Third, additional legislative provisions that we urge the committee to consider in addition to those in this bill. The Federal Government should initiate actions that will lead to the removal of used fuel from commercial nuclear plant sites as expeditiously as practicable.

Based on many years of experience in operating nuclear powerplants, I am convinced that nuclear power is and offers a safe, clean, and cost-effective answer to many of our Nation's current and future energy needs. Maintaining even the 20 percent contribution that nuclear power currently makes to the Nation's electricity needs will require construction of a significant number of new nuclear plants beginning in the next decade.

In order to fully realize the benefits that nuclear power offers, however, a solution to the problem of disposal of used nuclear fuel must be found. Since the enactment of the Nuclear Waste Policy Act in 1982, our customers in Georgia and Alabama have paid almost \$900 million into the Nuclear Waste Fund.

In total, ratepayers across America have paid over \$27 billion into the Nuclear Waste Fund, and continue to pay at the rate of approximately three-quarters of a billion per year, yet no used fuel has been removed from reactor sites as required by this Waste Policy Act. Moreover, those same customers have had to finance costly onsite storage facilities, and these facilities expose the Federal Government to growing liability that has already resulted in hundreds of millions of dollars in judgments and settlements.

The nuclear industry is encouraged by DOE's recent publication of a schedule for the licensing and development of the repository at Yucca Mountain. We recognize, however, that DOE's most optimistic schedule would leave used fuel at reactor sites for some 20 years longer than the deadline that was mandated by the Waste Policy Act, and that past DOE schedules have not been realized.

DOE's failure to comply with statutory mandates and previous schedules demonstrates that more than new authorizing legislation is needed to make real progress toward the removal of the used fuel from our reactor sites, and it will also take a firm commitment from the Congress and the administration to adequately fund and implement the legislation. The industry believes comprehensive new legislation can expedite DOE's performance of its existing legal obligations, and this bill is a very good start.

In particular, the provisions in the bill that eliminate artificial constraints on the capacity of the repository, the reform of the Nuclear Waste Fund, and the codification of the waste confidence rule are all very important. The industry fully supports this bill, and believes its enactment would be a major milestone in implementing our national strategy for managing used nuclear fuel.

Notwithstanding our strong support for the proposal, we believe there are a number of additional issues that Congress should consider. In particular, we believe that legislation should require DOE to move used fuel from reactor sites to existing Federal facilities on an expedited basis. The United States currently stores foreign and defense reactor fuel at such sites, and there is no good reason why one or two centrally located Federal facilities should not be made available for domestic fuel.

Second, we believe that any temporary storage solutions should be economical, efficient, and should not unnecessarily divert attention and resources from the repository development. We are concerned that so-called take title provisions in bill S. 2099 would both deplete resources of the Nuclear Waste Fund and do nothing to materially impact the current situation.

And, finally, the execution of new contracts for the disposal of used fuel is on the critical path for licensing of new plants. We believe that direction from Congress would be helpful in implementing contracts for new plants.

Again, Mr. Chairman, we thank you for this opportunity to be here, and we'll entertain questions at the appropriate time.

[The prepared statement of Mr. Beasley follows:]

PREPARED STATEMENT OF J. BARNIE BEASLEY, JR., PRESIDENT AND CHIEF EXECUTIVE OFFICER, SOUTHERN NUCLEAR OPERATING COMPANY

Mr. Chairman and members of the Committee, my name is Barnie Beasley. I am President and Chief Executive Officer of Southern Nuclear Operating Company. I also serve on the Executive Committee of the Nuclear Energy Institute. I have attached a brief resume to my testimony as Exhibit 1. Thank you for this opportunity to express the nuclear energy industry's strong support of S. 2589, the Nuclear Fuel Management and Disposal Act. I will also address additional provisions that we believe would strengthen the legislation's role to enhance the management and disposal of used nuclear fuel and high-level radioactive waste, to ensure protection of public health and safety, to ensure the territorial integrity and security of the repository at Yucca Mountain.

Southern Nuclear is headquartered in Birmingham, Alabama, and is a subsidiary of Southern Company. Southern Company is a public utility holding company with its principal office in Atlanta, Georgia. In addition to Southern Nuclear, Southern Company is the corporate parent of five electric utilities: Alabama Power Company, Georgia Power Company, Gulf Power Company, Mississippi Power Company, as well as Southern Power Company and Southern Company Services, Inc. Southern Company's subsidiaries provide reliable and affordable electric service to 4.2 million retail and wholesale customers across the southeastern United States.

Southern Nuclear is the licensed operator of the Alvin W. Vogtle Electric Generating Plant and the Edwin I. Hatch Nuclear Plant, which are both two-unit nuclear

plants partially owned by Georgia Power Company, and the Joseph M. Farley Nuclear Plant, which is a two-unit nuclear plant owned by Alabama Power Company. The six nuclear units operated by Southern Nuclear comprise over 6000 megawatts of generating capacity and represent approximately 17% of the total annual generation of the Southern Company system. Both Plants Hatch and Farley have extended their operating licenses for 20 years. The application for the extension of Plant Vogtle's operating license will be filed with the Nuclear Regulatory Commission (NRC) next year. These plants provide our customers with reliable and reasonably priced electric energy.

Southern Nuclear will file an application for an Early Site Permit this month in order to determine the suitability of the Vogtle site for potentially two additional nuclear units at Plant Vogtle and is on a schedule to submit an application for a Combined Operating License ("COL") by early 2008.

#### SUMMARY

In keeping with the scope of this hearing, I will focus my testimony on the following key issues:

- The Department of Energy (DOE) must make visible and measurable progress in implementing an integrated national used nuclear fuel management strategy. The Yucca Mountain, Nevada, repository is a critical component of any such integrated strategy. This progress will help ensure that the expanded use of nuclear energy will play a key role in our nation's strategy for meeting growing electricity demand.
- The key role that S. 2589 can play in establishing a solid basis for making the necessary progress towards addressing the challenges facing the Yucca Mountain project, as well as helping set the stage for new nuclear plants.
- Additional legislative provisions that we urge the Committee to consider supplementing the solid foundation established in S. 2589. The federal government must initiate actions that will lead to beginning to remove used fuel from commercial nuclear plant sites as soon as possible.

#### NUCLEAR ENERGY MUST PLAY A KEY ROLE IN OUR ENERGY FUTURE

In the 2006 State of the Union address, President Bush affirmed the nation's commitment to "safe, clean nuclear energy" as part of a diverse portfolio that will meet America's future electricity needs. A long-term commitment to nuclear energy will make the United States more energy independent and energy efficient. The Administration and Congress demonstrated strong leadership by enacting the Energy Policy Act of 2005, which encourages diversity of energy sources, including emission-free sources of electricity, such as nuclear energy.

Based on many years of experience in operating nuclear power plants, I am convinced that nuclear power offers a clean and cost-effective answer to many of our nation's current and future energy needs. Although our nation must continue to employ a mix of fuel sources for generating electricity, it is important that nuclear energy maintain at least the current 20 percent contribution to U.S. electricity production. Maintaining that level of production will require construction of a significant number of new nuclear plants beginning in the next decade.

There is strong, bipartisan support for a continuing significant role for nuclear power. More than two thirds of the public supports keeping nuclear energy as a key component of our energy portfolio. The industry appreciates the recognition of nuclear energy's importance that Congress and the Administration demonstrated in the last year's comprehensive Energy Policy Act of 2005.

Recently, a new coalition of diverse organizations and individuals has been formed to educate the public on nuclear energy and participate in policy discussions on U.S. energy issues. The Clean and Safe Energy coalition, co-chaired by Greenpeace co-founder Patrick Moore and former Environmental Protection Agency Administrator Christine Todd Whitman, includes business, environmental, labor, health and community leaders among its more than 200 members.

#### THE NEED FOR LEGISLATIVE ACTION

In order to fully realize the benefits that nuclear power offers, however, a solution for the problem of disposal of used nuclear fuel must be found. Since the enactment of the Nuclear Waste Policy Act of 1982, the customers of Alabama and Georgia Power Companies have paid over \$897 million into the Nuclear Waste Fund. In total, rate payers across America have paid over \$27 billion into the Nuclear Waste Fund, and continue to pay an additional \$750 million each year. Yet, no used fuel has been removed from reactor sites as required by the NWPA. Moreover, those

same customers have had to finance costly on-site storage facilities. Southern has had to construct two such facilities to date.

The causes for the failure of the federal used nuclear fuel program to date are well documented. The fundamental problem with the failure of the federal government to remove used fuel from our plant sites has not been the lack of authorizing legislation. It has been the failure to implement the legislation that has been enacted for almost 25 years by appropriating sufficient funds and by a consistent commitment to execute plans to develop the repository. While new legislation to amend the Nuclear Waste Policy Act is important, it is even more critical that the federal government commit itself to the implementation of existing law.

The nuclear industry is encouraged by the ambitious schedule announced by DOE on July 19, 2006, for submission of the license application by June 30, 2008, and the “Best-Achievable” construction schedule that could have the repository begin receipt of used fuel in March 2017. The industry encourages DOE to submit the application as soon as possible so NRC review can begin.

While DOE’s announcement of a schedule for licensing the repository is a significant development, past experience suggests that the schedule will be difficult to achieve without congressional action in a number of areas:

- The Congress providing appropriations consistent with Administration requests;
- An NRC construction authorization decision consistent with the timelines contained in the Nuclear Waste Policy Act;
- Obtaining any necessary Federal or state authorizations or permits for the repository and the transportation system; and
- The DOE achieving a nuclear culture consistent with that needed to be a successful NRC licensee.

Enactment of the Nuclear Fuel Management Disposal Act, S. 2589, will help advance several of these important objectives.

S. 2589 SUPPORTS THE FUTURE ROLE FOR NUCLEAR POWER IN OUR  
NATIONAL ENERGY STRATEGY

*Waste Confidence Is Affirmed*

The nation’s policymakers must be confident that policies are in place to ensure the safe and secure storage and disposal of used nuclear fuel. This waste confidence determination is reflected in NRC rules that support various licensing actions. Section 9 of S. 2589 takes the very important step of codifying the waste confidence rule. This will help to avoid potential contentions in individual plant licensing proceedings over the timing and certainty of the performance by DOE of its responsibilities under the Nuclear Waste Policy Act. We strongly support this important step in creating certainty for major new investments by the nuclear industry in response to Congress’s Energy Policy Act of 2005.

Managing the nation’s used fuel is a firmly established federal obligation and, as such, is a matter of broad national policy. There is solid scientific and technical justification to affirm waste confidence. In 2001, the National Academy of Sciences confirmed four decades of international scientific consensus that geologic disposal is the best method for managing used nuclear fuel. Congress approved a geologic disposal site at Yucca Mountain in 2002.

In the Energy Policy Act, Congress included provisions that encourage the construction of new nuclear power plants, illustrating confidence in the nation’s ability to manage used reactor fuel in the future. In addition, DOE has safely operated a geologic disposal site for transuranic radioactive waste near Carlsbad, N.M.—the Waste Isolation Pilot Project (WIPP).

Issues regarding the timing and certainty of performance by DOE of its used fuel management obligations should be resolved in proceedings on the repository, or in Congress. Litigation of such issues in individual plant licensing proceedings is neither efficient nor appropriate. NRC has long recognized that individual plant licensing proceedings should not be burdened with debates over DOE’s development of the repository. Congress should codify “waste confidence” as called for in S. 2589, so that the NRC need not address this broad public policy matter in routine licensing proceedings.

*Artificial Constraints on Repository Operations Are Eliminated*

Currently, there is a statutory limit of 70,000 metric tons (MT) on the amount of nuclear waste materials that can be accepted at Yucca Mountain. The Environmental Impact Statement for the project analyzed emplacement of up to 105,000 MTs of commercial used fuel in the repository. Additional scientific analyses suggest significantly higher capacity could easily be achieved with changes in the repository

configuration that use only geology that has already been characterized and do not deviate from existing design parameters. Advanced nuclear fuel cycle technologies could provide significant additional capacity for disposing of waste products in Yucca Mountain.

Decisions on licensing and operations of a deep geologic repository at Yucca Mountain should be based on scientific and engineering considerations through DOE technical analyses and the NRC licensing process, not on artificial constraints. Given the decades of study and the billions of dollars invested in Yucca Mountain, it makes sense that we fully and safely utilize its potential capacity, rather than developing multiple repositories when there is no technical reason to do so. S. 2589 will allow the nation to do just that by lifting the artificial 70,000 MT capacity limit.

#### S. 2589 INCLUDES KEY PROVISIONS FOR YUCCA MOUNTAIN PROGRESS

##### *Offsetting Collections Reclassification Will Enhance Funding Predictability*

Congress established the Nuclear Waste Fund to cover costs associated with disposal of commercial used nuclear fuel. This fund is paid for by a one-tenth-of-a-cent-per-kilowatt-hour fee on electricity used by consumers of nuclear energy. Congress has routinely failed to appropriate to the repository program the total fees paid into the Waste Fund in that year. Further, restrictions on the federal budget have prevented fees collected, but not appropriated, in one year from being appropriated in subsequent years.

As a result, Yucca Mountain budget requests have been cut by more than \$1 billion over the last decade. Program funding requirements are forecast to increase substantially over the next few years. If overall spending totals remain flat, even more significant delays could result, not because nuclear power consumers have not provided the funds necessary to support the program, but because of inappropriate federal budget accounting.

To date, consumers of nuclear power have committed more than \$27 billion in fees and accrued interest into the fund, and continue to pay at a rate of \$750 million each year. However, only some \$9 billion has been spent on the project, leaving a balance in excess of \$18 billion. In recent years, fee income has been five times as high as annual spending from the fund.

It is my understanding that S. 2589 would reclassify prospective annual fees so that appropriations up to the full amount of fee revenues for any year would not be limited by discretionary spending caps. While this approach would be a major step forward, we believe that the Congress should also reaffirm the compact with ratepayers in the Nuclear Waste Policy Act and provide that any appropriation for the program could be offset by balances in the Nuclear Waste Fund whether derived from prospective fees or past fees and interest.

In addition, we believe it is important for the Congress to act to maintain the integrity of the Nuclear Waste Fund. We support amending S. 2589 to clearly define that only activities that directly contribute to meeting the federal government's obligation under the NWPA can be supported from the Nuclear Waste Fund. This includes expenditures related to transportation, storage, and disposal of used fuel and high-level waste.

Advanced research on energy technologies has consistently been funded through general revenues, and there is no reason research on advanced fuel processing nuclear technologies—such as those contemplated under the President's Global Nuclear Energy partnership program—should be financed any differently.

Also, Congress should reaffirm its authority over any changes in the Nuclear Waste Fee by requiring such changes be made by statutory amendment.

##### *S. 2589 will Enhance Clarity and Stability in the Licensing Process*

The NRC repository licensing process should be restructured to ensure that the proceedings are prioritized. First, there must be a reasonable, but finite, schedule for review of the authority to "receive and possess" fuel that would follow approval of the construction license. This would be consistent with an established schedule for the initial review of the construction license application and could avoid dilatory procedural challenges that would undermine the government's ability to meet its contractual obligations and avoid the significant costs of delay.

Second, clarification must be provided as to what activities are authorized to develop used fuel management infrastructure prior to the NRC granting a construction license, including the construction of a rail line to connect the Yucca Mountain site with the national rail network. Regulatory authority for the transportation system needs to be clarified as well.

Third, the hearing process for the authorization to receive and possess fuel should be simplified to provide for clear and concise decision making.



Finally, clarification is needed with respect to land management, what regulations will apply to repository construction and operations, and which agencies will administer those regulations.

S. 2589 addresses each of these issues to increase the prospect that the “best achievable” schedule announced by DOE can be met.

CONGRESS SHOULD CONSIDER ADDITIONAL STEPS TO PROMOTE COMPREHENSIVE  
USED NUCLEAR FUEL MANAGEMENT

While industry fully supports S. 2589 and believes its enactment would be a major milestone in implementing our national strategy for managing used nuclear fuel, we believe there are a number of additional issues that Congress should consider in comprehensive legislation.

*DOE Should Move Used Nuclear Fuel from Reactor Sites As Soon As Possible*

The industry’s top priority is for the federal government to meet its statutory and contractual obligation to move used fuel away from operating and decommissioned reactor sites. The government already is eight years in arrears in meeting this obligation, and it will be at least another decade before the repository is completed. That failure is the subject of more than 60 lawsuits.

These lawsuits potentially expose the federal government to billions of dollars of judgments and settlements.

Further delays in federal receipt and movement of used nuclear fuel and defense waste products will only add to utility damage claims, and, according to DOE, will increase taxpayer liability for defense waste site life-cycle costs and Yucca Mountain fixed costs.

While DOE moves forward to license, construct and operate the Yucca Mountain repository, the government must take title to used fuel and move it to secure federal facilities as soon as practicable. A number of proposals have been made to address the issue of “interim storage.”

The best approach would be for the federal government to begin to move fuel in proximity to the planned repository. Both House and Senate appropriations bills for FY 2007 have provided direction on this issue. While there is clear interest in looking at options for early movement of fuel, none of the options has yet demonstrated that it is politically and technically workable and could be accomplished in a timely manner. A cooperative and supportive host site is critical to meeting these criteria.

It appears that one or two interim storage sites that provide benefits desired by the host state and community are the appropriate approach. Industry experience demonstrates that such facilities can be sited, licensed, and constructed on an expedited schedule. We are encouraged that DOE has advised the Congress, in its solicitation for prospective sites for nuclear fuel recycling facilities, that there will of necessity be some interim storage of used nuclear fuel involved. A number of communities have expressed initial interest in participating in such a project. We believe Congress should work with DOE, industry and potential host sites to determine what steps will best facilitate the movement of used fuel from utility sites, and incorporate appropriate provisions into S. 2589.

The industry does not believe that the “take title” approach suggested in S. 2099 either meets the federal obligation or provides any benefit. The requirement in that legislation that all used fuel at reactor sites be moved immediately into dry cask storage could add up to \$800 million a year over five years to the costs of producing nuclear energy. Regardless of the interim storage strategy chosen, it is critical that those activities—not divert attention and resources from repository development.

*New Reactor Waste Disposal Contract Issues Need to Be Addressed*

As utilities prepare to license and construct new nuclear power plants, it is important that appropriate changes be made in the Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste originally established by rulemaking (10 CFR, Part 961) to reflect developments since these contracts were originally drafted in the 1980s. While the language in both the NWPA and disposal contracts allows for an existing contract to be amended adding new plants, DOE’s failure to perform, and the subsequent litigation, has created a situation where this option may be difficult to execute. Instead, the preferred path forward would be to enact legislation directing DOE to enter into new disposal contracts for new nuclear plants that are consistent in form and substance with the existing disposal contracts, but which take into account the schedule for the operation of new plants. In particular, the 1998 deadline in the existing contracts should be revised in contracts executed for new plants.

The Congress should also consider steps that could facilitate early resolution of future claims by utilities against the federal government for its continuing failure to meet its obligations under the NWSA.

THE YUCCA MOUNTAIN LICENSING PROCESS SHOULD PROVIDE FLEXIBILITY TO  
ADDRESS FUTURE DEVELOPMENTS

As provided by existing regulations, Congress should direct DOE to incorporate features into its repository development plans that maintain flexibility for future generations to make informed decisions based on operational experience, changing energy economics, and technological developments. It should be made clear that it was always the intent that the repository design retains the ability to monitor and, if needed or desired, retrieve the used fuel.

The nuclear energy industry supports enhancements to the Yucca Mountain repository that would provide greater long-term assurance of safety and permit DOE to apply innovative technology at the repository as it is developed. These enhancements include:

- extensive monitoring of the used nuclear fuel placed in the repository and its effects on the surrounding geology for 300 or more years;
- the ability to retrieve the used nuclear fuel from the facility for an extended period; and
- periodic review of updates to the repository license that takes into account monitoring results and ensures that the facility is operating as designed.

DOE already has committed to facilitate the use of these elements in its repository planning. For a period of 50 to 300 years, the federal government will “collect, evaluate and report on data” to assess the performance of the repository and the ability to retrieve the used fuel within the facility, if desired. In addition to monitoring material within the facility, DOE will conduct tests and analyses to ensure that the repository is constructed and operated according to strict guidelines. Although DOE is pursuing these elements, Congressional direction on the proposed enhancements would provide greater certainty on the scientific and regulatory oversight of long-term repository operation and the condition of the material stored there.

Doing so would require no modification to the existing federal statutory or regulatory framework. DOE could include these enhancements as part of its “receive and possess” application and the commitment to complete them should be incorporated as a condition of the NRC license.

This direction will offer greater assurance to the public that long-term stewardship of used fuel at Yucca Mountain will be carefully monitored throughout repository operation. It would also allow DOE to take advantage of future technological innovations to improve the repository or provide for the potential reuse of the energy that remains in the fuel.

*Used Nuclear Fuel Recycling*

The nuclear energy industry has shown consistent and strong support for research and development of advanced fuel cycle technologies incorporated in the Advanced Fuel Cycle Initiative (AFCI). In anticipation of a major expansion of nuclear power in the United States and globally, it is appropriate to accelerate activities in this program. The resurgence in development of nuclear energy is expected to require advanced fuel cycles. However, a repository will be necessary to handle defense wastes, legacy commercial used nuclear fuel, and waste by-products regardless of which fuel cycle is ultimately developed.

President Bush has presented a compelling vision for a global nuclear renaissance through the Global Nuclear Energy Partnership (GNEP). This initiative provides an important framework to satisfy U.S. and world needs for an abundant source of clean, safe nuclear energy while addressing challenges related to fuel supply, long-term radioactive waste management, and proliferation concerns. It may be possible that currently available technologies could be used creatively to jump-start the development of the needed advanced nuclear fuel cycle technologies.

We recognize that the Congress has important questions regarding this program. DOE’s near-term focus for GNEP is to determine, by 2008, how to proceed with demonstration of advanced recycling technologies and other technological challenges. Consequently, the industry fully supports increased funding for AFCI in fiscal 2007. However, neither AFCI nor GNEP, reduces the near-term imperative to develop the Yucca Mountain repository.

*A Constructive Role for Nevadans*

The nuclear energy industry supports an active and constructive role for Nevada in the development of Yucca Mountain to help ensure the safety of its citizens. The industry also supports compensation for the State to account for the program's socio-economic impact, as called for in the Nuclear Waste Policy Act. This model is consistent with the siting and operation of the Waste Isolation Pilot Plant.

The industry is encouraged by the steps DOE has taken to work with affected local governments in the State, and we further encourage DOE to expand its interactions with Nevadans interested in constructive engagement in the project. The industry urges the Congress to include provisions in S. 2589 to foster these developments.

## CONCLUSION

We must never lose sight of the federal government's responsibility for civilian used nuclear fuel disposal, as stated by Congress in the Atomic Energy Act of 1954 and the Nuclear Waste Policy Act of 1982. The industry fully supports the fundamental need for a repository so used nuclear fuel and the byproducts of the nation's nuclear weapons program are safely and securely managed in a specially designed, underground facility. World-class science has demonstrated that Yucca Mountain is an eminently suitable site for such a facility.

A viable used fuel management strategy is necessary to retain long-term public confidence in operating existing nuclear power plants and in building new nuclear power plants to meet our nation's growing electricity needs, and to fuel our economic growth. The public confidence necessary to support construction of new nuclear plants is linked to successful implementation of an integrated national used fuel policy, which includes a continued commitment for the long-term disposition of used nuclear fuel. This requires a commitment from the Administration, Congress, and other stakeholders to ensure that DOE makes an effective transition from a scientific program to a licensing and construction program, with the same commitment to safety. New waste management approaches, including interim storage and nuclear fuel recycling, are consistent with timely development of Yucca Mountain.

Enactment of S. 2589 is the critical pre-requisite to implementing our national policy for used fuel management.

The CHAIRMAN. Thank you very much.

I want to just inform the Senators and witnesses that I just received notice that we have just started voting on the floor, and there will be three votes, one after another, which means that will be a long time, and I don't know quite what will happen, what we'll do. But we're going to go right on to you, Mr. Loux, right now, and then we'll go over to you, and see if we can get one round in before we leave. If you can make it brief, we would be greatly appreciative, sir.

**STATEMENT OF ROBERT R. LOUX, EXECUTIVE DIRECTOR, NEVADA AGENCY FOR NUCLEAR PROJECTS, OFFICE OF THE GOVERNOR**

Mr. LOUX. I will do so, Mr. Chairman. I wanted to thank you for your invitation. As you know, my name is Robert Loux, and I'm here on behalf of the Governor of Nevada.

The CHAIRMAN. Thank you.

Mr. LOUX. I would like to also request not only my statement but some additional materials I would like to make available for the record, and give them to the committee this afternoon, if that—

The CHAIRMAN. That will be done.

Mr. LOUX. Thank you very much.

We have viewed, obviously, the provisions of this bill, and we find it's the most extraordinary piece of proposed legislation, even when viewed in the highly politicized and conflict-laden context of the last 19 years of this program. During that time we have witnessed the unraveling of scientific screening and characterization of

candidate sites, only to have Yucca Mountain picked in a political process. We have seen the Congress prohibit the study of crystalline rock sites for a potential repository in order to avoid political troubles in the Eastern part of the United States.

The 1992 Energy Policy Act was Congress' rescue vehicle for Yucca Mountain when it was discovered that the site could not meet the EPA's general standards for repositories, and DOE's site recommendation guidelines and NRC licensing rules were adjusted to assure the site would not be disqualified for specific technical safety reasons. And in 2002, as you know, the Secretary recommended, the President approved, and Congress designated the Yucca Mountain site for a repository, even though Department of Energy was totally unprepared to submit an application to the NRC.

Now you have before you a bill that attempts, like a cowcatcher on a locomotive, to anticipate and sweep aside every potential health and safety obstacle that could upset the relentless drive to begin receiving waste at Yucca Mountain 11 years from now. The bill is so dismissive of American democratic values that it's not worthy of this committee or the Congress' attention.

Each of the noted historical actions above is the result of an incremental reduction of safety and an increased risk in the Nation's program. This bill before you today is a continuation of that process, in that it weakens or eliminates regulatory processes and controls both for the repository and the transportation arena.

Exempting waste transportation, storage, and disposal from the requirements of the Resource Conservation Act, and relying instead on the regulations adopted under the Atomic Energy Act, is an unprecedented compromise of well-understood, long-held and accepted protection to the public from risk of hazardous materials in the environment. This bill's provisions would allow the unprecedented release of hundreds of millions of pounds of hazardous chromium, molybdenum, vanadium, and nickel into the currently potable groundwater supply without any regulatory review whatsoever.

The Secretary of Energy should not be permitted to exempt waste transportation to the repository from external regulation. These provisions constitute an unnecessary, undesirable trading of public safety for an unspecified increase in convenience for the Department of Energy.

The bill mandates both substantive and procedural measures for the NRC license application review process, that curtail the existing rights of parties to review the complete application and take part in an adjudicatory hearing of the entire proposed project. This also is an unacceptable compromise of safety.

The bill usurps the State's traditional authority to administer waters by commandeering the State to grant extraordinary rights to the Department of Energy. The State's constitutional authority and implementing laws, under which the State Engineer makes water appropriation decisions, are ignored when the bill declares the Department's use of any amount of water it decides is necessary for Yucca Mountain is beneficial to interstate commerce and not detrimental to the public interest. The department, under this bill, would have no obligation to protect the water resources of the State. This too is unacceptable.

The proposed land withdrawal of 147,000 acres for land at the Yucca Mountain project is premature. Without a construction authorization by the NRC, which the Department is not expecting until at least 2011, there is no need or basis for the withdrawal.

The bill also gives the Secretary of Energy, as you have heard, the authority to close airspace over the repository withdrawal area, despite objections from the Secretary of the Air Force. The Air Force Secretary has already objected to any Yucca Mountain activity that would compromise the national defense mission of the Air Force, and our conversations with the Air Force indicate that an expansion of their range in the area of Yucca Mountain is in the planning for future Air Force missions with new fighters.

The bill's provisions for infrastructure improvement and construction prior to the NRC construction authorization are also premature and imprudent. Without a construction authorization from the NRC, the proposed new and replacement construction is not needed, not authorized by the act, and certainly not prudent.

In concluding, the many provisions of the bill that are aimed at eliminating health and safety requirements the Department perceives as obstacles to meeting its latest schedule for opening the Yucca Mountain repository have the appearance of being a litany of excuses for continued poor performance. Virtually all the issues raised in the bill involve actions that are outside of the control of the Department, yet the real obstacles the Department must deal with are ones of its own making.

None of the provisions of S. 2589 are needed by the Department to carry out the primary task at hand, and that is to prepare a complete, high-quality license application and submit to the NRC for review and hearing. The bill gathers the power of numerous State and Federal agencies, local authorities, and Indian tribes into the hands of the Department of Energy, probably the most distrusted Federal agency in the human health and environmental arena. It boldly does this for the sole purpose of attempting to force a faltering Yucca Mountain repository into becoming a reality.

Thank you, Mr. Chairman, for your time.

[The prepared statement of Mr. Loux follows:]

PREPARED STATEMENT OF ROBERT R. LOUX, EXECUTIVE DIRECTOR, NEVADA AGENCY  
FOR NUCLEAR PROJECTS, OFFICE OF THE GOVERNOR

I am Robert Loux, Executive Director of the Nevada Agency for Nuclear Projects. The Agency was established in 1985 by the Nevada Legislature to carry out the State's oversight duties under the Nuclear Waste Policy Act.

We have reviewed the provisions of the bill S. 2589 entitled "Nuclear Fuel Management and Disposal Act." It is a most extraordinary piece of proposed legislation, even when viewed in the highly politicized and conflict-laden context of the past nineteen years of this nation's high-level nuclear waste disposal program. During that time we have witnessed the unraveling of the scientific screening and characterization of candidate repository sites, as set out in the Nuclear Waste Policy Act of 1982, to be replaced with the unabashed, politically driven naming of Yucca Mountain, in Nevada, as the only potential repository site to be studied.

We have seen Congress prohibit the study of crystalline rock sites for a potential repository in order to avoid the brewing political turmoil over siting a second repository in any of the populous states of the northern mid-west and the eastern seaboard, where a large number of the nation's nuclear power reactors are located.

The 1992 Energy Policy Act was Congress' rescue vehicle for the Yucca Mountain repository site when it was discovered that Yucca Mountain could not meet the EPA's general safety standard for repositories. EPA's subsequent standard, aimed

at protecting the viability of the Yucca Mountain site, was thrown out by the court, and its proposed replacement, if adopted, will likely meet the same fate.

DOE's site recommendation guidelines and NRC's licensing rule were adjusted to assure the site would not be disqualified for specific technical safety deficiencies.

And, in 2002, the Secretary of Energy recommended, the President approved, and Congress designated the Yucca Mountain site for development of a repository despite the fact that the Department of Energy was unprepared to submit an acceptable license application to NRC. Just last month, Congress was told that a license application is planned to be submitted in 2008, six years later than the Nuclear Waste Policy Act's required 90 days after site designation by Congress.

Now you have before you a bill that attempts, like a cowcatcher on a locomotive, to anticipate and sweep aside every potential health and safety obstacle that could upset the relentless drive to begin receiving highly radioactive waste and spent nuclear fuel at Yucca Mountain in 2017—eleven years from now. (Ironically, in 1987, when Congress singled out Yucca Mountain, in an attempt to anticipate and fix the burgeoning waste program problems, the planned opening date also was then eleven years in the future—in 1998.) The bill is so dismissive of American democratic values that it is not worthy of this Committee's or the Congress' consideration.

Removal of potential health and safety obstacles to expedite licensing and operation of a Yucca Mountain repository does nothing to advance the primary safety finding of the Nuclear Waste Policy Act: "high-level radioactive waste and spent nuclear fuel have become major subjects of public concern, and appropriate precautions must be taken to ensure that such waste and spent fuel do not adversely affect the public health and safety and the environment for this or future generations." (Sec. 111(a)(7)). Each of the historical actions noted above has resulted in incremental reductions of safety (and increased risk) in the national nuclear waste program. This bill before you today is a continuation of that trend to the extent that it weakens or eliminates regulatory processes and controls, both for the repository and in the nuclear waste transportation arena.

#### RCRA EXEMPTION

Exempting waste transportation, storage, and disposal from the requirements of the Resource Conservation and Recovery Act (RCRA) and relying on regulations adopted under the Atomic Energy Act is an unprecedented compromise of well-understood, long-held and accepted protection of the public from the risks of hazardous materials in the environment. This is a step backward, away from the accepted policy. The Department of Energy's activities associated with hazardous materials are currently subject to external environmental regulatory oversight, more comprehensive in scope than that afforded under the Atomic Energy Act. This bill's provision would allow the unprecedented release of hundreds of millions of pounds of hazardous chromium, molybdenum, vanadium, and nickel into the currently potable groundwater supply without any regulatory review. The amount of hazardous metals released would vastly increase if the repository's nuclear waste capacity limit was lifted, as proposed by this bill.

#### TRANSPORTATION PREEMPTIONS

The Secretary of Energy should not be permitted to exempt waste transportation to the repository from external regulation. Also, the Secretary should not be given the ability to take the initiative in preempting State, local, and Indian tribal transportation requirements "irrespective of whether the transportation otherwise is or would be subject to regulation under the Hazardous Materials Transportation Authorization Act of 1994." These provisions severely compromise these entities' ability to be informed and knowledgeable of sources of risk passing through their jurisdictions and take measures required of public officials to protect public safety. They constitute an unnecessary and undesirable trading of public safety for an unspecified increase in convenience for the Department of Energy. They also ignore a recent National Academy of Sciences study that found, in part, that nuclear waste transportation can be acceptably safe if all existing regulatory requirements are rigorously enforced.

#### NRC LICENSING AND EIS

The bill mandates both substantive and procedural measures for the NRC license application and review process that curtail the existing rights of parties to review a complete application and take part in an adjudicatory hearing of the entirety of the proposed project. Permission to limit the information in the application for construction authorization to "surface facilities necessary for initial operation of the repository," coupled with the elimination of formal proceedings for license amend-

ments following the construction authorization, greatly inhibits the ability of parties to participate in a comprehensive safety review of the facility.

Furthermore, any Environmental Impact Statement (EIS) written to accompany a construction authorization decision will be insufficient in its required description of the project and evaluation of potential impacts if the complete planned surface facility and its operations are not available for analysis. The surface facility design concept is currently undergoing a major revision because of operational safety concerns that could not be mitigated. This provision allowing the complete surface facility design and operation to avoid full formal safety review during initial licensing proceedings invites unknown future safety and operational issues to arise, putting the public and workers at increased risk.

#### STATE DELEGATED AUTHORITIES

Nevada exercises lawfully-delegated authority to regulate emissions affecting air quality. This bill would usurp that authority for any activity or facility associated with the Yucca Mountain project, which according to provisions of the bill, could include construction and operation of a 319 mile-long new rail line to Yucca Mountain. Effective air quality management relies on familiarity with local conditions, and the public benefit of this valuable experience, especially related to construction in essentially pristine areas, would be lost under this bill.

#### STATE GROUNDWATER AUTHORITY

The bill usurps the State's traditional authority to administer its waters by commandeering the State to grant extraordinary rights to the Department of Energy. The State's constitutional authority and implementing laws, under which the State Engineer makes water appropriation decisions, are ignored when the bill declares that the Department's use of any amount of water it decides is necessary for the Yucca Mountain project is beneficial to interstate commerce, and not detrimental to the public interest. The commandeering of the State Engineer's authority would extend to water needed for the proposed rail, line which, in some places, passes through basins where the safe yield of the groundwater is already fully appropriated. The Department, under this bill, would have no obligation to protect the water resources of the State.

#### LAND WITHDRAWAL, LAND USE AND AIR SPACE ISSUES

The proposed withdrawal of 147,000 acres (approximately 230 square miles) of land for the Yucca Mountain project, which could include land for the 319 mile-long rail access to the site, is premature. Without a construction authorization by NRC, which the Department does not expect until at least 2011, there is no need or basis for the withdrawal. In order to receive a repository license, the Department must demonstrate ownership and control of the repository site, but this is not necessary prior to submitting a license application. DOE could simply agree to a condition that, if construction authorization is granted, a land withdrawal will be accomplished.

The proposed withdrawal unnecessarily limits public entry and use of current Public Land for at least the next five years, a period during which the Department has not demonstrated a need for the Public Land portion of the withdrawal.

The bill also gives the Secretary of Energy the authority to close airspace over the repository withdrawal area, despite any objection from the Secretary of the Air Force, whose aircraft currently use the airspace for thousands of training missions each year, with the frequency of use expected to increase in future years. The Air Force Secretary already has objected to any Yucca Mountain associated activity that would compromise the national defense mission of the Air Force.

And, the withdrawal would give the Department authority to exchange land within the withdrawal for federal land outside the withdrawal. With the various limitations for use of withdrawal lands, if exchanges were made to acquire land for the rail access line, this could greatly disrupt, without recourse, public use and access to lands currently used for grazing, mining and mineral exploration, and recreation.

#### PRE-LICENSE CONSTRUCTION

The bill's provisions for infrastructure improvement and construction prior to NRC construction authorization are also premature and imprudent. The Department recently has released for review and comment, an Environmental Assessment outlining the six new buildings and many miles of new road and electrical power line construction and replacement, it plans over a two year period prior to construction authorization. In the EA, the Department claims the approximately \$100 mil-

lion worth of new and replacement construction is not intended to support repository construction and operation, yet the bill gives a green light for just that purpose, even though, according to the Department's recently announced plans, the anticipated construction authorization is just five years away. Without a construction authorization from the NRC, the proposed new and replacement construction is not needed, not authorized by the Nuclear Waste Policy Act, and certainly not prudent, despite the thin claims in the EA that it will improve safety for workers, visitors, and regulators, and support continuing scientific work and testing.

#### PROGRAM FUNDING

Opening the annual receipts of the Nuclear Waste Fund as discretionary offsetting collections to fund the program is not an entirely new concept. Well over a decade ago, then Energy Secretary Hazel O'Leary made the plea to Congress, "Untie my hands," when seeking full access to the Nuclear Waste Fund. Since that time, we all have come to see that full access to the waste fund would not have been the solution to the problems that the program has inflicted on itself, and are beyond the scope of the anticipated and potential problems that this bill seeks to sweep aside.

#### QUALITY ASSURANCE

Throughout its history, the inability of the program to implement a satisfactory quality assurance program has been chronicled by the General Accounting Office (now Government Accountability Office) and the NRC, yet to date the problems persist. But, according to Department managers, as always, they are on the verge of being solved. Quality assurance failures were at the core of the now infamous e-mail incident whose fallout has caused millions of dollars of expense and immeasurable loss of credibility that still is ongoing. Open access to the Nuclear Waste Fund would not have provided an obvious solution to the persistent quality assurance failures. Instead, the Department sees it as a "culture" issue and is now (after more than 20 years) claiming to be implementing measures to make individual managers more accountable for their work and the work they supervise. In the licensing proceeding, the Department must demonstrate that it has management systems in place and functioning that would support an NRC finding that the Department would be a qualified and competent licensee. The Department itself does not seem to believe that it yet passes this test, but is confident that it will by the time of license application.

#### CONCLUDING REMARKS

The many provisions of this bill that are aimed at eliminating administrative and regulatory requirements the Department perceives as obstacles to meeting its latest schedule for opening a Yucca Mountain repository have the appearance of being a litany of excuses for continued poor performance. Virtually all of the issues raised in the bill involve actions that are outside of the control of the Department. Yet the real obstacles that the Department must deal with are of its own making. A most telling example was the Department's inability to comply with the NRC's requirement to provide an adequate and acceptable documentary record to support its then-anticipated 2004 license application. The Department's recently announced fantasy schedule calls for its next effort to provide such a record to take place on December 21, 2007, providing just a few days more than the required six months prior to submitting a repository license application, which is scheduled by the Department for June 30, 2008.

None of the provisions of S. 2589 are needed by the Department of Energy to carry out the primary task at hand—prepare a complete, high quality license application and submit it to the Nuclear Regulatory Commission for review and hearing. This bill gathers the powers of numerous federal and state agencies, local authorities, and Indian tribes into the hands of the Department of Energy, probably the most distrusted federal agency in the human health and environmental arena. It boldly does this for the sole purpose of attempting to force a faltering Yucca Mountain nuclear waste repository into becoming a reality.

The CHAIRMAN. Thank you, Mr. Loux.  
Mr. Fettus.



**STATEMENT OF GEOFFREY H. FETTUS, SENIOR PROJECT  
ATTORNEY, NATURAL RESOURCES DEFENSE COUNCIL**

Mr. FETTUS. Good morning, Mr. Chairman, thank you very much. My name is Geoffrey Fettus, and I'm a senior attorney with the Natural Resources Defense Council. I'd like to thank the committee for inviting me to testify on this bill, and I will be very brief and request that my more extensive written comments be submitted into the record.

As this committee with its expertise is well aware, Yucca Mountain is a project of monumental importance. It knows that nuclear waste permanently buried in a Federal geologic repository will be lethal for hundreds of thousands of years. Rather than treading carefully with these issues, this bill undercuts external regulatory oversight and protective environmental laws.

If Yucca Mountain is to meet the twin goals of protecting human health and, most importantly, public acceptance of the Federal solution, then this bill is a misguided effort. For the entire 35-year history of NRDC, we have supported deep geologic disposal of nuclear waste, but any repository must rely primarily on geologic isolation and meet protective public health standards. We have worked to ensure that the Government agencies charged with developing and regulating a geologic repository set strict standards to protect public health.

In contrast with S. 2589, our national focus should be on promulgating adequate environmental standards, then testing whether Yucca Mountain meets those standard through a thorough and transparent licensing process. That process currently exists in law. The public will not have confidence in the safety of the repository if the law has to be changed in order to make the site licensable.

My focus is on three objectionable sections of the bill: the severe dilution of the NRC licensing procedures; the blanket preemption of State environmental regulation; and the codification of the waste confidence rule. And I again will be very, very brief.

The licensing process is not without its flaws, but it still retains portions of the original and coherent vision of the Nuclear Waste Policy Act. There is opportunity for a careful adjudicatory process.

However, section 4 of the bill would dramatically undercut the current legal framework as it does away with the current deliberative proceedings. It would require the NRC to use expedited, informal procedures which limit discovery and the NRC's oversight. It would require the NRC to act on any application within 1 year after the application has been filed. The NRC has stated that this is not an achievable standard, and we agree. Moreover, limiting discovery and weakening oversight is unwise, as it further degrades the transparency and rigor needed for one-of-a-kind projects like this.

Section 4 also removes from the NRC any meaningful regulation of surface facilities, including any proposed facilities built for interim storage, an act that could essentially make the use of the repository a fait accompli regardless of the outcome of any construction license.

The bill undercuts the National Environmental Policy Act. The bill waives the requirement that DOE consider alternatives for a range of activities. The discussion and presentation of alternatives

is the heart of the NEPA process, and to waive those obligations removes the fundamental meaning of the law.

Section 6 of the bill nullifies the application of hazardous waste laws. The same section amends the Clean Air Act to nullify Nevada's air permitting authority. And I cite several other examples in my written testimony.

Finally, the issue of whether or not the availability of permanent geologic disposal should factor into nuclear powerplant licensing has been with us for decades. A compromise on how the issue would be addressed in a scientific and publicly acceptable manner was reached. Section 9 of this bill would undo that decades-old compromise.

Section 9 would require that the NRC must "deem, without any further consideration," that there is sufficient capacity to dispose of nuclear waste now, without hearing scientific debate or any meaningful inquiry into a problem that will last for tens of thousands of years. This bill directs the NRC to potentially ignore any new analysis, regardless of what the future holds. Such provision would stand the NRC's waste confidence rule on its head and run counter to the D.C. Circuit's careful designation of where scientific expertise should reside.

Respectfully, Congress should not be deciding issues of ultimate certainty in health and safety judgments, nor should it be resolving technical disagreements with the stroke of a pen. If we are ever to have a robust repository program that both follows the original intent of the Nuclear Waste Policy Act and gains the trust of the American public, then the Federal Government must cease efforts to weaken meaningful and protective health and environmental standards for Yucca Mountain.

Thank you for allowing me to testify, and I look forward to your questions.

[The prepared statement of Mr. Fettus follows:]

PREPARED STATEMENT OF GEOFFREY H. FETTUS, SENIOR PROJECT ATTORNEY,  
NATURAL RESOURCES DEFENSE COUNCIL

Good morning. My name is Geoffrey Fettus and I am a senior attorney with the Natural Resources Defense Council (NRDC). I have been the lead attorney on nuclear matters at NRDC for five years, but I have worked on nuclear waste and fuel cycle issues for nearly a decade. Before my current job I was an Assistant Attorney General for the State of New Mexico and subsequently practiced for the New Mexico Environmental Law Center. I thank the Committee for inviting me to testify on S. 2589, Nuclear Fuel Management and Disposal Act.

S. 2589 was submitted to the Committee by Department of Energy (DOE) Secretary Bodman and introduced by Senator Domenici at the Administration's request. The bill is designed to "facilitate the licensing, construction and operation" of the repository. The bill would perform a broad array of what DOE envisions as necessary tasks from land withdrawal to changes in the regulatory structure governing the proposed repository.

Unfortunately, S. 2589 is yet another effort to relax or remove appropriate environmental oversight and standards that must apply if the proposed repository is to meet the twin goals of protecting human health for the length of time the waste is dangerous and public acceptance of the federal solution to the nuclear waste problem. This is a project of monumental importance and unprecedented complexity. The nuclear waste to be permanently buried in a federal geologic repository will be lethal for hundreds of thousands of years. If this waste is inadvertently accessed or leaks uncontrolled into the environment, incalculable damage could result. Rather than grappling carefully with those issues, this bill would undercut external regulatory oversight and protective environmental laws.

Respectfully, this bill overreaches and should be withdrawn. If it is not withdrawn, it should be defeated. For the entire 35 year history of NRDC, we have supported deep geologic disposal for nuclear waste as long as any repository relies primarily on geologic isolation and meets protective environmental and public health standards. Our litigation on this matter has been to ensure that the government agencies charged with developing and regulating a geologic repository set strict standards protect public health and complied with the original intentions of the Nuclear Waste Policy Act (NWPA), 42 U.S.C. § 10101 et seq. and other applicable laws.

In contrast with the provisions of S. 2589, our national focus should be on promulgating adequate environmental standards and then testing whether Yucca Mountain meets those standards through a fair, thorough and transparent licensing process. That process is required by existing law. The environmental community and the public will not have confidence in the safety of the repository if the law has to be changed in order to make the site licensable.

To understand the many objectionable components of S. 2589 and its proposals to weaken regulatory oversight over the proposed Yucca project, what follows is a short summary of federal action on geologic repositories and the many previous efforts to weaken regulatory standards applicable to the project. Then I turn to some of the specific objectionable sections of the bill.

#### BACKGROUND ON GEOLOGIC REPOSITORIES

Efforts to geologically isolate high-level nuclear waste began more than 40 years ago. The National Academy of Sciences in 1957 reported that a number of geologic disposal alternatives were possible, but indicated a preference for disposal in salt. In 1967 the Atomic Energy Commission (AEC) proposed Project Salt Vault, a plan to develop a geologic repository in the Carey salt mine at Lyons, Kansas. This plan was abandoned by the AEC in the early-1970s after the Kansas Geological Survey mounted a strong campaign against the site, pointing out that the area had been subjected to extensive exploratory drilling for oil and gas deposits, and noting that an adjacent salt mine could not account for the loss of a large volume of water used during solution mining of the salt.

In 1974 the Energy Research and Development Agency (ERDA), formed out of the AEC and the predecessor to the DOE, retreated from geological disposal by proposing a Retrievable Surface Storage Facility (RSSF) for interim storage of high-level waste while pursuing geologic disposal at a more leisurely pace. This idea was rejected by environmentalists and the Environmental Protection Agency (EPA) on the grounds that it would delay permanent disposal.

In the mid-1970s it also became clear that commercial spent fuel reprocessing was uneconomical, environmentally unsound and represented a serious proliferation risk. President Gerald Ford refused to subsidize the completion of the Barnwell reprocessing plant, and then President Jimmy Carter pulled the plug on reprocessing. This gave a new urgency to finding a site suitable for geologic disposal of both spent fuel and high-level nuclear waste. In the late 1970s President Carter initiated an Interagency Review Group (IRG) process to solve once and for all the nuclear waste problem in the United States. The IRG process involved numerous scientists, extensive public involvement, and a consultation and concurrence role for the states. The outcome of the IRG effort was a two-track program. The DOE was tasked with the responsibility for identifying the best repository site in the country, and the EPA and the NRC were tasked with developing nuclear waste disposal criteria against which the selection and development of the final repository site would be judged.

#### THE NUCLEAR WASTE POLICY ACT

In 1982, Congress enacted the NWPA, which embodied in law the principal recommendations that grew out of the IRG process, including a commitment to geologic disposal, two repositories, and characterization of three sites before final selection of the first repository. The NWPA established a comprehensive program for the disposal of spent nuclear fuel and high-level radioactive waste (HLW) from the nation's commercial reactors and nuclear weapons complex.

At the time the NWPA was passed nearly 25 years ago, the U.S. Government enjoyed fairly widespread support from within the Congress, the environmental community and state governments for the site selection and development process proposed by the IRG. Now, twenty years later the U.S. Government has little, if any, support from the State of Nevada, and virtually no public support from the environmental and public health community for the Yucca Mountain project.

## WHAT WENT WRONG?

A whole host of things, but suffice to say that over the last twenty years, a substantial segment of the environmental community believes the process of developing, licensing, and setting environmental and oversight standards for the proposed repository have been, and continue to be rigged or dramatically weakened to ensure the licensability of the site rather than provide safety for the length of time the waste is dangerous. This bill, S. 2589, is yet another example of that continuing effort. The site selection process and the radiation standards are examples that illuminate this perspective.

## SITE SELECTION

First, DOE and then the Congress corrupted the site selection process. The original strategy contemplated DOE choosing the best four or five geologic media, then selecting a best candidate site in each media alternative, then narrowing the choices to the best three alternatives, and then picking a preferred site for the first of two repositories. Site selection guidelines were strongly criticized as DOE was accused of selecting sites that they had previously planned to pick. In May of 1986 DOE announced that it was abandoning a search for a second repository, and it had narrowed the candidate sites from nine to three, leaving in the mix the Hanford Reservation in Washington (in basalt), Deaf Smith Co., Texas (in bedded salt) and Yucca Mountain in Nevada (in unsaturated volcanic tuff).

All equity in the site selection process was lost in 1987, when the Congress, confronted with a potentially huge cost of characterizing three sites, amended the NWPA of 1982, directing DOE to abandon the two-repository strategy and to develop only the Yucca Mountain site. At the time, Yucca Mountain was DOE's preferred site. The abandonment of the NWPA site selection process led directly to the loss of support from the State of Nevada, diminished Congressional support (except to ensure that the proposed Yucca site remains the sole site), and less meaningful public support for the Yucca Mountain project.

## RADIATION STANDARDS

The second track of the process has, if possible, fared worse. Section 121 of the NWPA of 1982 directs EPA to establish generally applicable standards to protect the general environment from offsite releases from radioactive materials in repositories and directs the NRC to issue technical requirements and criteria. Unfortunately, it has been clear for years that the projected failures of the geologic isolation at Yucca Mountain are the determining factor in EPA's standards.

EPA has repeatedly issued standards that are concerned more with licensing the site than establishing protective standards. EPA's original 1985 standards were vacated in part because the EPA had failed to fulfill its separate duty under the Safe Drinking Water Act; 42 U.S.C. § 300h, to assure that underground sources of water will not be "endangered" by any underground injection. *Natural Resources Defense Council v. Environmental Protection Agency (NRDC v. EPA)*, 824 F.2d 1258 (1st Cir. 1987).

EPA's second attempt at setting standards that allow for a projected failure of geological isolation was again vacated, this time by the United States Court of Appeals for the D.C. Circuit. The D.C. Circuit found that EPA's Yucca Mountain rule (and the corresponding NRC standard), which ended its period required compliance with the terms of those rules at 10,000 years was not "based upon or consistent with" the recommendations of the National Academy of Sciences ("NAS") as required by the 1992 Energy Policy Act and therefore must be vacated. *Nuclear Energy Institute, Inc. v. EPA*, 373 F.3d 1251 (2004).<sup>1</sup>

Giving significant deference to the agency, the D.C. Circuit did not vacate EPA's strangely configured compliance boundary for the Yucca Mountain site. See Appendix A\* to this testimony for a map of EPA's compliance boundary (inside the oddly

<sup>1</sup> In August 1995, the National Research Council of the NAS published the study referenced under section 801 of the Energy Policy Act of 1992, entitled *Technical Bases for Yucca Mountain Standards* ("NAS Report"). Among other findings, the NAS Report found that it would be scientifically unsupportable for the EPA to limit the period of performance for its Yucca Mountain site standards to the 10,000-year period used in its generic standards under 40 C.F.R. Part 191. Concluding that peak radiation risks at the Yucca Mountain site were likely to exceed that time limitation, the NAS panel recommended that the standards for individual risk apply at the time of peak doses. *Id.* at 55. Drawing on its own prior research, the NAS Report instructed EPA that adopting the 10,000-year limitation "might be inconsistent with protection of public health." *Ibid.*

\*Appendix A has been retained in committee files.

drawn line, the repository need not protect water quality and radiation can leak in any amount). The dramatically irregular line that represents the point of compliance has little precedent in the realm of environmental protection, and its shape is perhaps more reminiscent of gerrymandered political districts. Rather than promulgate protective groundwater standards, EPA pieced together a “controlled area” that both anticipates and allows for a plume of radioactive contamination that will spread several miles from the repository toward existing farming communities that depend solely on groundwater and perhaps through future communities closer to the site.

EPA’s next proposed and revised rule, issued in 2005, retains the 15 millirem/year and groundwater standards for the first 10,000 years, but then establishes 350 millirem/year standard for the period after 10,000 years and does away with the groundwater standard entirely. This two-tiered standard fails to comply with the law and fails to protect public health, especially if the repository’s engineered barriers were to fail earlier than DOE predicts. But fundamentally, NRDC’s objection to EPA’s proposed is *not* a dispute about what happens between the years 10,000 and 10,001 after the repository is opened for business. Rather, EPA has once again proposed a rule that allows for faulty geologic isolation rather than setting a protective standard that will ensure the waste is isolated for the length of time it is dangerous.

#### SPECIFIC COMMENTS ON S. 2859

Turning to the bill before the Committee, we comment on three primary areas: the severe dilution of NRC licensing procedures, the blanket preemption of state environmental regulation, and the codification of the “waste confidence” rule.

##### *1. Dilution and Limiting NRC Licensing Authority*

The licensing process for the repository, though not without its flaws, still retains portions of the original, coherent vision of the NWA in licensing an unprecedented project that must last for tens of thousands of years. There is opportunity for a careful, deliberative adjudicatory process in licensing the project.

For example, under current law, the NRC will use formal adjudicatory rulemaking procedures to (1) license DOE to construct the repository; and (2) license DOE to receive and possess nuclear waste at the repository. Under the construction license, the NRC must grant a permit for the entirety of the proposed facility, i.e. “both surface and subsurface areas at which high-level radioactive waste and spent nuclear fuel handling activities are conducted.” Along with this, the NRC has strict licensing authority over the entirety of the complex. Statutory limits are placed on the repository, such as a 70,000 metric ton cap on the amount of waste. And under the NRC’s current rules, “DOE may not begin construction of a geological repository operations area at the Yucca Mountain site unless it has filed an application with the Commission and has obtained construction authorization.” If DOE fails to comply with this requirement, the NRC may deny DOE a license. And finally, the National Environmental Policy Act (NEPA) remains fully applicable to federal actions related to the site. If followed carefully and deliberately, this current legal framework could lead to a decision on the site the public could accept.

##### *Section 4 of S. 2859 Undercuts Protective Standards and Applicable Environmental Law*

If enacted into law, Section 4 of S. 2859 would dramatically undercut the current legal framework by removing meaningful NRC oversight and compliance with NEPA. First, Section 4(b)(2) of the bill does away with transparent, deliberative proceedings and requires the NRC to use “expedited, informal” procedures (which limit discovery and NRC’s ability to ensure safety) with respect to the authorization to receive and possess nuclear waste at the repository or “to undertake any other action concerning the repository.” It also requires the NRC to act on any application within one year after the application has been filed. In a June 30, 2006 letter from NRC Commissioner Diaz to Congressman Porter of the U.S. House of Representatives, Committee on Government Reform, the NRC stated that it believes such a standard to be “unachievable.” We believe the standard is not only “unachievable,” but limiting discovery and weakening the oversight process is unwise as it further degrades the transparency and rigor needed for licensing a one-of-a-kind nuclear waste repository that will be dangerous for hundreds of thousands of years. And if, as is quite likely, the DOE license application is inadequate and incomplete and the NRC must respond within one year, do the authors of this bill really mean to say that the NRC can only reject the application and rule that Yucca Mountain cannot be used?

Undercutting NRC authority continues. Section 4 of the bill eliminates the need for DOE to include in its license application any “information regarding any surface facility other than surface facilities necessary for initial operation of the repository.” Such a rewrite removes the NRC from any meaningful regulation of surface facilities, including any proposed facilities built for the interim storage of nuclear waste—an act that could essentially make the use of the repository a *fait accompli*, regardless of the outcome of the construction license. Section 4 also authorizes DOE to “undertake infrastructure activities,” on its own, without NRC approval and even *before*, the NRC authorizes construction of the repository, if DOE finds the activity “necessary or appropriate.” This provision sets the stage for creating an interim storage facility at Yucca Mountain and allows DOE to commence huge transportation projects without meaningful NRC oversight.

Ignoring the years and millions of dollars spent on modeling the facility for a prescribed amount of waste, Section 4(b)(2) eliminates the 70,000 metric ton repository limit. Ostensibly, this is to (1) allow for all of the waste from the current generation of nuclear power plants (and perhaps some relatively larger but still inadequate portion of the repository for defense HLW) and (2) “postpone indefinitely the need to initiate a second repository program.” In reality, this section takes no notice of the years of modeling that have demonstrated that the proposed repository may not be able to adequately isolate 70,000 metric tons of waste, much less two or three times that amount.

The bill undercuts the application of NEPA to the site as well. Section 4(b)(2) commences with the appropriate statement that DOE must “comply with all applicable requirements under the National Environmental Policy Act of 1969 . . . with respect to an infrastructure activity,” but then waives the requirement that DOE “consider the need for the action, alternative actions, or a no-action alternative.” The discussion and presentation of alternatives and options to mitigate environmental harm is the heart of the NEPA process and to waive those obligations is to do violence to the law.

Section 4(c) requires other federal agencies to adopt DOE’s EIS “to the maximum extent practicable”; which will have the effect of halting other federal entities from complying with NEPA with respect to Yucca Mountain. This runs counter to well-established federal law as NEPA’s implementing regulations encourage agencies to adopt EISs authored by sister agencies, but only if the reviewing agency finds, after an “independent review of the statement,” that the EIS in question “meets the standards for an adequate statement.” 40 C.F.R. § 1506. NRDC can point to numerous examples where federal agencies have responsibly disagreed with one another over the environmental impacts of a major federal action, and it is wrong to relieve federal agencies of their NEPA obligations in order to increase the likelihood of licensing Yucca Mountain.

And finally, Section 4(c) relieves the NRC of the obligation to consider under NEPA any “action connected or otherwise relating to the repository, to the extent the action is undertaken outside the geologic repository operations area and does not require a license from the Commission.” Broadly read, such an exemption would allow NRC to avoid any NEPA review of DOE transportation projects and even facilities that may be used to transition the site toward an interim storage facility were DOE to argue such work is outside geologic repository operations areas or related to infrastructure activities that do not require NRC license.

## 2. Preempting State Environmental Regulation

Under current law, the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6901 et seq., prohibits the treatment, storage, or disposal of hazardous waste at DOE facilities (and at all other private or federal facilities) without an EPA or State permit. Certain radioactive materials are excluded from the definition of hazardous waste under RCRA, but EPA or a delegated state may regulate the hazardous constituents in the waste that contains both hazardous and radioactive constituents (i.e., mixed waste). See *L.E.A.F. v. Hodel*, 586 F.Supp. 1163 (D.Tenn. 1984). This issue of mixed waste has broad and important application to DOE facilities. State regulation of mixed waste has been one of the key drivers in ensuring that the DOE cleans up the radioactive and toxic legacy of the nuclear weapons complex.

Section 6 of S. 2589 nullifies the application of hazardous waste laws at Yucca Mountain, and if the provision is read broadly, it could nullify state oversight of a great deal of mixed waste at DOE generator sites. Specifically, Section 6(a), in pertinent part, bars the application of any part of RCRA § 6001(a) from “applying to any material owned by the Secretary if the material is transported or stored in a package, cask, or other container that the Commission has certified for transportation or storage of that type of material; or any material located at the Yucca Mountain

site for disposal if the management and disposal of the material is subject to a license issued by the Commission.”

This is a dramatic exemption. RCRA 6001(a) states in pertinent part:

Each department, agency and instrumentality of the executive, legislative, and judicial branches of the Federal government . . . engaged in any activity resulting, or which may result, *in the disposal or management of solid waste or hazardous waste shall be subject to, and comply with, all Federal, State, interstate and local requirements, both substantive and procedural* (including any requirements for permits or reporting or any provisions for injunctive relief) respecting control or abatement of solid waste or hazardous waste disposal in the same manner, and to the same extent, as any person is subject to such requirements . . . *Neither the United States, nor any agent, employee, or officer thereof, shall be immune to or exempt from any process or sanction of any State or Federal Court with respect to the enforcement of any such injunctive relief.*

42 USC § 6961 (emphasis added).

Thus, under S. 2589, any waste “owned” by DOE that is “transported or stored in a package, cask, or other container that the Commission has certified for transportation or storage of that type of material” is exempt from “all Federal, State, interstate and local requirements, both substantive and procedural (including any requirements for permits or reporting or any provisions for injunctive relief) respecting control or abatement of solid waste or hazardous waste disposal.” Such an exemption could include not just waste DOE plans to send to Yucca Mountain (and thus ending Nevada’s RCRA authority over the mixed portion of the waste), but even mixed waste at DOE generator sites where DOE manages that waste in containers that the NRC has certified for storage or transportation. Properly used, DOE could game the system and obtain a complete cradle-to-grave exemption for some undefined portion of mixed waste and highly contaminated DOE sites around the country.

In short, any application of state law to DOE mixed waste could be potentially preempted, ignoring decades of established state prerogatives to protect public health and the environment.

Section 6(b) in essence amends the Clean Air Act, 42 U.S.C. § 7401 et seq in a discriminatory manner, only applicable to Nevada by taking away state and local government air permitting authority. NRDC also strongly opposes that provision.

And finally, Section 7 of S. 2589 would abolish state, local and tribal government transportation authority over the shipment of spent nuclear fuel by highway and rail from around the country to Yucca Mountain, and gives this authority to DOE. Specifically, this provision would eliminate any decision or appeal by non-federal (and mostly non-DOE) jurisdictions on highway transport. The provision does this in two ways. First, it puts issues that are regulated now by the Hazardous Materials Transportation Authorization Act of 1994, such as the ability of states to designate alternative highway routes, under the jurisdiction of DOE as regulated by the Atomic Energy Act. Second, it gives the Secretary of Energy the ability to ask the Secretary of Transportation to preempt any state, local or tribal requirements, for example time of day restrictions.

This provision directly contradicts the February 2006 National Academy of Sciences (NAS) report on nuclear waste transportation that advocated a central role for state and tribal governments. According to DOE, shipments to Yucca Mountain will affect 45 states, 700 counties, and 50 Native American tribes. As many as 120 million people live in the counties that would be crossed by rail and truck routes and between 8 million and 11 million people live within half a mile of a potential truck or rail route to the site. The NAS study concluded that a successful transportation program requires the active involvement of other federal agencies, including the NRC, the Department of Homeland Security, and the Department of Transportation, “in strict adherence to regulations.” The NAS found that states and tribal governments must also play a central role in any waste transportation program. In particular, the report found that “state- and tribal-supplied information on local transport conditions is an essential element in route selection decisions.” Relieving states, tribes and local government’s of their transportation authority is unwise and will further diminish public acceptance of the project.

### 3. Codifying the Potential Fiction of the Waste Confidence Rule

The issue of whether or not the availability of permanent geologic disposal should factor into the NRC licensing of commercial nuclear power plants has been with us for decades. As I explain below, a compromise on how the issue would be addressed in a scientific and publicly acceptable manner was reached over twenty years ago.

Section 9 of S. 2589 would undo that compromise and seeks to codify what very well may be a fiction. This is an inappropriate exercise of legislative power over a matter that should be left up to the licensing body, the NRC, and the continued advancement of science as we learn more about how to dispose of nuclear waste in a manner that does not leave the risk to future generations.

In June of 1977, the NRC denied NRDC's petition for (1) a rulemaking proceeding to determine whether high-level radioactive wastes generated in nuclear power reactors can be permanently disposed of without undue risk to public health and safety; and (2) withholding of action on pending and future applications for operating licenses for nuclear power reactors until such time as an affirmative determination has been made. We then petitioned the United States Court of Appeals for the Second Circuit to review the NRC decision. The 2nd Circuit found in part:

it is neither necessary nor reasonable for the Commission to insist on proof that a means of permanent waste disposal is on hand at the time reactor operation begins, so long as the Commission can be reasonably confident that permanent disposal (as distinguished from continued storage under surveillance) can be accomplished safely when it is likely to become necessary. Reasonable progress towards the development of permanent disposal facilities is presently being accomplished. Under these circumstances a halt in licensing of nuclear power plants is not required to protect public health and safety.

582 F.2d 166, 169 (2nd Cir. 1978). And so it was in 1978.

In a parallel action only one year later, the State of Minnesota challenged an NRC decision granting two operators of nuclear plants amendments to licenses to expand on-site spent fuel storage without first determining whether the federal government could permanently dispose of the nuclear waste. The United States Court of Appeals for the D.C. Circuit held that NRC could properly consider the complex issue of nuclear waste disposal in generic proceedings such as a rulemaking and then apply its determinations in subsequent adjudicatory proceedings, noting the NRC's "reasonable assurance" a permanent solution would be found. *Minnesota v. NRC*, 602 F.2d 412, 416 (D.C. Cir. 1979). However, the D.C. Circuit remanded the matter before the particular parties to the NRC for further proceedings to determine whether those reasonable assurances existed. *Id.* at 419.

These cases gave rise to the NRC's "waste confidence" rulemaking. In 1984, after varying rounds of development, the NRC made the five following findings that constituted the waste confidence rule:

(1) *The Commission finds reasonable assurance that safe disposal of high level radioactive waste and spent fuel in a mined geologic repository is technically feasible.*

(2) *The Commission finds reasonable assurance that one or more mined geologic repositories for commercial high-level radioactive waste and spent fuel will be available by the years 2007-09, and that sufficient repository capacity will be available within 30 years beyond expiration of any reactor operating license to dispose of existing commercial high level radioactive waste and spent fuel originating in such reactor and generated up to that time.*

(3) *The Commission finds reasonable assurance that high-level radioactive waste and spent fuel will be managed in a safe manner until sufficient repository capacity is available to assure the safe disposal of all high-level radioactive waste and spent fuel.*

(4) *The Commission finds reasonable assurance that, if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least 30 years beyond the expiration of that reactor's operating licenses at that reactor's spent fuel storage basin, or at either onsite or offsite independent spent fuel storage installations.*

(5) *The Commission finds reasonable assurance that safe independent onsite or offset spent fuel storage will be made available if such storage capacity is needed.*

49 Fed. Reg. 34659 (Aug. 31, 1984) (emphasis added).

The NRC last revised the waste confidence rule in 1990, when it amended the second and fourth findings as follows:

Finding 2: *The Commission finds reasonable assurance that at least one mined geologic repository will be available within the first quarter of the twenty-first century, and that sufficient repository capacity will be available within 30 years beyond the licensed life for operation (which may include the term of a revised or renewed license), of any reactor to dispose of the commercial high-*



level radioactive waste and spent fuel originating in such reactor and generated up to that time.

Finding 4: The Commission finds reasonable assurance that, if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least 30 years beyond the licensed life for operation (which may include the term of a revised or renewed license) of that reactor at its spent fuel storage basin, or at either onsite or offsite independent spent fuel storage installations.

55 Fed. Reg. 38474 (Sept. 18, 1990) (emphasis added).

It is now 2006 and the Yucca Mountain process has been fraught with problems—among them massive cost overruns, a finding of moderate to weak technical support from the Nuclear Waste Technical Review Board, falsification of quality assurance data, and continuing litigation over weakening the applicable human health and environmental standards. Section 9 of S. 2589, would require the NRC “deem, without further consideration, that sufficient capacity will be available in a timely manner to dispose of spent nuclear fuel and high-level radioactive waste resulting from the operation of the reactor and related facilities.”

Such a provision would stand the NRC’s waste confidence rule on its head and run counter to the D.C. Circuit’s careful designation of where scientific expertise should reside. Discussing the 2nd Circuit opinion in *NRDC v. NRC*, the D.C. Circuit noted:

We do not read that opinion, however, to hold as a matter of law that storage and disposal concerns are never relevant to the licensing of nuclear plants. Rather, as the NRC itself recognized, Congress has chosen to rely on the NRC’s (and its predecessor’s) assurances of confidence that a solution will be reached. *There is no implication that Congress intended that the NRC ignore new knowledge or analysis in its licensing decisions.* As the Supreme Court implicitly recognized by remanding for a review of the sufficiency of the S-3 evidence in *Vermont Yankee*, this court does not exceed its judicial province by inquiring into the basis of those assurances of confidence. As Commission counsel rightly notes, *it is for the Commission to decide the ultimate question of certainty implicit in health and safety judgments and to resolve technical disagreements*, but that is not to say that these matters are totally immune from judicial review.

602 F.2d at 419 (emphasis added and citations omitted).

Congress should not be deciding issues of ultimate certainty in health and safety judgments, nor should it be resolving technical disagreements with the stroke of a pen. To allow the waste confidence rule to be thus legislated into permanent existence does away with any concerns about relative amounts of nuclear waste that can be produced and disposed of, and all the concomitant matters that must be resolved. Without hearing, scientific debate, or any meaningful inquiry into a problem that will last for tens of thousands of years, this bill proposes to codify that an adequate geologic repository to isolate nuclear waste is a certainty. If the technical and legal disputes of the last twenty years have taught us anything, it is that very little to do with Yucca Mountain is a certainty. To enact Section 9’s waste confidence presumption would only serve to further validate the widely held view that federal efforts on the Yucca Mountain project have been about making sure the site is licensed, regardless of its scientific or technical merits.

#### CONCLUSION

The legislative history of the NWPA of 1982 includes the following admonition:

The Committee strongly recommends that the focus of the Federal waste management program remain, as it is today, on the development of facilities for disposal of high-level nuclear waste which do not rely on human monitoring and maintenance to keep the waste from entering the biosphere.

This wise legislative direction has been ignored over the past several years. A central problem with the process for developing a geologic repository, and especially Yucca Mountain, has been that the site conditions have driven the standard. We observed this years ago when EPA abandoned its collective dose standard when it appeared that Yucca Mountain could not meet it. We observed this in 2001 when DOE placed all its hopes on engineered barriers rather than the geology of the site. We observed this again in 2001 when EPA limited the period of compliance to 10,000 years and gerrymandered the area of site compliance to allow for a massive (and

diluting) spread of radioactive contaminants, and we're observing the same dynamic now with S. 2589. It is essential that this not continue.

The bill before this Committee is just another symptom of what has been going wrong with the program for nearly two decades. From a technical stand point, the current analysis appears to show: a) well designed canisters may be able to safely sequester the waste for several hundred or a few thousand years, but not nearly the length of time the waste will be dangerous; b) there is not a great deal of water flowing through Yucca Mountain; but c) the repository leaks like a sieve. Ultimately, it is apparent that the proposed repository will not keep nuclear waste out of the biosphere.

If we are ever to have a robust repository program that both follows the original intent of the NWPA and gains the trust of the American public, then the federal government, in both its executive and legislative incarnations, must cease efforts to weaken meaningful and protective health and environmental standards applicable to the program.

Thank you for allowing me to testify and I look forward to your questions.

The CHAIRMAN. Thank you very much.

Now, what we're going to try to do, to accommodate you in the best way, the vote is just about up. We're going to leave and we're going to vote, and I think the way we're going to arrange it, we'll have a minimal amount of time on the floor and return, and we'll put you back there and we'll each have some questions. So if you'll wait, we'll appreciate it greatly. Thank you very much.

We stand in recess until our return from voting.

[Recess.]

The CHAIRMAN. I think we have adequate time now to take a few questions, and what we don't get completed, we'll submit. What we submit, we'll ask you to answer as expeditiously as you can.

I'm going to start by asking if Senator Bingaman has any questions. Senator Craig, we'll ask if you have any, and then I will follow up.

Senator BINGAMAN. Thank you very much, Mr. Chairman. Thank you all for being here.

Let me start with a couple of questions for you, Mr. Sproat. I understood your testimony where you said that if we don't enact this legislation, your ability to meet this schedule that you laid out is zero, I believe you said.

Mr. SPROAT. That's correct.

Senator BINGAMAN. But I'm not clear what in this legislation relates to your ability to file the license application on time. Will the enactment of this legislation allow you to file it sooner? Is that what you're contending? Or is it not related to the timing for your filing of that application?

Mr. SPROAT. Senator, this legislation is not related to the filing of the license application itself. Assuming that the program receives essentially the President's requested budget funding for fiscal year 2007 and fiscal year 2008, even without this legislation I will make that milestone of submitting that license application by June 2008.

What we did, though, as we were trying to put together the schedule, to really answer the requirements of the Congress to put together a credible schedule for the project, we took a look at all of the issues that were out there that we had identified, that would impact the ability to open Yucca Mountain: land withdrawal, water rights, and the other issues we have put in there. And so we said based on our looking at this project at this time, this is what we need. This is what we think makes sense to allow us to move for-

ward with the project, with an aggressive schedule to get it open as soon as possible.

Senator BINGAMAN. Section 4(b) of this proposed legislation authorizes the Department of Energy to “undertake infrastructure activities” at Yucca Mountain without NRC approval.

Mr. SPROAT. Yes.

Senator BINGAMAN. Could you specify what infrastructure activities that authorizes, in your view? Does it authorize the construction of the railroad? Does it authorize interim storage facilities? What else?

Mr. SPROAT. This legislation does not authorize any of those. What it does, its intent is to clarify the regulatory regime under which the approval that the Department needs to get to execute those projects would be received. And let me just give you an example.

When we talk about infrastructure at the site, we’re talking about roadways, we’re talking about water systems, we’re talking about electrical power systems. We’re not talking about building any permanent safety-related systems, structures, or components which would require an NRC construction license.

[Clarification from the Department of Energy: On page 62 of the transcript, line 3, and page 79, line 20, Senator Bingaman asked if the proposed legislation S. 2589 entitled the “Nuclear Fuel Management and Disposal Act” would authorize the construction of the railroad. The proposed legislation does not authorize construction of the rail line to Yucca Mountain, it merely clarifies that receipt of the repository construction authorization from the Nuclear Regulatory Commission is not a prerequisite for commencing construction of the rail line. The Department still would need to comply with all applicable legal requirements, including those established by the National Environmental Policy Act, in order to proceed with construction and operation of the rail line.]

Senator BINGAMAN. What about an interim storage facility?

Mr. SPROAT. There is nothing in this legislation that would allow us to build an interim storage facility at Yucca Mountain. We have not requested that.

Senator BINGAMAN. And nothing that would allow you to build the railroad that I’ve mentioned?

Mr. SPROAT. No. This would be—I’m trying to be very clear that the railroad is what’s considered as a connected activity to the Yucca Mountain repository. And what we want to make clear is that any environmental reviews of that railroad would be conducted under EPA regulations, not NRC, as connected activities, and that’s what we’re trying to get clear.

Senator BINGAMAN. Section 5 of your proposed bill allows the Department of Energy to use money in the Nuclear Waste Fund for “infrastructure activities.”

Mr. SPROAT. Yes.

Senator BINGAMAN. As I understand the Nuclear Waste Policy Act that’s already on the books, it authorizes the use of the fund for facilities that are “necessary or incident to” the repository and to the transportation of waste for disposal at the repository, so I’m not clear. What does section 5 authorize you to use Nuclear Waste Fund monies for that is not already authorized by the Nuclear Waste Policy Act?

Mr. SPROAT. As I understand it, when the Department reviewed the existing Nuclear Waste Policy Act and looked at areas that

were in contention in the past—and one of the issues, one of the areas that has been in contention in the past is the allowed uses of the Nuclear Waste Fund associated with Yucca Mountain. For example, there has been litigation and case law about how could the Nuclear Waste Fund be used for interim storage, either onsite at utilities or offsite at another location?

So this was an attempt to remove some ambiguities, at least as viewed by some people, around clarifying that the Nuclear Waste Fund could be used not only for constructing the repository but the infrastructure associated with the repository and the transportation systems needed to get the fuel from the plants to the repository.

[Clarification from the Department of Energy: On page 63 of the transcript, line 11, Senator Bingaman questioned what authority the proposed legislation provides the Secretary as it relates to the use of the Nuclear Waste Fund that is not already authorized under the Nuclear Waste Policy Act. The proposed legislation would not expand the activities for which the Nuclear Waste Fund may be used. It would clarify, however, that “infrastructure activities” are included in the set of activities for which the Nuclear Waste Fund currently can be used. The proposed legislation does not identify interim storage as an infrastructure activity.]

Senator BINGAMAN. So the interim storage facilities that would be decided upon would be an appropriate use under this new language, whereas that was not clear before?

Mr. SPROAT. I don't want to say that. I wouldn't say that, Senator. Let me make that clear. First of all, we're not asking for interim storage authority in this legislation.

Senator BINGAMAN. I understand that.

Mr. SPROAT. And we're not including interim storage capability as part of infrastructure as we're defining it here. The issue of whether or not the Nuclear Waste Fund could be used for interim storage I think is—quite frankly, I just don't know what the current case law is regarding the acceptability of use for that. I know that that has been the subject of—

Senator BINGAMAN. But are you saying that if we pass this proposed bill, that will be clarified—

Mr. SPROAT. Yes.

Senator BINGAMAN [continuing]. That those funds will be usable for interim storage?

Mr. SPROAT. No. That point would not be clarified because we're not asking for interim storage capability or authority under this legislation. This is for what I call the auxiliary infrastructure around Yucca Mountain: the roads, the water, the electricity, that type of thing.

Senator BINGAMAN. If the Congress were to enact the spent fuel storage provisions that are in the Energy and Water Appropriation bill that's coming to the Senate floor at some stage, how would that affect, if at all, your schedule for work on this repository?

Mr. SPROAT. It would depend on a couple different factors. One would be if the responsibility to site and build those facilities would come into my organization. Clearly that would divert a lot of management attention and technical attention away from the Yucca Mountain project, if we were given that responsibility, and I have no idea whether that would come to us or to a different part of the Department.

The second issue would be regarding the impact on the Waste Fund, and depending on how that interim storage capacity and capability was designed, built, how many different facilities were to be built, and if that was to be funded by the Waste Fund, as I believe the appropriations language currently reads, the financial impact on the long-term viability of the Waste Fund would have to be looked at. We just haven't looked at that yet.

Senator BINGAMAN. My time is up. Mr. Chairman, thank you.

The CHAIRMAN. Senator Bingaman, your last questions had to do with the appropriations bill?

Senator BINGAMAN. Just that last question, yes.

The CHAIRMAN. That last question, yes. Thank you.

Senator Craig.

Senator CRAIG. Thank you, Mr. Chairman. Let me make an observation and then I'll ask one question.

Within the last couple of months oil has surged to \$75 a barrel, gas has soared to \$3.25. I was out Tuesday evening filling my car at \$3.25 a gallon. I guess that's the bad news, but ironically enough, in that we have found some good news.

Mr. Chairman, gas prices soared to \$3 a gallon and this week you, the Senate, we passed a bipartisan piece of legislation to allow drilling in an area that a year ago was totally and politically off limits to touch, out in the gulf; something that a year ago, if we had been debating EAct on the floor and that were an issue within it, there would have been an amendment to block it, it might have passed.

It has been an extremely hot few weeks that we're now into. PEPCO just announced that it had metered the largest amount of use of power in this region in its history yesterday. Is that good news or bad news?

What I am trying to suggest to this committee and for the record, Mr. Chairman, is that times change and situations change, and right now we're struggling with the reality of this country awakening to our failure to bring about the levels of energy that it expects and it needs.

And because of the two of you, and I mean that most sincerely, last year with the very forward-looking effort that you produced in EAct, we are now having more movement toward getting this country back into production than we ever have, and part of that is nuclear, a very large part of that. Twenty-five reactors on the drawing boards. A year ago we couldn't have even dreamed of that happening, but it's out there today.

And, as a result of that, I'm suggesting that the circumstances of today are changing the political realities of tomorrow. Circumstances of the last 12 months changed the political reality on the floor of the U.S. Senate just this week. Mr. Chairman, you were far-sighted enough to grab that opportunity and move us in the right direction and build a majority to do that.

As we march down this road toward a greater nuclear future for our country, I'm extremely concerned about the issue at hand that is reflective of where we go with licensing, and the issue of waste confidence and how we get there, and what's real and what isn't real, and what is expected of us, and more importantly what the public and the interests involved expect.

The minority leader was just before us a few moments ago and he ultimately said no to Yucca Mountain. Can we write legislation then, Mr. Chairman, that says that the Congress is convinced that there will be a solution to nuclear waste? I think we can, but that's a struggle, and we all know that. I don't know if tomorrow or if next year the answer will move from no to maybe on the part of the minority leader, but I doubt it. But clearly I think the public, if they are saying no today, after this summer will be ready to say maybe.

\$3 gas changed the politics on the floor of the Senate this week. Unprecedented heat across America today and yesterday and the last couple of weeks, and an unprecedentedly hot summer around the world, I think are going to allow some of our environmental friends who are concerned, as most of us are, about climate change, to be much more willing to work with Congress in a positive and productive way to resolve the issue and to make sure that we have a clear path forward.

I am suggesting that in what has been proposed to us in the bill that we have before us today is something that we have to work on in a very progressive fashion, and I applaud your leadership, Mr. Chairman, not only in finding a permanent geologic repository but pushing ahead the reprocessing that is necessary in the long term. And in the long term reprocessing has a waste stream, and that will have to go somewhere. That may be an opportunity that even the Governor of Nevada would see as less threatening than he sees it today, as expressed by his representative before the committee.

So what I think you're doing and what I appreciate you doing for our future energy needs is to have both the Congress ready and the issues ready, because the public attitudes are changing out there as America tries to figure out what went wrong and why all of a sudden they're having to reallocate their personal household budgets beyond where they thought they would have to go.

With that, my question, and I ask this of the panelists: Lack of waste confidence is seen by the industry as a potential impediment in licensing new nuclear reactors. Do you believe that legislating waste confidence will be enough to license new reactors, or do you think it is important for Yucca Mountain to be a more certain path in that combination of issues?

Mr. BEASLEY. If I could, Senator, I'd like to begin with that question.

Senator CRAIG. Mr. Beasley.

Mr. BEASLEY. From an industry point of view, I think it's going to take two things. First of all, this bill I think makes a very positive step in the direction of waste confidence, but I also think that we need to couple that with significant progress, sufficient progress toward bringing Yucca Mountain to fruition, toward bringing Yucca Mountain to the final repository that we have said it was going to be since 1982.

Mr. SPROAT. I would say the Department agrees with Mr. Beasley on this point, exactly.

Senator CRAIG. I didn't hear you.

Mr. SPROAT. I would say the Department agrees with Mr. Beasley on this point, exactly. It requires both.

Senator CRAIG. Anyone else wish to comment on that question? If not—yes?

Mr. FETTUS. Senator, thank you. The problem that we have with S. 2589's deeming that the waste confidence rule is now essentially codified and in law, what it would do, it would essentially say Congress says there will be this, X. And that codifies something that may be true, or it codifies what may be a fiction. We don't know. But it takes it out of the hands of any scientific or potential debate or new analysis.

In the original decision that elicited the waste confidence rule-making by the NRC, the D.C. Circuit very, very carefully did not insert itself into matters that were beyond its technical competence. It said Congress has decided to trust these technical disputes to the NRC, and they remanded it back to the agency to deliberately and carefully go forward.

Senator CRAIG. What issue was that? What case was that?

Mr. FETTUS. This case was, the original case, I'm giving you the cite, was a Minnesota case, the State of Minnesota versus the NRC, and I will provide your staff with the cite promptly after the hearing. It was a 1979 case. Sorry, 602 F.2d at 412. And it was a D.C. Circuit case.

The CHAIRMAN. What's the purpose of your discussion in that regard? What were you telling us?

Mr. FETTUS. I'm telling you that the good Senator was asking what kind of confidence do you need, and I'm saying Congress shouldn't be in the business of arbitrarily providing that confidence. That confidence should remain where it is right now, with the NRC looking at the science and making a decision.

Senator CRAIG. Okay. Thank you, Mr. Chairman. Gentlemen, thank you. Oh, excuse me. Yes, Mr. Virgilio?

Mr. VIRGILIO. Thank you, Senator. I would just say, on behalf of the NRC, we believe that Congress has the information, the capacity, and the opportunity and authority to make the decision on waste confidence. The basis that we see in section 9 of the legislation is consistent with some of our own staff thinking, and we would not object.

Senator CRAIG. Thank you.

Mr. LOUX. Senator, I guess we would like to associate ourselves with Mr. Fettus' remarks. We believe it's better left to the agency that knows best about health and safety, and not the Congress.

Senator CRAIG. My only comment back to you on that statement, and I say this in as nice a way as I can.

Mr. LOUX. I'm sure.

Senator CRAIG. I don't know that you have credibility before this committee. Your job description is such, and you so stated it before the committee last time, your purpose is to kill Yucca Mountain, period.

Mr. LOUX. True.

Senator CRAIG. In that status, can you have any objectivity at all? I doubt it, because you have a mission.

Mr. LOUX. Certainly as much as anyone who is advocating it, Senator.

Senator CRAIG. I see. Well, that's how I believe your testimony to be. If your mission and your job and your paycheck is for one purpose only, your objectivity is tied to that. Thank you.

Gentlemen, thank you all very much for your testimony as we work our way through this issue. Mr. Chairman, thank you.

The CHAIRMAN. Senator Craig, did Mr. Virgilio respond? He had his hand up. Did he have an answer?

Mr. VIRGILIO. Yes, I did. Thank you, sir.

The CHAIRMAN. I thank you for your comment. I heard what you said. I didn't hear the question. Yes, I understand.

Let me see. I have a lot of questions. I'm going to submit them to you all. But I'm beginning to, the more I look at the cost for interim storage, whether you call it interim storage by virtue of it being a plan for interim storage or whether it's just interim storage because you have not changed it from where it is up alongside a reactor to something else, that time frame is getting longer and longer no matter which plan you talk about, in that the waste is going to be around a long time for people to have to pay for it, and the consumer is the one paying for it now.

That's what prompted us to do something in the appropriation bill, to see if we could move in the direction of something that was not a huge new interim storage that was unachievable, where you had to go out and find three sites and plow up the country, but rather to look at it from the standpoint as we did in the bill.

Mr. Sproat, you know we said that we're going to take it all over and own it, so immediately the consumer is not going to pay for it anymore. We got rid of that, right? The U.S. Federal Government is responsible for that. We took the cap off the trust fund, so we had the trust fund to spend. And then we said let's see if we can move around within States and make some readjustments here and there.

In any event, even if this plan works, which there is more and more negative testimony about whether we could get it done, we're going to be 40 years moving it because we can only move 3,000 tons a year, as a matter of what has been told to us. That's the capacity of the United States, on its railroads and other things, to move it. Is that a correct statement?

Mr. SPROAT. I believe it is, Senator.

The CHAIRMAN. So that's a long, long time. In my opening remarks, I said we'd still be moving it, if everything went well, and even if we expanded the capacity to 240,000 tons instead of 70,000, we would still be moving it past the year 40, which means it would be in an interim status for a huge, long, long period of time.

Now, Mr. Sproat, as an expert, doesn't that fact that that's going to happen in all events give some life to the notion that recycling is really important?

Mr. SPROAT. Yes, Senator, it does. I believe recycling is very important for a number of reasons. Interim storage, the need for interim storage, when you look at the issue of reducing the Government and the taxpayers' liability associated with nonperformance, is obviously one consideration. Obviously the economics of nuclear power in the future is really, in my mind, is the key driving issue around recycling and making sure we have enough uranium and



enough nuclear fuel to power the future reactors. That's probably the major driver, I would think, in terms of—

The CHAIRMAN. Well, a secondary if not major driver is, you dramatically alter the waste load, too. You don't have the same kind of waste, right?

Mr. SPROAT. No, that's correct, you would not have the same type of waste.

The CHAIRMAN. Much smaller quantity, much smaller in toxicity. You need to establish in between there, which you would have to, a breeder reactor, which I note the distinguished Senator from Nevada today said we probably made a mistake. He was alluding to the breeder reactor. I think he's understanding what's going on here. If we had had the breeder reactor, the Clinch River breeder reactor, we would be looking at a real fix in terms of the technology for changing waste to a much smaller quantity to put in this facility you're licensing.

Mr. SPROAT. Well, the technology to transmute is still somewhat theoretical and undemonstrated, so there's questions of how long that will take to allow us to get the point where we have a commercially viable process that will allow us to transmute and actually come up with a smaller volume out of the waste stream.

And so I just want to make sure that as we look at the issues associated with recycling and interim storage, anticipation of recycling and volume reduction, that it really is an economic discussion that has to be based on the time frames that we can reasonably expect to get to commercially viable processes which allow us to do this, because those processes are not commercially available today.

The CHAIRMAN. Mr. Sproat, you are not correct in what you say. Transmutation, I am not talking about transmutation. I'm talking about the French process using MOX as a source, as a means. That's not transmutation. They are able to handle 3,000 tons a day. By accident, it's the same equivalent amount. You run it through their machine, it comes out as a different process.

Mr. SPROAT. Yes, it does.

The CHAIRMAN. And that process, the thing that comes out there does not require transmutation.

Mr. SPROAT. That's correct, but the volume reduction, significant volume reduction, does require some transmutation.

The CHAIRMAN. Well, the volume reduction can come from reusing that fuel that comes out of that MOX facility, plus having a—

Mr. SPROAT. A chemical process that can—

The CHAIRMAN. Yes, plus a breeder reactor attached onto it. That's not transmutation, and that reduces it dramatically, doesn't it?

Mr. SPROAT. That's correct.

The CHAIRMAN. I think that will be the proposal that will be forthcoming, believe it or not, this year, with the \$250 million that we have appropriated for GNEP, Senator Craig. I think the administration plans to ask for a plan for what you called transmutation, I would call it recycling.

Mr. SPROAT. I understand.

The CHAIRMAN. That would be over on the side. You ought not be objecting.

Mr. SPROAT. Certainly not. I'm not objecting to that at all.

The CHAIRMAN. It doesn't take the place of this, but it sure is an interim storage—it says to interim storage, there may be a solution for that interim storage, for a lot of it, besides Yucca, at some point in time.

Mr. SPROAT. Yes.

The CHAIRMAN. It may go another way.

Mr. SPROAT. That's absolutely correct.

The CHAIRMAN. I think it will. I mean, if it doesn't, we're in bad shape, in my opinion.

Let me see. I had one for Mr. Wright. This week FERC approved a \$16 million increase for the owners of Yankee, a shut-down reactor, to reflect the cost of the spent fuel storage before 2010. I guess you might get that soon. It will cross your desk when you read the news.

In 2004 Yankee Rowe estimated that its damage for government failure to meet its 1998 deadline to move fuel would be \$231 million if Yucca Mountain opened in 2010 and all the fuel moved by 2020. Today we have heard that Yucca will open in 2017. That's the earliest date, and this is just one plant I'm talking about.

Mr. WRIGHT. Yes.

The CHAIRMAN. So, Mr. Wright, today FERC is passing those costs along to the consumer. Is this an acceptable solution? If not, what do you suggest we do about it?

Mr. WRIGHT. Well, Mr. Chairman, I have not read about that yet because I haven't been in the office.

The CHAIRMAN. I hope it's understandable, what I said.

Mr. WRIGHT. I would like to make just a couple of points. In South Carolina already, the Savannah River sites there, I kind of think we know a little bit about what interim storage is, not that we want to be permanent, but we do understand that we do have the waste there.

I think that what you're trying to accomplish is to turn waste into a resource, which we're for. And I believe that the association that I'm speaking for and my State would agree with that, whether it be a MOX facility or any other type, because it would reduce ultimately the waste that would go into Yucca Mountain.

I think that what we're curious about is that while you're talking about the interim storage facilities proposed, there are two facilities that haven't been addressed. One is actually at Yucca, and the second is the private fuel storage facility in Utah, that haven't made the discussion, and we're just curious as to that. We'd like to maybe see some discussion take place there, too.

But for the ratepayer it's all about keeping costs low. That's what it's about, and anything that you, this committee can do and the Congress can do to affect that is going to be well received by utility commissioners and by customers around the country. So, I mean, not to dodge your question specifically about the Maine Yankee thing, but it doesn't have a lot for me in South Carolina.

The CHAIRMAN. All right. I think that some of you asked that your statements be made a part of the record as you talked, and I didn't do it as a matter of record. I'll do that now, for all those statements.

I yield now to Senator Bingaman.

Senator BINGAMAN. Thank you, Mr. Chairman. I just wanted to do a followup question. I asked you, Mr. Sproat, about whether this legislation authorized the construction of this railroad, and I think you said it did not.

Mr. SPROAT. That is correct.

[Clarification from the Department of Energy: On page 62 of the transcript, line 3, and page 79, line 20, Senator Bingaman asked if the proposed legislation S. 2589 entitled the "Nuclear Fuel Management and Disposal Act" would authorize the construction of the railroad. The proposed legislation does not authorize construction of the rail line to Yucca Mountain, it merely clarifies that receipt of the repository construction authorization from the Nuclear Regulatory Commission is not a prerequisite for commencing construction of the rail line. The Department still would need to comply with all applicable legal requirements, including those established by the National Environmental Policy Act, in order to proceed with construction and operation of the rail line.]

Senator BINGAMAN. I'm reading over on page 14 and 15 of the bill, and it seems to me to say very specifically that it does. It says at any time before or after the Commission issues a final decision on an application from the Secretary, under this subsection, "the Secretary may undertake infrastructure activities," and then it goes on to say "including infrastructure activities such as" and the third one down is the construction of a rail line to connect Yucca Mountain with the national rail network.

Mr. SPROAT. Senator, the intent of that section is to make it clear that the environmental review associated with building that railroad is a connected activity associated with licensing Yucca Mountain, and it is not under the purview of the NRC. In other words, we don't need an NRC license to build the railroad, and the NRC doesn't need to conduct the environmental review of the railroad. It is not intended as an authorization to build the railroad.

Senator BINGAMAN. I see.

Mr. SPROAT. That's the intent. I can't speak to whether or not the words are—what they do or don't do, since I'm not an attorney.

Senator BINGAMAN. Okay. Well, we'll need to look at that and be sure that it does not in fact constitute an authorization for construction of the railroad, because I would read it the other way right now, but I appreciate that.

That's all I had. Thank you very much.

Senator CRAIG [presiding]. There are no further questions from those of us of the committee, and we thank all of you again for being with us. We will be submitting some questions to you for response in writing, for the record, and again we thank all of you for your focus on this issue.

With that, the committee will stand adjourned.

[Whereupon, at 12:28 p.m., the hearing was adjourned.]

[The following statement was received for the record:]

STATEMENT OF LEROY KOPPENDRAYER, CHAIRMAN, MINNESOTA PUBLIC UTILITIES  
COMMISSION AND CHAIRMAN, NUCLEAR WASTE STRATEGY COALITION

Mr. Chairman, and distinguished members of the Committee, the Nuclear Waste Strategy Coalition (NWSC) appreciates this opportunity to present a Statement for the Record regarding a hearing on S. 2589, to enhance the management and disposal of spent nuclear fuel and high-level radioactive waste, to ensure protection of public health and safety, to ensure the territorial integrity and security of the repository at Yucca Mountain, and for other purposes.

## ABOUT THE NWSC

The Nuclear Waste Strategy Coalition (NWSC) is an ad hoc group of state utility regulators, state attorneys general, electric utilities and associate members representing 46 member organizations in 26 states. The NWSC was formed in 1993 out of frustration at the lack of progress DOE had made in developing a permanent repository for spent nuclear fuel (SNF) and high-level radioactive waste (HLRW), as well as Congress's failure to sufficiently fund the nuclear waste disposal program (Program). The mission and purpose of the NWSC is to seek on behalf of the rate-payers of the United States:

- 1) The removal of commercial spent nuclear fuel from more than 73 temporary commercial storage sites located in 33 states.
- 2) The authorization of a temporary, centralized commercial spent nuclear fuel storage facility.
- 3) The allocation of appropriate funds from the Nuclear Waste Fund (NWF) by the U.S. Congress to the DOE so that it will fulfill its statutory and contractual obligations.
- 4) The augmentation of transportation planning and regulations to facilitate transportation systems.
- 5) The capping of the NWF payments at the present one-tenth of a cent per kilowatt-hour by the U.S. Congress.
- 6) The operation of the permanent repository as soon as possible.

## NUCLEAR WASTE FUND REFORM

NWSC members believe it is vitally important that Congress and the Administration work together to ensure the Program is funded in a manner that will allow the DOE to implement the Federal Program in accordance with the 1982 Nuclear Waste Policy Act, amended (NWPAA). The Program is already in default of its requirement to open a facility by 1998, and is slipping further behind schedule. It is imperative that a long-term fix of the current funding process be implemented and we urge Congress to fast track legislation that reclassifies the fees paid into the NWF as offsetting collections in the 109th Congress.

The NWSC is not calling for carte blanche funds for the DOE without Program oversight. Over the years, the NWSC has been very supportive of the OCRWM program and worked to ensure that Congress appropriate sufficient funds for the nuclear waste transportation and disposal program. We continue those efforts today as we are working very hard for passage of comprehensive legislation that reforms the NWPAA. Congress has an opportunity to fast track comprehensive legislation in the 109th Congressional session to enhance the management and disposal of SNF and HLRW, ensure protection of public health and safety and territorial integrity and security of the permanent repository. Moreover, reforming the annual funding for the Program, assures the 41 states' ratepayers that their payments into the NWF are being used for their intended purpose—the removal of SNF and HLRW from commercial nuclear power plants.

The members of the NWSC are supportive of S. 2589, the Nuclear Fuel Management and Disposal Act of 2006, introduced by Chairman Domenici at the request of the Administration. We note that S. 2589 would provide funds through the end of the fiscal year during which construction is completed for the Nevada rail line and surface facilities for the fully operational permanent repository. In addition, fees collected by the DOE and deposited in the NWF, shall be credited to the NWF as discretionary offsetting collections each year in amounts not to exceed the amounts appropriated from the NWF for that year. Most importantly, Congressional oversight of the Program funding will continue, similar to the annual appropriations process of the Nuclear Regulatory Commission and the Corps of Engineers.

The DOE recently announced a new schedule to begin receiving SNF and HLRW at the permanent repository by March 31, 2017. As stated by Ward Sproat, Director, Office of Civilian Radioactive Waste Management during recent hearings, this schedule can only be achieved by, “. . . the enactment of pending legislation proposed by the Administration,” that includes the reclassification of the NWF receipts as offsetting collections. Only a long-term funding fix will enable the DOE to stay on schedule; submit a high-quality licensing application; foster exemplary standards of quality assurance, accountability and integrity in the Program's activities; and implement a transportation infrastructure systems plan that meets the deadlines it sets.

## NUCLEAR WASTE FUND

There are adequate funds available to implement the Federal policy for permanent disposal of SNF and HLRW. That statement is conditioned on the premise that Congress will vote to support its own legislation—Congress has failed to support the NWPA. Since 1983, ratepayers from 41 states have paid more than \$27 billion, including interest, into the NWF to fund the DOE's establishment of a safe, timely, and cost-effective centralized storage and permanent disposal of SNF and HLRW. The nation's ratepayers pay more than \$750 million per year into the NWF, and with interest credits, this amount exceeds \$1 billion annually. After deducting expenses to date, the fund now holds approximately \$18 billion, including interest. This account balance has been used to support other programs and camouflage the Federal deficit rather than the development of the permanent repository. Consequently, more than 50,000 metric tons of SNF and HLRW are presently stranded at more than 100 sites (commercial and defense) in 39 states. Congress' support to codify the NWF annual receipts will ensure that every cent collected from the ratepayers will be delivered to the Program, as intended by the NWPA.

## LAWSUITS

It is more than eight years since the DOE defaulted on its obligations, as stated in the Nuclear Waste Policy Act of 1982, to remove SNF from the nation's nuclear power plants. In its 1996 Indiana-Michigan decision, the U.S. Court of Appeals affirmed that the DOE was obligated to start moving waste on January 31, 1998, "without qualifications or condition." The DOE ignored the Court, prompting 46 state agencies and 36 utilities to again seek relief through the Courts. The DOE has meanwhile ignored repeated Court orders to begin moving waste from commercial nuclear plant sites on the grounds that it has yet to build a permanent repository and has no authority to provide an interim storage and transport of high-level nuclear material from plant sites. Several lawsuits are currently being heard in the U.S. Court of Claims and could find the DOE liable for several billions of dollars in damages due to its failure to meet its 1998 obligations. Further, the 11th Circuit Court of the U.S. Court of Appeals has already ruled that these damage payments will not come from the Nuclear Waste Fund. Consequently, Congress will have to choose where the funds should come from and which programs will be affected. If the DOE fails to meet the deadlines it sets, the financial liability the DOE faces through lawsuits will continue to mount. As the DOE continues to delay honoring its contracts with the utilities to remove spent nuclear fuel from plant sites, both the amount of SNF and HLRW stored and the costs associated with storing it increase. A DOE contractor has conservatively estimated that each year's delay will escalate Program costs by approximately \$1 billion per year for the civilian and defense nuclear waste disposal programs. The longer Congress refuses to fully fund the DOE requirements, the greater the potential liability will be to the nation's taxpayers.

## TRANSPORTATION—RIGOROUS SAFETY STANDARDS

The DOE has proven that it can safely transport SNF and HLRW from plant sites across the nation. Since the 1960s, more than 3,000 shipments of spent nuclear fuel from nuclear power plants, government research facilities, universities and industrial facilities traveling over 1.6 million miles, "without a single death or injury due to the radioactive nature of the cargo."<sup>1</sup> This equates to more than 70,000 metric tons of SNF, an amount equal to what the NWPA authorizes for Yucca Mountain. Shipments include 719 containers from the Naval Nuclear Propulsion program between 1957 and 1999, and 2,426 highway shipments and 301 railway shipments from the U.S. nuclear industry from 1964 to 1997. In addition, since 1996, shipments of spent nuclear fuel have been safely transported to the United States from 41 countries to the DOE facilities;<sup>2</sup> again, without a single death or injury—not one. If a repository is licensed at Yucca Mountain, the DOE projects approximately 4,300 shipments over a 24-year period, averaging 175 shipments of spent nuclear fuel per year, a relatively small amount compared with the approximately 300 million annual shipments of hazardous materials (explosives, chemicals, flammable liquids, corrosive materials, and other types of radioactive materials) that are currently transported around the country every day.

<sup>1</sup>National Conference of State Legislatures' Report, January 2000.

<sup>2</sup>U.S. Department of Energy Report to the Committees on Appropriations, January 2001.

Furthermore, the DOE has safely and successfully made more than 4,835 shipments to the Waste Isolation Pilot Plant (WIPP) in New Mexico as of July 24, 2006.<sup>3</sup> The Western Governors' Association (WGA) signed an agreement with the DOE in April 1996 that affirmed regional planning processes for safe transportation of radioactive material. All regional high-level radioactive waste transportation committees also endorsed the WGA approach. The WIPP transportation planning system is setting the standard for safety and proving to be a critical step toward solving the nations spent nuclear waste disposal transportation program.

To ensure safety at on-site spent fuel storage facilities and during transportation, the material is stored in containers that meet the NRC's rigorous engineering and safety standards testing. To satisfy the NRC's rigorous standards for subsequent transportation approval, these containers have been dropped 30-feet onto an unyielding surface, dropped 40 inches onto a 6-inch vertical steel rod, exposed for 30 minutes to a 1,475 °F fire, submerged under 3 feet of water for eight hours, immersed in 50 feet of water for at least eight hours (performed in a separate cask), and immersed in 656 feet of water for at least one hour.<sup>4</sup>

#### CONCLUSION

Chairman Domenici, we respect your long standing leadership in addressing nuclear issues and nuclear waste policy. The viability of the nuclear waste disposal program will only succeed with your continued support and strong leadership in the U.S. Senate.

The members of the NWSC strongly urge you to work with House Energy and Commerce Committee, Chairman Joe Barton, to implement a long-term solution by fast tracking S. 2589 and H.R. 5360 in the 109th Congress that helps to ensure the DOE meets the 2017 deadline; reform the annual funding mechanism; implement a timely solution to the development of transportation infrastructure system plans and a repository facility that accepts material in existing and future NRC-licensed canisters and Greater-Than-Class-C waste. Taking title of and stranding SNF and HLRW indefinitely across the nation is not an option. The members of the NWSC are supportive of a recycling program and new nuclear power plants. However, these programs do not diminish in any way the need for, or the urgency of, a permanent geologic repository at Yucca Mountain. On the contrary, the Yucca Mountain permanent repository is still vitally important to moving SNF and HLRW from defense and commercial sites that cannot be recycled. Additionally, Under Section 160(b) of the NWPA, the Secretary will report to the President and Congress on or after January 1, 2007, but not later than January 1, 2010, on the need for a second repository. The DOE has already stated that they would start with the two-dozen candidate sites that they looked at the first time.

We urge members of Congress to take a long-term view for the best interests of their own state and our country. The members of the NWSC reiterate the importance for Congress to fast track S. 2589 and H.R. 5360 to keep the DOE on target and schedule by reclassifying the NWF annual receipts as offsetting collections to bring the nuclear waste disposal program to fruition as promised and mandated by the Nuclear Waste Policy Act of 1982, amended.

<sup>3</sup>Waste Isolation Pilot Plant Information Center, May 8, 2006.

<sup>4</sup>Nuclear Regulatory Commission Testing Requirements, 10 CFR Sections, 71.61, 71.71, and 71.73.

APPENDIX  
RESPONSES TO ADDITIONAL QUESTIONS

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RESPONSES OF DOE TO QUESTIONS FROM SENATOR DOMENICI

PROGRAM SCHEDULE

*Question 1.* In your testimony you state that the “Department announced its plans to submit a License Application for the repository to the NRC by June 30, 2008, and to initiate repository operations in 2017. This opening date of 2017 is a “best-achievable schedule” and is predicated upon enactment of the pending legislation.”

Does the Department’s plan account for litigation by the State of Nevada?

Answer. No. The Department’s schedule is the “best achievable schedule” for the licensing, construction, and start of operations of Yucca Mountain and does not account for litigation by the State of Nevada. The Administration’s proposed legislation contains provisions that would limit the potential for delays.

NUCLEAR WASTE FUND

In your testimony you state that the “most important factor in moving the Yucca Mountain Project forward is the ability of the Department to have access to the Nuclear Waste Fund to support the cash flows needed to implement the Project.”

*Question 2a.* If the Congress were to take the Nuclear Waste Fund off-budget, in the department’s view, would Congress be forfeiting its oversight responsibility as many have said, yes or no?

Explain your answer.

Answer. No. If Congress were to take the Nuclear Waste Fund off budget it would not forfeit its oversight responsibility. How Congress would exercise that responsibility would be dependent on the details of the statutory provision that took the Nuclear Waste Fund off budget. However, the funding reform provisions outlined in the Administration’s legislation do not propose to take the Nuclear Waste Fund off budget. The Administration’s proposal would still require an annual request of funds by the Department, and Congress would retain authority to annually appropriate funds, above or below the request. The proposal would permit fees annually paid by utilities to offset the funds appropriated, which is consistent with the intent of the Nuclear Waste Policy Act. By offsetting the appropriation with a direct revenue source, the Department’s request would not have to compete for limited discretionary resources.

*Question 2b.* If you had access to the corpus of the Nuclear Waste Fund, would Congress be forfeiting its oversight responsibility?

Explain your answer.

Answer. No. The Department would expect Congress to provide access to the corpus in a manner that provided for Congressional oversight.

S. 2589 “NUCLEAR FUEL MANAGEMENT AND DISPOSAL ACT”

In your testimony you state “the bill would withdraw permanently from public use approximately 147,000 acres of land in Nye County, Nevada.”

*Question 3a.* In developing the land withdrawal language, did the department consult with the Department of Defense?

Answer. Yes. The Department consulted the Department of Defense, along with other affected Federal agencies, during the development of the Administration’s legislative proposal.

*Question 3b.* In the departments communications with the DOD were you told that the land withdrawal would interfere with training at Nellis Air Force Base?

Answer. The Department of Defense did not express concern that the land withdrawal would negatively impact or interfere with training activities at Nellis Air Force Base.

The committee has received more input on the transportation section, section 7 of S. 2589 than any other section. This transportation section would make clear that the Secretary of Energy can make the determine the extent to which any transportation done in carrying out the Secretary of Energy's functions under the Nuclear Waste Policy Act would be regulated exclusively under the Atomic Energy Act of 1954.

*Question 4a.* Isn't it true that the Department has a long history of cooperation with the states on transportation issues?

Answer. Yes. The Department has successfully transported nuclear and other hazardous materials for decades and has actively involved States and Tribes in the planning and execution of those shipments.

*Question 4b.* If the transportation provision in this bill was passed, do you plan to do business any differently in terms of cooperation with the states?

Answer. No. The Department intends to continue its current collaborative process with States and Tribes in the planning and execution of shipment of spent nuclear fuel to Yucca Mountain.

*Question 4c.* Will [sic] provide to this committee in the next two weeks a budget estimate for the Yucca Mountain project?

Answer. We anticipate having the revised budget estimate and cash flow available to provide to the Committee by the end of calendar year 2006.

#### RESPONSES OF DOE TO QUESTIONS FROM SENATOR CRAIG

##### NEW NUCLEAR REACTORS

*Question 1.* How many states currently prohibit construction of new nuclear reactors before a repository is completed?

Answer. The Department is aware of eight States which currently prohibit the construction of new nuclear power plants until there is an approved Federal disposal facility. These States are California, Connecticut, Illinois, Kentucky, Maine, Oregon, Wisconsin and West Virginia.

##### INTERIM STORAGE

*Question 2.* Could the DOE successfully implement a storage program well before YM could begin accepting waste? At what cost?

Answer. The cost and the time required to site, license and build an interim storage facility (ies) would depend on the size, location, number, and available appropriations for funding these projects, as well as the transportation routes available to those locations. If such an effort were to be pursued in addition to the reforms contained in the Administration's proposed legislation, however, it is unlikely that such a facility would be available appreciably before the repository. Moreover, without separate and additional funding for interim storage siting, design, licensing, construction and operations and overall funding reform for the Program, the Department would not have sufficient resources, both human and financial, to establish interim storage facilities and still meet its 2017 target for beginning to accept waste for disposal at the Yucca Mountain repository.

The Nuclear Waste Policy Act (NWPA) limits the manner in which it can undertake interim storage of commercial spent nuclear fuel (SNF) destined for the Yucca Mountain repository. Subtitle B (Interim Storage Program) of the NWPA provides authority for interim storage of SNF. That provision, however, limits the quantity of SNF that the Department could store on an interim basis to 1,900 metric tons and cannot be used, because the authority under Section 136 of the NWPA to contract for interim storage expired in the early 1990s.

Under Subtitle C of the NWPA, the Department presently has authority to establish a monitored retrievable storage (MRS) facility, but the construction of an MRS cannot begin until the Nuclear Regulatory Commission issues the construction authorization for a repository at Yucca Mountain and the capacity of the MRS is limited to no more than 10,000 MTU until the repository is operational with a maximum capacity of no more than 15,000 MTU. As a result, the development of an MRS would not allow DOE to begin storage appreciably before Yucca Mountain could begin accepting waste. If Congress were to consider changing these limitations on interim storage, we would look forward to working with Congress in evaluating interim storage alternatives as part of a comprehensive approach to addressing the Nation's nuclear waste storage needs. The Department continues to emphasize, however, that interim storage is a temporary solution and is not a substitute for permanent geologic disposal.



*Question 3.* Do you think that establishing a storage program, whether under the direction of OCRWM or as a separate directorate within DOE [as proposed by Domenici-Reid for CAP], would divert attention and resources away from YM?

Answer. See response to Q2 above.

*Question 4.* Do you know of any states that have expressed interest in hosting a CAP facility?

Answer. The Department is not aware of any State that has expressed an interest in hosting a Consolidation and Preparation (CAP) facility as proposed under the Domenici-Reid legislation.

#### ANNUAL FUNDING

*Question 5.* What level of annual funding do you estimate OCRWM will need to open the repository at Yucca Mountain by 2017?

Answer. We are currently re-evaluating the cash flows required for meeting the March 2017 “best achievable schedule” and anticipate providing revised cash flows to the Committee by the end of calendar year 2006.

#### GNEP AND YUCCA MOUNTAIN 70,000 MTHM LIMIT

*Question 6.* Would you please explain the connection between GNEP and the legislated limit of 70,000 metric tonnes of waste to be disposed at Yucca Mountain?

Answer. The Nuclear Waste Policy Act limits the repository to the 70,000 metric tons of heavy metal that were contained in the original spent nuclear fuel (SNF) assemblies prior to and regardless of reductions in volume (size) that may result from recycling through the Global Nuclear Energy Partnership (GNEP) processes. Without a change in this provision, such as that proposed by the Department, recycling would have no effect on the amount of SNF that could be disposed of in the Yucca Mountain repository.

#### YUCCA MOUNTAIN SCHEDULE

*Question 7.* The DOE has received a great deal of criticism for missed deadlines and inadequate planning. What do you believe is necessary to prevent such problems from recurring?

Answer. Passage of the Administration’s proposed legislation will provide stability, clarity, and predictability for the Program to meet the 2017 repository operating schedule. The legislation simplifies and expedites the regulatory framework and provides adequate and predictable funding source, and authorizes the timely development of vital infrastructure activities to start operations in 2017.

*Question 8.* To what degree do you think opposition from the state of Nevada has delayed this project?

Answer. While opposition by the State of Nevada certainly has impeded progress of the Yucca Mountain Project, it is hard to quantify the delay attributable to such opposition.

*Question 9.* Where do you think the project would be at this time if adequate funding had been provided for the last ten or fifteen years?

Answer. It is likely that the Department would have commenced the Nuclear Regulatory Commission licensing process for the repository and possibly would have begun or even completed construction of the repository.

#### SCHEDULE FOR TRANSPORTATION INFRASTRUCTURE

*Question 10.* Do you believe DOE will have the necessary transportation infrastructure in place when YM is ready to accept waste as early as 2017? Can you do so with your existing resources?

Answer. The Department’s recently announced schedule includes the development of the necessary transportation infrastructure to support waste acceptance operations at Yucca Mountain in 2017, assuming the adoption of the Administration’s legislation. Without adoption of the Administration’s legislation the Department will not have the stable and predictable funding needed for large transportation procurements such as the rail line.

#### WORKING WITH STATES AND TRIBES

*Question 11.* If the regulatory provisions in this bill were passed, would DOE do business any differently in terms of cooperation with the states, tribes and local governments?

Answer. No. The Department intends to continue its current collaborative process with States, Tribal and local governments on the planning and execution of shipment of spent nuclear fuel to Yucca Mountain.

## WASTE ACCEPTANCE

*Question 12.* Will Navy & DOE Spent Nuclear Fuel and High-level waste currently being stored in Idaho be received at the Initial Fuel Handling Facility as soon as it opens?

Answer. The Initial Fuel Handling Facility is being designed to handle Navy and most forms of DOE and high-level waste. The 1995 settlement agreement between DOE, the Navy, and the State of Idaho provides that naval spent fuel stored in Idaho shall be among the early shipments of spent fuel to the first repository or interim storage facility.

## TADS

*Question 13.* Are there any R&D needs that must be addressed before deploying the Transport, Aging, and Disposal (TAD) canister, and if so what is the schedule for addressing these needs, and are adequate funds available?

Answer. No, the Department does not believe there are any R&D issues to be addressed before deploying the transport, aging, and disposal canister.

## RESPONSES OF DOE TO QUESTIONS FROM SENATOR ALLEN

Mr. Sproat, as you are aware, the Department is facing over 60 lawsuits by current and former nuclear power plant operators seeking damages caused by the Government's failure to construct a permanent nuclear waste repository and place it into operation by 1998, as the Government had contractually agreed to do. The Government has settled a couple of these suits, lost a couple of these suits, and has yet a [sic] win a single one. As I understand it, most (if not all) of these lawsuits have withstood motions to dismiss by the Government, and therefore all that remains is the determination of damages.

[Note: These questions were submitted at the request of a Virginia constituent.]

## LIABILITY

*Question 1.* Assuming DOE were to lose all of the suits currently pending on this topic in the Claims Court, what is the Government's projected aggregate liability as of today?

Answer. The plaintiffs in the litigation have not fully quantified damages claimed in these cases nor has the Government estimated what amount may be awarded by the Court should the Government not prevail in any of these cases.

*Question 2.* Assuming, as has been projected, that the permanent repository is not completed until 2017, what would the Government's projected aggregate liability be as of 2017?

Answer. Based upon the settlements entered into by the Government to date, the Department has estimated the Government's potential liability in the spent fuel lawsuits to be on the order of \$7 billion, assuming the Yucca Mountain repository begins operation in 2017.

*Question 3.* Has the Department formally assessed this contingent liability, i.e. "handicapped" its chances of losing or prevailing in these lawsuits and estimated what the Government's losses might be?

Answer. The government assumes it will prevail in all its cases and does not "handicap" its chances of losing or prevailing in lawsuits. For potential liability purposes, Department has estimated the Government's liability in the spent fuel lawsuits, as noted in the previous answer.

*Question 4.* What steps has the Department taken to mitigate this contingent liability, either retrospectively by exploring settlement options, or prospectively, by exploring ways to at least stay the mounting bill such as interim storage until the permanent repository is completed?

Answer. The Department of Justice represents the United States in defending these lawsuits. The Department has actively supported the Department of Justice in the ongoing litigation, as well as in negotiating settlements of the spent fuel lawsuits as an effort to limit the liability. The Department of Justice has entered into three settlement agreements and negotiations are underway with several other contract holders.

*Question 5.* You've stated publicly that you want to settle these cases. How exactly does a plaintiff in one of these Claims Court suits go about initiating a settlement process with the Government?

Answer. The plaintiffs should have their attorneys contact the Government's attorneys at the Department of Justice to express an interest in entering into settlement discussions.

*Question 6.* In your opinion, what impact does the Government's failure to resolve these outstanding claims have on the development of new nuclear construction?

Answer. The ongoing litigation over the delay in spent fuel acceptance should have little or no impact on the development of new nuclear power plants. The Government's commitment to accept and dispose of all spent nuclear fuel generated by existing nuclear power plants remains unaffected by the temporary delay. The Government is prepared to enter into new contracts with owners of new nuclear power plants to dispose of spent nuclear fuel generated by these new facilities.

RESPONSES OF DOE TO QUESTIONS FROM SENATOR BINGAMAN

S. 2589 "NUCLEAR FUEL MANAGEMENT AND DISPOSAL ACT"

*Question 1.* Please provide the Committee with a copy of each of the Public Land Orders and accompanying conditions or memoranda of understanding referred to in section 3(b)(1), the project right-of-way reservations N-48602 and N-47748 referred to section 3(b)(2), and the map referred to in section 3(c)(1).

Answer. The following have been retained in committee files:

1. Public Land Orders 6802 (best available copy) and 7534. (Enclosure 1)
2. Copies of Right-of-Way Reservations N-47748 (dated January 5, 2001) and N-48602 (please note that the most recent renewal of ROWR N-48602 is dated April 8, 2004). (Enclosure 2)
3. Map YMP-03-024.2, dated July 21, 2005, and entitled "Proposed Land Withdrawal." This map generally depicts the proposed land withdrawal area boundaries. An electronic copy of this map is also provided. (Enclosure 3)

*Question 2.* Please provide the Committee with a list of the mining claims referred to in section 3(e)(2)(F)(ii).

Answer. A copy of the Bureau of Land Management Mining Claim Geographic Report, dated August 15, 2006, is provided. This report was obtained from the Bureau of Land Management's LR-2000 on-line database.

The Mining Law of 1872 is administered by the U.S. Department of the Interior, Bureau of Land Management. The official records related to mining claims are maintained by the Bureau of Land Management. (Enclosure 4)

*Question 3.* Please explain the purpose and intended effect of section 3(e)(2)(F)(iv) [sec]. Is the Cind-R-Lite mining claim a "valid existing right" protected by section 3(a)(1)? If so, is it necessary to say that the claim "shall not be affected by establishment of the Withdrawal"? Or is clause (iv) simply intended to exempt the Cind-R-Lite mine from the mining prohibition in section 3(e)(2)(F)(I)?

Answer. The proposed legislation recognized that valid existing mining rights occurred within the land withdrawal area. Section 3(e)(2)(F) addresses mining rights. Subsection (i) precludes any new mining claim applications and provides a process for disposition of any existing non-patented mining claims. Subsection (ii) addresses the sole patented mining claim, belonging to Cind-R-Lite, which occurs within the land withdrawal area. Cind-R-Lite, a manufacturer of cinder blocks, holds Patent 27-83-0002 which is a 203-acre patented mining claim, the approximate location of which is shown on Map YMP-03-024.2. A patented mining claim is the result of the conveyance of fee title (surface and subsurface) to a parcel of land from the United States to a private claimant. As a result, the Federal government no longer holds title to this parcel. If necessary to meet repository mission, Subsection (ii) allows the Secretary, following consultation with the Secretary of the Interior, to acquire the mine through providing just compensation.

As a "patented" mining claim, the operational Cind-R-Lite mine would be a "valid existing right" protected by section 3(a)(1). For that reason Section (e)(2)(f)(ii) is intended to protect that existing claim so that it "shall not be affected by establishment of the Withdrawal." The mining prohibition in Section 3(e)(2)(F)(ii) is intended both to protect that existing operation and to exempt it from the mining prohibition.

*Question 4.* Please explain the need for section 3(f). Why does the legislation need to hold the United States harmless from damages suffered in the course of mining activities in subsection (f), if mining is prohibited in subsection (e)?

Answer. The mining prohibition in section 3(e)(2)(F)(i) is not absolute. It is subject to section 3(e)(2)(B), under which the Secretary, in theory, could authorize mining. Several unpatented mining claims exist within the Withdrawal's boundaries. The immunity provision in section 3(f) (which is fairly standard in other land withdrawal legislation) is intended to prevent taxpayer dollars from being used to pay for injury or damages resulting from any private mining, mineral leasing, or geothermal leasing activities that conceivably could be authorized within the Withdrawal.

*Question 5.* Please explain the need for general land acquisition authority within the Withdrawal under section 3(g) if the Withdrawal is already owned by the United States.

Answer. To the extent that there are private in-holdings within the Withdrawal, the land acquisition authority would permit the Secretary to acquire them. Such authority may be particularly important if the Secretary determines, among other things, that these private interests conflict with the construction and operation of the repository or that these interests interfere with the repository's ability to isolate waste from the human environment. Land acquisition authority is a useful tool that appears in other land withdrawal legislation.

*Question 6.* Please identify the "surface facilities" that section 4(a)(2) would exclude from the application for construction authorization. Would a storage or "aging" pad be a "surface facility"?

Answer. The term "surface facilities" is intended to include those facilities at the Yucca Mountain site that must be licensed by NRC and thus would include a storage or "aging" pad. The proposed legislation would not eliminate the need for these facilities to be licensed before they could be constructed and operated. It would merely make clear that they need not be included in the initial license application if not needed for initial operation of the repository.

*Question 7.* Please define the term "infrastructure activities." Are the items listed in clauses (i) through (iv) meant to be exclusive? Could a storage or "aging" pad be considered an "infrastructure activity"?

Answer. The term "infrastructure activities" refers to actions to support the construction or operation of the repository and which do not themselves require an NRC license. The items listed in section 4(b)(3)(A)(i)-(iv) are examples. The list is not intended to be exclusive. Aging pads are not "infrastructure activities."

*Question 8.* Please reconcile section 4(b)(3)(A)(iii), which lists "the construction of a rail line to connect the Yucca Mountain site with the national rail network," and the sectional analysis accompanying the bill, which said that "section 4 would authorize the Secretary to undertake infrastructure activities . . . including the construction of a rail line . . .," with your statements at the hearing that section 4 would not authorize construction of the rail line.

Answer. Section 4 does not authorize construction of the rail line. Rather, it makes clear that construction of the rail line may commence prior to the granting of a construction authorization for the repository.

*Question 9.* Please explain the purpose and intended effect of section 4(c). What actions "connected or otherwise relating to the repository" does the Department anticipate taking "outside the geologic repository operations are [sic]" that will not require a license from the NRC?

Answer. Section 4(c) would focus NRC's responsibilities under NEPA to all activities and facilities inside the Geologic Repository Operations Area (GROA) and to activities and the facilities outside the GROA requiring a license rather than non-nuclear matters outside the GROA that do not require an NRC license, such as the listed infrastructure activities. This section would not affect the NEPA responsibilities of DOE and other agencies with respect to these facilities and activities.

*Question 10.* Please identify any conceivable "infrastructure activities" that may be "necessary or appropriate to support construction or operation" of the repository under section 5(b) of the bill that are not also "necessary or incident to such repository" within the meaning of section 302(d)(5) of the Nuclear Waste Policy Act of 1982.

Answer. The proposed language in Section 5(b) is not intended to expand the scope of facilities and activities for which the Waste Fund may be used under the Nuclear Waste Policy Act. Rather, it makes clear that the Waste Fund can be used for infrastructure activities.

*Question 11.* Please identify any transportation expenses that would be covered under the amendment proposed to be made by section 5(b) that are not already covered under section 302(d)(4) of the Nuclear Waste Policy Act.

Answer. There are no transportation expenses that are not covered under the amendment or under Section 302(d)(4) of the Nuclear Waste Policy Act. The proposed language clarifies that costs incurred for transportation may include development of transportation infrastructure (i.e. a rail line) as well as costs associated with transportation operations. No new transportation infrastructure is contemplated by the amendment proposed by section 5(b) that was not implicit in section 302(d)(4).

*Question 12.* Please identify all waste streams "owned by the Secretary" that may now be subject to regulation under the Resource Conservation and Recovery Act or state hazardous waste laws, but would be exempt from such regulation if section 6(a)(1) is enacted.

Answer. All Navy and DOE SNF, as well as DOE HLW, are potentially subject to claims that it is covered by RCRA. The intent of proposed section 6(a)(1) is to eliminate litigation over whether such material is covered by RCRA, because the use of NRC certified canisters and NRC regulation of the SNF and HLW at Yucca Mountain site makes RCRA regulations unnecessary to ensure safety.

*Question 13.* Please identify all waste streams that may be covered by section 6(a)(2).

Answer. Section 6(a)(2) is limited to waste streams during their transport to the Yucca Mountain site and during their storage and disposal at the Yucca Mountain site.

*Question 14.* Please describe the status of the Department's efforts to obtain any air quality permits that may be needed for the repository from the State of Nevada.

Answer. The Department has not filed applications for air quality permits to support repository construction. According to State of Nevada regulations, these applications can be filed no later than 12 months prior to the requested start of construction. For repository construction, similar to other large construction projects, the Department expects to file a Class I Air Quality Permit application because of the projected emissions from air quality point sources (e.g., batch plants, generators, and various other diesel equipments). Under Nevada air quality regulations, actual assembly of this equipment can not proceed until issuance of the permit and equipment assembly must be completed no later than 12 months after permit issuance. The Department intends to file air quality applications approximately 18 months prior to the anticipated repository Construction Authorization. To meet the Department's License Application and waste receipt schedule, the air quality permit must be issued prior to Construction Authorization. An additional permit, a Title V Air Quality Operating permit, must be obtained to support repository operation. Considering the delays, permit denials, and litigation that the Department has encountered in water right applications with the State of Nevada, the Department seeks to have air quality permitting actions remanded to the U.S. Environmental Protection Agency.

*Question 15.* Please describe the status of the Department's efforts to acquire water rights that may be necessary for the repository from the State of Nevada.

Answer. In 1992, the Department secured temporary water rights in the amount of 430 acre-feet per year expiring in April 2002. In 1997, the Department submitted to the Nevada State Engineer five applications for permits to permanently appropriate water in the amount of 430 acre-feet per year. The State of Nevada requires the applicant to prove that adequate ground water resources are available, that there is no conflict with other existing water rights, and that the application is not detrimental to the public interest. In February 2000, the State denied the Department's permit applications on the basis that state law effectively prohibited the development of the repository and that, as a result, the requested use was detrimental to the public interest. The Department successfully appealed this decision, and the U.S. District Court remanded the issue to the Nevada State Engineer for further hearing. In 2003, the Nevada State Engineer again denied the Department's application based on a determination that the development of a repository was detrimental to the public interest. The Department's appeal of these decisions continues.

It is also important to note that in 2002 the Nevada State Engineer denied the Department's request to extend its temporary water rights while the litigation was pending on the permanent rights. As a result, the Department's field activities at Yucca Mountain were significantly impacted for nine months. During this nine month period, the Department was forced to utilize only water that had been previously stored in tanks on site. Only limited operations were allowed to continue at the site. Additionally, other restrictions were put into place including the prohibition of site worker use of restrooms in favor of porta-johns and hand-wash stations, and limited field activities due to the inability to provide water for dust suppression as required under the State of Nevada issued Air Quality permit. The State Engineer at this same time also revoked a previously issued approval for a major aquifer test planned at the Alluvial Tracer Complex, approximately 15 miles south of the Exploratory Studies Facility. This test would have provided additional information on saturated zone flow and transport at the connection of the shallow alluvial and the volcanic water tables.

In December 2002, the court recognized the Department's right to maintain the status quo during litigation and imposed a Joint Stipulation allowing for ground water pumping supporting potable water use. A similar agreement in June 2003 secured ground water for non-potable use (e.g., scientific testing, and air quality dust abatement). To meet the requirements of 10 CFR 63.121, the Department must demonstrate to the NRC that water rights adequate to support construction and operation of a geologic repository have been secured. While the Department has af-

firmed that existing water is available, and that there are no apparent conflicts with other right holders, it is unlikely that the Nevada State Engineer will reverse previous rulings that a geologic repository is detrimental to the public interest of the people of Nevada.

*Question 16.* In his prepared statement, Mr. Wright stated that “ratepayers have paid \$25 billion in fees and interest” into the Nuclear Waste Fund. Mr. Beasley stated that “ratepayers . . . have paid over \$27 billion into the Nuclear Waste Fund. . . .” The Department has previously indicated that the ratepayers have paid \$14.276 billion in fees, and interest on the balance has accrued in the amount of \$10.572 billion. How much have the ratepayers paid? Who pays the interest? Is it fair to count the interest payments as ratepayer contributions?

Answer. As of December 31, 2005, ratepayers have paid \$14.276 billion in fees, and interest on the balance has accrued in the amount of \$10.572 billion. Interest is earned by the Nuclear Waste Fund through investment in Government securities. The interest earned by the fund is not considered a ratepayer contribution. Expenditures from the fund through December 31, 2005, have totaled \$6.576 billion leaving a balance in the fund of \$18.272 billion.

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RESPONSES OF DAVID WRIGHT TO QUESTIONS FROM SENATOR DOMENICI

*Question 1.* In your testimony you state that “without the repository, spent nuclear fuel continues to accumulate and be stored in places that were never designed or permitted for indefinite storage. Spent fuel would be stored at 72 locations along rivers and lakes in 34 States instead of in a more secure, well-designed repository.”

Given the history of the program, are you confident that Yucca Mountain will open according to the new schedule in 2017?

Answer. Sadly, based on past history of the repository program, we are not confident the repository will open in 2017. In the April 18, 1983 Federal Register, DOE made this statement, “The 1998 date (to begin permanent disposal of spent nuclear fuel) is called for in the Act, and we believe it to be a realistic date. Our performance will be judged by meeting that date.” We are pleased and encouraged to have the new Director of the Office of Civilian Radioactive Waste Management so enthusiastic and committed to submitting the construction license to the NRC in 2008, but we have seen similar schedules before that were not met, for one reason or another. We have confidence he will do his best to be ready to submit the license in 2008. We agree with his cautionary forecast that there is “zero probability that the repository will open in 2017 without the pending legislation,” referring to S. 2589.

Likewise, although we support the reform of the NWF appropriations process provided for in Section 5 of S. 2589, we are not optimistic of its enactment. There are two reasons for that outlook:

- Legislation pertaining to nuclear waste disposal tends to not get passed in the Senate.
- We have concluded that many members of Congress like the status quo in which, for example in FY 2006, 87 percent of the NWF fee revenue gets to be used for other government purposes unrelated to the Nuclear Waste Policy Act.

Even if S. 2589 were to be enacted, we note the DOE disclaimer that the 2017 date is the “best-achievable schedule.” For example, it assumes the NRC license review will be complete in the three years provided for in the NWPA (a fourth year can be requested if needed.) Although there is a commendable pre-licensure exchange between DOE and the NRC, this will be a complex license such as has never been done before and we know there will be sustained involvement in the process by parties to the license that could lengthen the review. As a reference point, the license action for the existing technology spent fuel storage proposed by PFS in Utah, took eight years to be completed.

We have yet to see the latest surface facility design for the repository, but both surface and subsurface construction will need to be well planned, executed and subject to licensing inspection requirements and could encounter any number of delays. Maybe it is possible to complete construction for initial repository operations in four and one-half years, as the latest schedule shows, but there is no history of building a geologic repository to give us confidence that that will be how long it takes at Yucca Mountain. We do not know, for example, whether the State of Nevada will cease to oppose the project once it is licensed by the NRC or it will continue its present policies unabated. That could make a difference, regardless of whether the construction proceeds smoothly or not.

*Question 2.* What’s NARUC’s back-up plan should the project not open to receive spent fuel in 2017?

Answer. NARUC and its utility commission members are not direct parties in spent fuel management. The parties directly involved are DOE, the owners and operators of the reactors and the Nuclear Regulatory Commission which licenses both reactors and on-site spent fuel storage. There is potentially a fourth party at the federal level. The Department of Homeland Security has maintained an interest in spent fuel storage at both active and shutdown reactor sites. The National Academy of Sciences has studied safety of spent fuel storage at reactor sites and has made recommendations to the NRC. There may be reasons that we are not privy to that may warrant certain actions to further protect spent fuel storage.

We imagine the utilities would continue to add more dry cask storage if DOE does not meet the 2017 date. That simply means more liability for the government to pay damages with the open-ended lawsuits that have had judgments and the others that are still in litigation.

Some State utility commissions have looked into some means of escrowing NWF fee payments in view of the government's partial breach, but the utilities that actually make the fee payments, have been reluctant to take such steps that might complicate the ongoing waste acceptance delay litigation with DOE or which might place their operating license in jeopardy. With over \$25 billion having been added to the NWF in fees and interest, some State may want to press the escrow notion further. You can understand how helpless some States might seem in this.

*Question 3.* If Yucca Mountain opens to receive spent fuel in 2017, how long can you (states) await shipment? 40 years? 50 years? 90 years?

Answer. As stated earlier, this would be a matter among the utilities, the NRC and DOE. There may also be site-specific limits on how much spent fuel can accumulate. There is also the question of the service life of the reactors themselves that may have a bearing on decisions by the utility owners. From what we understand of the next generation of nuclear plants being considered, the new plant designs offer considerable technological and economic advantages that would likely be weighed by the owners. As far as the States are concerned, there would be at least two considerations. We would want to have the benefits of reliable and economic electricity generation, while having assurance that the legacy of spent fuel is well managed by the utility until the federal government fulfills its obligation to accept the fuel for either interim storage elsewhere, reprocessing or disposal—all of which are to be performed away from current reactor sites.

I cannot forecast how all States and the public may feel about how long they can wait for spent fuel to be removed from present reactor sites if the repository is ready to accept spent fuel in 2017, but it would seem that if the repository does open then, it will show some promise that the disposal process has at last begun and then other measures might be taken. By then, we will know more about the technical and economic prospects for reprocessing. By then, DOE and NRC might have concluded that the full physical capacity of Yucca Mountain can be utilized if the 70,000 MT statutory limit is lifted.

Looking 40 to 90 years ahead, it may become a matter of national security to consolidate spent fuel storage in a few government secured and operated central storage facilities to protect against future threat conditions that may arise.

*Question 4.* How would you handle accumulations while waiting?

Answer. Subject to site limitations and public concerns or acceptance, the utilities might continue to incur added costs to add additional dry cask storage (with the likelihood that the government will eventually be financially liable.) Some utilities might relocate and consolidate spent fuel storage at the PFS site or another that might be developed elsewhere. We would foster having the federal government take responsibility for its failure and develop and operate an interim storage facility.

Maybe the Consolidation and Preparation facilities proposed in the FY 2007 Energy and Water Development appropriations bill in the Senate will have led to the establishment of State or regional interim storage facilities. That would put DOE more in charge of spent fuel management, but we are unable to foresee how Congress could authorize use of the Nuclear Waste Fund to pay for those interim storage costs—as the bill proposes—and still provide sufficient annual appropriations to make progress on the repository. We know the forecast revenue with confidence—short of some industry-wide reversal of production success. We do not know either the cost of the CAP program nor have we seen yet a projection of repository program needs to make 2017. Our hunch is that by around 2010, if the CAP approach meets some success, there will come a point at which simultaneous execution of the repository and some CAP storage will require more funds than the annual NWF revenue and the Congress will have to tap the NWF balance.

## RESPONSES OF DAVID WRIGHT TO QUESTIONS FROM SENATOR CRAIG

*Question 1.* Do you believe interim storage should be a priority for DOE?

Answer. Yes, however it should be managed by a separate DOE organizational unit other than the Office of Civilian Radioactive Waste Management to avoid distracting OCRWM from developing the repository.

It seems to us that DOE presently lacks a sense of obligation to mitigate the effects of its failure to begin waste acceptance in 1998 and its partial breach of contracts. It is as though the matter has been turned over to the courts, whereas in the business world if a service provider is not meeting agreed performance terms of a contract there is a best practice by most responsible contractors to try to provide mitigation to help their customer work around the delay and the inconvenience it causes. Where that does not occur, there is always the threat or actual stopping of payments. Here we have a “contractor” (DOE) which is going to be at least 19 years late in meeting a contracted obligation, yet the customers are compelled by law to continue to make payments in advance of the promised service.

We found the suggestion by the House Energy and Water Development Subcommittee two years ago to develop interim storage on DOE installations attractive and could have provided some storage relief on a timely and economic basis. The physical practicalities of setting up such a stopgap accommodation seem to be subordinate to political and financial considerations. We note that DOE seems able to ship and store foreign research reactor fuel at DOE sites rather routinely. Yet, DOE has foreclosed the possibility of doing the same for its utility “customers” with which it has signed contracts.

The failure to meet the NWSA 1998 waste acceptance mandate may not rise to the crisis proportions that DOE sometimes is drawn into to address, such as post-Katrina gas and oil supply disruption, the 2003 electric blackout or the BP North Slope oil field pipeline shutdown. That may be because the nuclear industry is almost coping too well: it has not let the government’s failure disrupt its ability to continue providing 20 percent of the Nation’s electricity. That does not mean DOE should not seek to take reasonable (and not logistically difficult) measures to mitigate the consequences of the continued repository delay.

*Question 2.* Do you believe that an interim storage plan can be implemented in a timely manner—that is, before Yucca opens and begins to accept waste?

Answer. There is one possibility that would seem able to begin interim storage within this decade. The Private Fuel Storage LLC proposed spent fuel storage facility in Skull Valley, Utah was licensed in 2005 to provide temporary storage for up to 40,000 tons of spent fuel. In December 2005, PFS Chairman Parkyn wrote to Chairman Domenici and other congressional leaders offering to either have DOE take title to spent fuel now at commercial reactors and enter into a storage contract with DOE or have the utilities retain title to their fuel which would be stored at PFS with DOE reimbursing the utilities for their costs. The offer was made to provide storage for around \$60 million per year and to start in three years.

PFS followed up by sending the offer to DOE. There has been no response that we are aware of, but the Deputy Secretary of Energy was quoted in a Utah newspaper in March 2006, saying, “We have never really considered Private Fuel Storage as something consistent with our obligations to take spent fuel under the Nuclear Waste Policy Act.”

While Sec. 313 of the Senate Energy and Water Development Appropriations bill seeks to develop interim storage in each State with a commercial nuclear reactor, the bill excludes from consideration storage in any State in which the NRC has authorized the construction and operation of a commercial spent fuel storage facility, which eliminates PFS. PFS is the only such facility that meets the conditions for exclusion. We recommend that exclusion be stricken and DOE be directed to investigate the possibility of using the PFS facility for interim storage.

Can interim storage be put in place in a timely manner? Yes, it can. There are already 35 licensed dry-cask facilities around the country. The cask industry seems to have been readying to meet the expected orders to provide shipping and storage containers ever since the NWSA was enacted. The storage facilities themselves are not particularly complicated. Site selection is likely to be contentious, as it was in Skull Valley and even in some instances of adding dry storage at reactor sites, as recently in Vermont and Diablo Canyon in California. The public will want assurances that the interim storage will not somehow become de facto permanent which is why it is important that credible progress continue in developing the permanent repository.

*Question 3.* What can the utilities do to renew a sense of urgency needed to push for timely repository development?



Answer. It remains awkward for those utilities still in litigation to communicate directly with DOE on matters subject to litigation, but it might be illuminating to all stakeholders, including Congress, to have an order-of-magnitude estimate developed of the additional cost of delay in spent fuel acceptance from the previously forecast repository opening of 2010 to 2017. We don't know where the \$500 million per year delay cost estimate came from, but if it is still valid, there is an additional \$3.5 billion.

It would seem beneficial to tap the nuclear industry's technical and management expertise from its cumulative experience as NRC licensees. Perhaps DOE could develop a loaned executive program with industry to augment the current government employee and contractor repository development team. Congress may not realize the destabilizing effects of nearly routine budget cuts or uncertainties of operating a professional workforce under continuing resolutions. If there were more stable appropriations available to the repository development, such as would be provided by Section 5 of S. 2589, DOE could sustain a focused sense of urgency.

It is totally outside the cautious and conservative "nuclear culture" for the nuclear industry to threaten or engage in brinksmanship as a tactic to stir a sense of urgency in developing the repository. If anything, the industry's "defense in depth" in nuclear operations works against them: if the "primary" spent fuel strategy is for the government remove spent fuel from reactor sites carries a risk of failure, then the industry norm is to have a "secondary" plan as back-up. That is why, even before DOE conceded it would be unable to meet the 1998 NWPA-mandated waste acceptance schedule, the industry already was expanding the capacity of its cooling pools and later installing dry-cask storage. It was not their preferred way to use their resources, but it was the prudent course to continue their ability to maintain operations and continue to serve their electric customers. It is also a common trait for utilities to honor their "obligation to serve" the public.

I regret to say that the lack of a sense of urgency in spent fuel disposal starts with Congress. Congress continues to "cash the checks," sent faithfully each year by the utilities, and appropriates only a small fraction of that amount to the repository program while freely distributing the balance for other unrelated government purposes. Efforts, such as the reclassification of the NWF fees as offsetting collections as proposed in S. 2589, have been made to assure the NWF fee revenue is used solely for its intended purposes year after year, yet the result is to continue the status quo.

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#### RESPONSES OF ROBERT LOUX TO QUESTIONS FROM SENATOR DOMENICI

*Question 1.* You have said before this committee earlier this summer that the State of Nevada never intends to work with the Department of Energy in getting Yucca Mountain open.

Are there any circumstances where you would work collaboratively, side-by-side if you will, with the Department—yes or no?

Answer. We would certainly work with the Department to take reasonable and necessary steps to reclaim the site and to mitigate any significant adverse environmental impacts caused by site characterization activities at the site. Other than that, no.

*Question 1a.* If the Department submits a high quality license application that the NRC docket and that meets or exceeds all of the local, state and federal requirements, is the State of Nevada prepared to grant DOE the permits needed to construct the repository?

Answer. Mere submission of a high quality license application, in and of itself doesn't mean that the site will necessarily receive a construction authorization. Until such time it is premature to respond.

*Question 2.* Can you confirm the following data:

- The Yucca Mountain Repository Program employs approximately 200 federal employees and approximately 1800 contractor employees today?
- The annual payroll for the federal employees plus benefits is approximately \$40 million?
- The annual payroll for contractors is \$300 million?
- According to DOE, the construction of Yucca Mountain to begin operations is expected to employ up to 2500 contractor employees for the construction of the site, and the average salary for construction employees will be \$100,000 per year?
- It is estimated that there will continue to be approximately 200 federal employees with an average salary of \$100,000?

- DOE estimates that the peak employment for the Nevada Rail Project (railroad construction) is expected to be up to 2200 employees, with an average of 1400 employees over the 4-year construction period?
- After opening of the facilities the project is assumed an estimated 1900 contractor employees with an estimated average base salary of \$125,000?
- The anticipated number of federal staff that will be at the site for operating the repository is 200 with an average salary of \$100,000?

Answer. We cannot confirm any of this data, as DOE doesn't share or provide any information to the State of Nevada. Even the most modest request is denied and requires a Freedom of Information Act request. The Department even routinely denies most of these requests. The data you cite appears consistent with DOE's Environmental Impact Statement for Yucca Mountain. It is worth nothing that the Clark County, Nevada economy is creating over 3000 news jobs per month.

#### RESPONSES OF ROBERT LOUX TO QUESTIONS FROM SENATOR CRAIG

*Question 1.* Do you think it would be in the best interest of this country, the state of Nevada—and the taxpayers—to allow the DOE and the NRC to expeditiously perform their duties, rather than continuing to stall the project at every opportunity?

Answer. DOE's inability to submit a high quality license application to the Nuclear Regulatory Commission is a problem of the Department's own making. Their failure to adhere to the requirements of the NRC to comply with the Licensing Support System is an example of the Department's incompetence that keeps it from following the law and other regulatory requirements. It isn't the State of Nevada that keeps DOE from proceeding.

*Question 2.* Would we be wrong to assume that you will never be satisfied with the scientific work done at Yucca Mountain?

Answer. As long as the data and the process to collect that data is flawed, Nevada will continue to challenge the scientific work at Yucca Mountain. What scientific work that has been done suggests the site is flawed and should abandoned, and as long as the Federal government persists to attempting to move this scientifically unsafe site forward, we will continue to challenge it.

*Question 3.* If the NRC licenses the repository will you abide by their decision, or will you and the state of Nevada continue to impede the Department's construction and operation of the facility?

Answer. Depending on the decision itself, we will whatever action we deem appropriate to protect the health and safety of Nevada citizens.

*Question 4.* The Nuclear Waste Policy Act directs the Secretary to enter into a consultation and cooperation agreement with the state of Nevada. To date, the State has consistently refused to enter into such an agreement with the Department. Does the state have any intention of ever entering such an agreement with the Department?

Answer. When the Department refuses to follow the law, as passed by Congress, what value would any written agreement have?

*Question 5.* Are there any circumstances under which you would be willing to work collaboratively with the Department of Energy to open a repository at Yucca Mountain?

Answer. We would certainly work with the Department to take reasonable and necessary steps to reclaim the site and to mitigate any significant adverse environmental impacts caused by site characterization activities at the site. Other than that, no.

*Question 6.* If the Department submits applications that meet or exceed all local, state and federal requirements, is the State prepared to grant DOE the permits needed to construct the repository?

Answer. Mere submission of a high quality license application, in and of itself doesn't mean that the site will necessarily receive a construction authorization. Until such time it is premature to respond.

*Question 7.* Is it not true that under this bill the State Engineer of Nevada could still deny the Department's application for water—based on availability and competing uses, for example—if that was appropriate?

Answer. Preempting the State Engineer's authority, by limiting two of the three statutory prongs of his authority is unconstitutional and will be challenged. Federal case law strongly supports Nevada is this arena. The three prongs of the state engineer's authority are intertwined and cannot be separated.

September 14, 2006.

Hon. PETE V. DOMENICI,  
 Chairman, Committee on Energy and Natural Resources, U.S. Senate, Washington,  
 DC.

DEAR MR. CHAIRMAN: The U.S. Nuclear Regulatory Commission appeared before your Committee on August 3, 2006. As a result of that hearing, you forwarded questions that were submitted for the hearing record by Senator Jeff Bingaman. The Commission's responses to those questions are enclosed. Under separate letter, Commissioner Gregory B. Jaczko intends to provide additional views.

If I can be of further assistance, please do not hesitate to contact me.

Sincerely,

REBECCA L. SCHMIDT,  
 Director Office of Congressional Affairs.

[Enclosure: As stated]

RESPONSES OF THE NRC TO QUESTIONS FROM SENATOR BINGAMAN

*Question 1.* The Nuclear Waste Policy Act defines a "repository" to include "both surface and subsurface" areas, but section 4(a) of S. 2589 would exclude any "surface facility" that is not "necessary for initial operation of the repository" from consideration as part of the license application. The Commission has said, both in Chairman Diaz's June 30 letter and in Mr. Virgilio's statement, that this provision can be read to "place certain surface facilities outside the NRC's jurisdiction."

*Question 1a.* Please identify the types of facilities that this provision may exclude from the Commission's jurisdiction.

Answer. Because the terms "necessary for initial operation," "infrastructure activities," "safety upgrades," and "site preparation" are not defined within S. 2589, the Commission is unable to determine what additional facilities might also not be necessary for initial operation. Under this provision, the Department of Energy would make such determinations. Section 4(a) provides that an application for construction authorization shall not be required to contain information regarding any surface facility other than those necessary for initial operation of the repository. Facilities other than those necessary for initial operation would result from some of the infrastructure activities discussed in Section 4(b) of S. 2589. Examples of "infrastructure" activities given in Section 4(a)(B)(3)(A) include, but are not limited to:

- (i) safety upgrades;
- (ii) site preparation;
- (iii) rail line construction and facilities to facilitate rail operations; and
- (iv) construction, upgrade, acquisition, or operation of electrical grids or facilities, other utilities, communication facilities, access roads, rail lines, and non-nuclear support facilities.

*Question 1b.* Would the provision enable the Department to exclude plans to construct spent fuel storage facilities from the license application on the grounds that interim storage facilities are not "necessary for initial operation of the repository"?

Answer. Yes, one possible reading of section 4(a) is that information about any surface facilities the Department of Energy decides it does not need for initial operation of a repository at Yucca Mountain, such as interim facilities for surface storage, or "aging" of spent fuel, could be excluded from the license application under Section 4(a) of S. 2589.

*Question 1c.* How might this provision affect the Commission's statutory responsibility to protect the health and safety of the public?

Answer. If the Department of Energy determines, under Section 4(a) of S. 2589, that interim storage or "aging" of spent fuel is not essential to operations of a repository, then the Nuclear Regulatory Commission may not have full jurisdiction over some of the surface facilities.

*Question 2.* Section 4(b) of S. 2589 authorizes DOE to "undertake infrastructure activities" at the repository without NRC's prior approval.

*Question 2a.* How does this provision compare with the NRC's "limited work authorization" rule for nuclear power plants? The limited work authorization rule requires an NRC licensing board to make a preliminary safety determination and environmental findings and the NRC regulatory staff to approve the activity before the applicant can begin work, does it not? Where are the similar protections in Section 4(b)?

Answer. The Nuclear Regulatory Commission's (NRC) "limited work authorization" rule, 10 CFR 50.10(e), does contain the provisions paraphrased in the question. Section 4(b) of S. 2589 does not contain similar provisions and authorizes the De-

partment of Energy to undertake certain activities without NRC review or approval. Of course, section 50.10(e) of NRC's regulations does not apply to Yucca Mountain. The current NRC regulations for Yucca Mountain contemplate some work at the site (see 10 CFR 63.2, definition of "commencement of construction") without NRC approval, but not as much work as the bill would allow.

*Question 2b.* Would section 4(b) enable the Department to construct spent fuel storage facilities at the repository before applying to the Commission for a license to receive and possess spent fuel at the site?

Answer. Yes. If the Department of Energy (DOE) determines that spent fuel storage facilities are necessary or appropriate to support construction or operation of a repository at the Yucca Mountain site, or to transport wastes to the site, DOE may designate such facilities as "infrastructure activities," and construct them pursuant to Section 4(b)(3). During the hearing on S. 2589, DOE said that the bill was not intended to allow DOE to build unregulated storage facilities, but the bill's language does not make DOE's stated intent clear.

*Question 3.* As I understand it, the NRC generally regulates transportation packaging and security, and the Department of Energy regulates shippers and routing.

*Question 3a.* How does Section 7 affect this division of authority?

Answer. The Nuclear Regulatory Commission's (NRC) role for Yucca Mountain shipments is the review and approval of spent fuel and high-level waste shipping packages, as required under Section 180(a) of the Nuclear Waste Policy Act of 1982, as amended (NWPA). We have also developed requirements calling for advance notification of State and local governments prior to the transportation of spent fuel and high-level waste under Section 180(b) of NWPA. Adoption of Section 7 would not affect these provisions of the Nuclear Waste Policy Act, and therefore, Section 7 does not appear to affect the existing division of authority between the NRC and the Department of Transportation (DOT). Since the Department of Energy (DOE) plans to take title and possession of the spent fuel at commercial reactor sites prior to shipment to Yucca Mountain, DOE would be responsible for safety and security of the shipments outside of NRC regulatory oversight (except for use of NRC certified package designs). DOE has stated its intention to follow NRC's security regulations for its shipments to Yucca Mountain.

The DOE's stated policy is also to follow the DOT regulations governing shippers, carriers, and routing. Shipping routes are selected by the shippers or carriers in accordance with DOT regulations. The NRC has a role in reviewing and approving the security of selected shipping routes for commercial spent fuel shipments, but not for shipment of DOE-titled spent fuel.

*Question 3b.* Does the Atomic Energy Act give the NRC the authority, and does it have the expertise, to regulate shipping routes?

Answer. While the Nuclear Regulatory Commission (NRC) has broad authority to regulate shipment of commercial radioactive material under the Atomic Energy Act (AEA), including the routing of NRC-licensed materials, this authority does not extend to shipments by or for the Department of Energy (DOE).

To avoid duplication with Department of Transportation (DOT) regulations, NRC requires, under a memorandum of understanding (MOU), that its licensees follow DOT regulations for routing and carrier safety. In implementing this MOU, the NRC has exempted public and contract carriers making commercial shipments from the requirement to have an NRC license, with the exception of carriers shipping spent fuel and special nuclear materials. In these cases, public and contract carriers are granted a limited general license under 10 CFR 70.20b as a way of ensuring that physical protection measures are being implemented during spent fuel shipments.

This has resulted in a system in which highway routes for commercial spent fuel shipments are selected by shippers and carriers based on DOT safety requirements, and subsequently reviewed and approved by NRC for implementation of its security requirements. The DOT has not implemented routing requirements for rail shipments. However, rail routes used for commercial (not DOE) shipments of NRC-licensed materials are reviewed and approved by NRC for compliance with NRC security requirements. Thus, NRC's primary expertise and experience in reviewing shipping routes for NRC licensed material is focused on security concerns.

*Question 4.* Under current law, the NRC can license new nuclear power plants, even though a nuclear waste repository is still not available, on the basis of the Commission's "waste confidence" rule, which says that the Commission has a reasonable assurance that a repository will be available soon. Section 9 requires the Commission to "deem" that sufficient disposal capacity will be available "without further consideration."

*Question 4a.* Does the Commission support Section 9?

Answer. The NRC does not object to this provision of the legislation.

*Question 4b.* The Court decision that gave rise to the Commission's waste confidence rulemaking found "no implication that Congress intended that the NRC ignore new knowledge or analysis in its licensing decisions." *Minnesota v. NRC*, 602 F.2d 412, 419 (D.C. Cir. 1979). Section 9 would require the Commission to ignore new knowledge or analysis on the availability of waste disposal capacity in its reactor licensing decisions, would it not?

Answer. Section 9 of S. 2589 would direct the Commission to deem, without further consideration, that sufficient capacity will be available in a timely manner to dispose of the spent fuel and high-level waste from the operation of new reactors and related facilities. In its 1990 Waste Confidence decision, the Commission concluded that spent nuclear fuel can be safely stored without significant environmental impact for at least 100 years, if necessary. Spent nuclear fuel is being managed safely today and the Commission has every expectation that it can and will be managed safely in the future with at least the same level of protection as is in place today.

"Waste Confidence" is a consideration in the Commission's environmental review when deciding whether to permit the construction or operation of a new reactor or related facility. It is not unusual for Congress to specify the bounds of environmental reviews. Moreover, Congress has the authority to impose such bounds. Of course, the NRC would retain the authority to inform Congress of all relevant new knowledge or analyses.

*Question 4c.* How can the Commission discharge its statutory responsibility to ensure adequate protection of the health and safety of the public if it is forbidden to consider whether there is reasonable assurance that adequate waste disposal capacity will be available in the foreseeable future?

Answer. The NRC has a statutory responsibility only with respect to facilities within its jurisdiction, and that jurisdiction does not include all nuclear facilities. Congress has chosen to assign responsibility for some decisions on nuclear activities to other agencies, and even to Congress itself. The Commission has expressed confidence that spent fuel and high-level waste produced by nuclear facilities can be safely disposed of and safely stored until disposal is available. In its 1990 Waste Confidence decision, the Commission concluded that spent nuclear fuel can be safely stored without significant environmental impact for at least 100 years, if necessary. Spent nuclear fuel is being managed safely today and the Commission has every expectation that it can be and will be managed safely in the future with at least the same level of protection in place today.

The Commission does not read Section 9 of S. 2589 as forbidding all future consideration of the availability of future disposal capacity. Instead, Section 9 appears to apply only in the context of decisions about permitting construction of new reactors or related facilities. For example, the issue of safe disposal of spent nuclear fuel and high-level waste will be considered in the licensing proceeding for a geologic repository.

September 8, 2006.

Hon. PETE V. DOMENICI,  
*Chairman, Committee on Energy and Natural Resources, U.S. Senate, Washington, DC.*

DEAR MR. CHAIRMAN: On August 3, 2006, Mr. Martin Virgilio, of the Nuclear Regulatory Commission staff, appeared before the Committee on Energy and Natural Resources to give testimony regarding S. 2589, "Nuclear Fuel Management and Disposal Act." From that hearing, you forwarded questions that were submitted for the hearing record. In particular, you asked the Commission for its views on Section 9, which presumes that sufficient capacity to dispose of spent nuclear fuel and high-level radioactive waste resulting from reactor and related nuclear facilities will be available in the future. This provision would obviate the need for the Commission to make future policy decisions regarding waste confidence.

The Commission has determined as part of the so-called "waste confidence rule" at 10 CFR 51.23 that commercial spent nuclear fuel can be safely managed at either onsite or offsite independent spent fuel storage installations. I believe that the Commission should continue to have the authority to make such determinations in the future to ensure public health and safety and increase public confidence. As a result, I believe that Section 9 should not be retained.

Sincerely,

GREGORY B. JACZKO.

NATURAL RESOURCES DEFENSE COUNCIL,  
Washington, DC, August 30, 2006.

Hon. PETE V. DOMENICI,  
Chairman, Committee on Energy and Natural Resources, U.S. Senate, Washington,  
DC.

DEAR CHAIRMAN DOMENICI: Thank you again for the opportunity to testify before the Senate Committee on Energy and Natural Resources on August 3, 2006 on S. 2589. Please find attached my responses to the Committee's questions for the record.

If you have any questions, please do not hesitate to call me at (202) 289-2371. Thank you again for the opportunity to testify and for including these responses in the record.

Sincerely,

GEOFFREY H. FETTUS,  
Senior Project Attorney.

RESPONSES TO QUESTIONS FROM SENATOR DOMENICI

*Question 1.* Your testimony reviews the "waste confidence" rulemaking and describes NRC's findings related to the safety of spent fuel generated at the reactor and its ultimate disposal.

What impact would consolidated dry cask storage at a location other than the reactor site, have on your assessment of a "waste confidence" determination? Interim Storage?

Answer. The consolidation of spent fuel at an interim storage site would have no impact on our assessment of Congress codifying the "waste confidence rule."

First, as I stated in my testimony before the Committee, whether or not there is adequate confidence that there will be available a permanent solution for disposal of high-level radioactive waste and spent nuclear fuel should be a decision made by technical experts via a public process. A compromise on how the issue would be addressed in a scientific and publicly acceptable manner was reached over twenty years ago. The bill currently under consideration, S. 2589, would do away with that carefully created process and would legislate a potential fiction into permanent existence. Just because Congress has codified that there will be a final, safe resting place for nuclear waste does not necessarily mean that this is true. Put more bluntly, simply legislating the "waste confidence" rule into existence does not change the reality that the proposed Yucca Mountain is not yet licensed, and may never be, and the fact that at this time our nation does not currently have in place a viable, permanent solution for commercial and defense nuclear waste.

Second, we agree with the long-held scientific consensus that the best option for nuclear waste disposal is a deep geologic repository that meets strict, protective environmental and public health standards. By contrast, spending significant amounts of time and money on "interim" measures could have the misguided and inappropriate effect of distracting the nation's attention from permanent, publicly acceptable solutions. Consolidating dry cask storage at existing sites, under a strict security regime, would certainly be an improvement over more years of spent fuel rods sitting in pools long after they have cooled. But creation of an interim site, or multiple interim storage sites, will ensure high costs and greatly increase nuclear waste transportation prior to a final disposal solution. In short, it is an unnecessary distraction.

*Question 1a.* What impact would spent fuel recycling have on your assessment of a waste confidence determination?

Answer. None. The question of "waste confidence" is, again, whether a permanent location for final disposal of defense and commercial nuclear waste is certain within a reasonable time frame. Even if the historically dysfunctional technologies of reprocessing spent nuclear fuel and plutonium fast reactors could be instituted some time in the next half century (a prospect we doubt will transpire), our nation will still require at least one deep geologic repository.

Indeed, the current Administration has been very clear that it is pursuing both a plutonium reprocessing and fast reactor program (the Global Nuclear Energy Partnership of GNEP) and Yucca Mountain. Even if the U.S. Department of Energy (DOE) is able to develop the necessary reprocessing, fuel fabrication, and reactor technologies required for GNEP, the resulting waste would still include long-lived radionuclides that would need disposal in a geologic repository. For example, technetium, which has a half-life of 212,000 years and poses one of greatest public health risks at the proposed Yucca Mountain site, would be part of the resulting reprocessing waste under DOE's current plans. DOE has indicated that they intend

to store the shorter-lived radioactive waste above ground for hundreds of years in order to put more long-lived radioactive waste into Yucca Mountain.

Reprocessing and plutonium recycle programs in other countries have not solved their nuclear waste problem either, and those few countries that have adopted the technology recognize that they need deep geologic disposal. To achieve GNEP's claimed reduction in the radioactivity of future nuclear waste, every fourth or fifth reactor in the United States would have to be a fast reactor. Yet, fast reactors have proved to be highly unreliable and prone to fires from leaks of their highly corrosive liquid sodium coolant. Fast reactors are also uneconomical, and would cost \$80 to \$100 billion for the 20 to 25 fast reactors needed to transmute the fuel annually discharged from existing U.S. power reactors. Globally, this would add hundreds of billions to a trillion dollars to the cost of nuclear-generated electricity and in no way resolve the long-term waste problem.

Moreover, approximately \$100 billion has already been spent globally trying to develop a plutonium economy, but no country has successfully commercialized reprocessing and transmutation technologies. On the contrary, reprocessing programs in the UK, France, Japan and the other countries are heavily dependent on overt and hidden government subsidies and ownership. The U.S. National Academy of Sciences estimated in 1996 that reprocessing would "easily" cost \$100 billion just for the backlog of waste that had been produced up to that time. Meanwhile, wastes from past defense and commercial reprocessing in the U.S. continue to threaten major water resources, including the Savannah River, the Columbia River, the Snake River Plain Aquifer, and Lake Erie. Tens of billions of taxpayer dollars will ultimately be required over several decades to cleanup nuclear weapons sites and the failed commercial reprocessing site at West Valley, New York. This reprocessing waste cannot be reused and is slated for deep geologic disposal.

Thus, a misguided national program for plutonium reprocessing and fast reactors would not alter our assessment that the "waste confidence rule" should be addressed in a scientific and publicly acceptable process, not by legislative fiat.

*Question 2.* Your testimony mentions that nuclear recycling in the mid-1970's was uneconomical, environmentally unsound and represented a serious proliferation risk.

Are you familiar with recent study by the Boston Consulting that shows that the economics of recycling and disposal of high level waste in Yucca Mountain are comparable to the economics of the targeted once-through U.S. fuel cycle?

Answer. Yes, NRDC is familiar with the July 2006 study by the Boston Consulting Group (BCG), *Economic Assessment of Used Nuclear Fuel Management in the United States*. We have reviewed the study in detail and also include herein the comments of Matthew Bunn at Harvard University. NRDC's assessment is that the study lacked the necessary independence and expertise to be credible, its conclusions are therefore biased and overly optimistic, and not even its authors will stand by its assertion that the economics of plutonium reprocessing are cost-competitive with other forms of power generation. For example, the report commences with a disclaimer that essentially states that the authors stand by nothing in their report. Quoting from the first page of the report in pertinent part:

Disclaimer: This report was prepared by The Boston Consulting Group at the request of AREVA. BCG reviewed publicly available information and proprietary data provided by AREVA, but did not undertake any independent verification of the facts contained in those source materials. Changes in these facts or underlying assumptions could change the results reported in this study. Any other party using this report for any purpose, or relying on this report in any way, does so at their own risk. No representation or warranty, express or implied, is made in relation to the accuracy or completeness of the information presented herein or its suitability for any particular purpose.

*Economic Assessment of Used Nuclear Fuel Management in the United States*, at ii (emphasis added). This disclaimer makes perfectly clear the degree of attention readers should give to the study, but we went ahead and assessed the document anyway.

We corresponded with Matthew Bunn at Harvard University and his analysis and comments follow, designated by the indented bullets:

The study is replete with optimistic assumptions.

- BCG assumes a unit cost for plutonium reprocessing and mixed-oxide fuel fabrication (MOX) of \$520/kgHM, far lower than AREVA has ever managed to achieve for either process. Page 17 of the Executive Summary, for instance, includes a chart showing BCG estimates costs per kilogram for reprocessing at

roughly one-third the costs actually achieved in France. As the BCG authors put it, one of the “key differentiating elements” between their study and other studies are “integrated plant costs significantly lower than previously published data.” See Executive Summary at 14.

- By contrast, the current effort to use AREVA technology and plant designs in the United States—*i.e.*, the construction of a MOX plant at the Savannah River Site in South Carolina—is leading to unit costs several times *higher* than those cited by the report and achieved in France. This experience is not mentioned in the BCG report, and no argument is offered as to why the projected facility will have a cost result that is the opposite of the real experience in this country.

Mr. Bunn continued with more specifics, addressing the specifics, BCG arrives at its low unit cost estimates for their projected plant by using a number of dubious assumptions:

- BCG assumes that plant capacity can be scaled up dramatically with only a minor increase in capital or operating cost. On p. 16, for example, BCG notes that the capital cost of the existing French facilities was \$17.8 billion (in 2006 dollars), but then assumes that the capacity can be increased by more than 50% (assuming, generously, that the two La Hague plants should be considered to have a combined capacity of 1600 tHM/yr) with an additional capital cost of only \$1.5 billion, less than 10% of the original capital cost.
- BCG assumes that the plant will always operate at full capacity with no technical problems, no contract delays, etc. No reprocessing plant or mixed oxide (MOX) plant in the world has ever done so.
- BCG assumes that there will never be any substantial lag in fuel fabrication, since, to save money, the plan cuts out all funding for having a plutonium storage area. In France, by contrast with this wishful scenario, tens of tons of plutonium have built up in storage as a result of lags in the use of this plutonium as fuel. [NRDC Comment: This is a significant cost that is simply ignored. In fact, DOE's revised GNEP plan assumes and indeed requires a major capacity for on-site storage of separated product at its newly proposed commercial-scale “Consolidated Fuel Treatment Center,” as the revised plan would provide 2000-3000 MTHM/yr of separation capacity well in advance of the capacity to fabricate transmutation fuels and burn them in a sufficient number of fast reactors].
- BCG assumes government financing at a 3% rate. As in the 2003 Harvard analysis of reprocessing economics (*The Economics of Reprocessing Vs. The Direct Disposal of Spent Nuclear Fuel*, Belfer Center for Science and International Affairs, Project on Managing the Atom, December 2003), a plant with the same capital and operating costs and nameplate capacity as the British reprocessing plant, THORP (whose costs are generally similar to those of UP3), financed at such a government rate, which successfully operated at its full nameplate capacity throughout its life with no interruptions (a far cry from the real experience) would have a unit cost for reprocessing alone of roughly \$1000/kgHM. By contrast to this real world experience, BCG assumes \$520/kgHM for BOTH reprocessing and MOX fabrication combined. But if the exact same plant were financed privately, at the rates EPRI recommends assuming for power plants owned by regulated utilities with a guaranteed rate of return, the unit cost would be over \$2000/kgHM. If financed by a fully private entity with no guaranteed rate of return, the cost for the same facility would be over \$3000/kgHM. For the government to own and operate a facility that would not only reprocess spent fuel but manufacture new MOX fuel on the scale BCG envisions would represent an immense government intrusion on the private nuclear fuel industry.
- In the 1996 National Academy of Sciences (NAS) review of plutonium recycling and transmutation technologies, the NAS concluded that estimates like this effort by BCG of unit costs for a new plant were unrealistically low, and that the actual costs of real plants provided the best guide for future costs. BCG appears to have ignored that advice.
- Notably, the capital cost BCG acknowledges for the existing French plants is higher than the estimates used in the 2003 MIT study; had BCG taken this actual experience as the basis for estimating future costs, BCG would have found reprocessing and MOX prices *higher* than those used in the 2003 study, not lower.

Moving on from the specifics provided by Mr. Bunn, the reduction in repository capacity touted in the conclusion of the BCG report requires the introduction of fast reactors on a massive scale. We believe this to be an unwise policy for a number



of reasons. The United States, Europe and Japan spent tens of billions of dollars in the 1970s and 1980s trying to develop plutonium fast-breeder reactors (like the proposed GNEP “advanced burner reactors,” but with uranium “blankets” added to “breed” more plutonium than is consumed in the reactor). These fast reactors proved to be uneconomical, highly unreliable, and prone to fires due to leaking liquid sodium coolant, which burns spontaneously when it comes in contact with air or water. Thus, we have little faith there will be a “fleet” of fast reactors and any meaningful reduction in what must eventually be sent to a repository.

Reprocessing proved to be uneconomical in the U.S., U.K, Japan and France. Implementing *just the initial demonstration phase* of the GNEP as described by the DOE in its Advanced Notice of Intent to Prepare an Environmental Impact Statement (May 2005), will cost taxpayers \$30 billion to \$40 billion over the next 15 years without generating a single kilowatt of commercially available electric power. Even with newly announced orientations of the program—frontloading some of the more expensive items like a commercial scale Fast Burner Reactor—we doubt that initial 15 year estimate will be any less than what we calculated in May of this year. Equally troubling, DOE has, to date, refused to make public any detailed cost studies.

And there are immediate budgetary concerns. Funding requests for plutonium recycle related programs total more than \$1 billion dollars in fiscal year 2007 (this figure includes not only GNEP, but DOE’s Advanced Fuel Cycle Initiative and spending on a MOX plutonium fuel plant, among other items). In short, the entire scheme represents a bizarre departure for an administration professing abhorrence of excessive federal spending and reverence for the workings of the free market. Only the plutonium lobby would be so bold as to propose that the blueprint for meeting our electricity needs be based on the marriage of two technologies that are proven commercial failures. For a more detailed presentation of our concerns with the GNEP program, please see our document, *Peddling Plutonium, An Analysis of the President’s Global Nuclear Energy Partnership*, found on our website at <http://www.nrdc.org/nuclear/gnep/agnep.asp>.

#### RESPONSES TO QUESTIONS FROM SENATOR CRAIG

*Question 1.* Do you believe that new nuclear plants are needed to help reduce greenhouse gas emissions?

Answer. The threat of climate change is sufficiently dire that all low-carbon technologies should be intensively reviewed for their potential to effect a timely response to the challenge of swiftly stabilizing and then reducing global carbon emissions. Unfortunately, the nuclear power industry in its present state suffers from excessive costs and too many security, safety, and environmental problems to qualify as a leading means to combat global warming pollution. The vast majority of expert forecasts suggest that nuclear power will likely play at best a modest role in generating the world’s future electrical output, and that the industry will be doing well if it manages to maintain its current 16% share of global electricity production.

Large-scale nuclear plants remain uneconomic to build. And while the nuclear fuel cycle emits little global warming pollution, nuclear power still poses globally significant risks that need to be further reduced, including:

- Diversion of “peaceful” nuclear facilities and materials to secret nuclear weapons programs;
- Theft and terrorist use of nuclear materials;
- Accidental releases of radioactivity, ranging from locally harmful to potentially catastrophic;
- The vulnerability of some spent nuclear fuel storage pools to terrorist attack;
- Occupational and public health risks associated with uranium mining and milling; and
- Long-term leakage from underground repositories intended to isolate high-level radioactive waste and spent fuel from the human and natural environment for tens to hundreds of thousands of years
- Dependence on fluctuating inland water bodies for cooling in a future of characterized by more frequent droughts and higher surface water temperatures, leading to more frequent shutdowns or requirements for less efficient, higher cost dry-air cooling systems

The underlying facts of energy economics have not changed—there is still no “nuclear renaissance.” Rather, there is a renaissance of federal subsidies for the industry. The nuclear industry has historically received over \$80 billion in development support and subsidies, in today’s dollars. And recently, Congress granted approximately \$10 billion in new subsidies and regulatory assistance in the 2005 Energy

Policy Act, affecting the first 6000 megawatts of new nuclear generation to be constructed. But a “nuclear renaissance” depends on the economics of the next 1000 megawatts of new capacity after the subsidies, and so far we see nothing that indicates the nuclear industry will be able to reduce its capital costs to competitive levels. To gain sufficient economies of scale to compete, nuclear reactors need to be large—typically  $\geq 1000$  MW. This makes their capital requirements (\$2.5-\$4 billion each) quite daunting, and these reactors require a long investment recovery period, so in the absence of continuing subsidies, we believe private capital will continue to look unfavorably on this option. A mandatory and declining carbon cap that results in pricing carbon emissions allowances at \$50-100 per ton would significantly aid nuclear’s ability to compete with fossil fueled plants, but such a cap would also advantage nuclear’s decentralized and renewable generation competitors, so it remains to be seen who will win that race.

Even if a few new nuclear plants managed to get underway with the assistance of the subsidies provided in the 2005 Energy Policy Act, the economics of wind, solar, efficiency and combined cycle generation are a moving target, and continually improving. Unless the cost of natural gas rises above \$14/MMBtu and stays there for a prolonged period, and renewable and efficiency options are stymied by misguided policies, we do not believe private capital will have substantial interest in financing new nuclear plants.

Indeed, the most we would get under the current 2005 Energy Policy Act level of subsidies is 6,000 megawatts (MW) of new capacity, divided into 4-5 big units. For the build cost of one 1,000 MW reactor \$2.9 billion—the State of California thinks it can use tax credits to leverage in 10 years some 3,000 megawatts of private investment in net-metered solar-rooftop distributed generation, with payback periods after subsidy on the order of five years, rather than the 25-40 years needed for a nuclear reactor.

Throw in similarly enlightened public policies to encourage easily achieved efficiency improvements, and nuclear could have a very hard time competing after the first few heavily subsidized units. NRDC’s energy efficiency expert David Goldstein notes that the \$2.9 billion California subsidy could also leverage 1,500 MW of efficiency at end use operating 8,760 hours per year, with zero or lower continuing operational costs and no incremental costs for transmission, based on 10 years of California measured results. After accounting for reserve margins, transmission losses, and system load factors, meeting this much additional demand through nuclear additions to baseload would likely require on the order of 2000-2500 megawatts of new capacity, or roughly two nuclear power plants at a cost of \$5.8 billion.

In short, subsidizing detailed engineering design, licensing, and construction of a few large nuclear power plants will cost the taxpayers billions of dollars, but will not significantly reduce the high capital cost of subsequent nuclear plants relative to alternative sources. Hence these subsidies are unlikely to stimulate the widespread deployment of non-carbon emitting technology needed to make a dent in reducing global warming emissions, and may even be counterproductive by siphoning scarce government resources away from more productive investments that have the actual potential to transform energy markets on a global scale.

Looking at the problem on a global scale, for nuclear power to have any appreciable impact on global warming, nuclear capacity globally—now about 440 plants—would have to be increased several-fold over the next few decades. This would mean adding a dozen or so new uranium enrichment plants worldwide, a similar number of Yucca Mountain—type geologic repositories for spent nuclear fuel, and a significant expansion of uranium mining. Current international arrangements are insufficient to prevent a non-weapon state, such as Iran or Japan, from suddenly changing course and using “peaceful” uranium enrichment or spent-fuel reprocessing plants to separate nuclear material for weapons. Finally, there is not one single long-term geologic repository for spent nuclear fuel in operation anywhere in the world.

All of these problems have solutions, but for nuclear power to qualify as a significant global carbon reducer, the international nuclear industry, the respective governments, and the International Atomic Energy Agency must insure that:

- Nuclear fuel cycles do not afford access, or the technical capabilities for access, to nuclear explosive materials, principally separated plutonium and highly enriched uranium;
- The Nuclear Nonproliferation Treaty regulating nuclear power’s peaceful use is reinterpreted to prohibit the spread of latent as well as overt nuclear weapons capabilities, by barring national ownership and control of uranium enrichment (or reprocessing) plants in non-weapon states;

- The occupational and public health risks associated with uranium mining, milling, and the nuclear fuel cycle are remedied; and
- Existing and planned discharges of spent nuclear fuel and high-level radioactive waste will be safely sequestered in geologic repositories.

Until such time as the nuclear industry is able to meet these requirements, NRDC favors more practical, economical, and environmentally sustainable approaches to reducing both U.S. and global carbon emissions, including clean, flexible, renewable energy and efficiency technologies.

In sum, the most economically efficient way to address these risks is to internalize their costs in the market price of electricity and fuels. The United States can do this by regulating carbon dioxide emissions, the unique risks of nuclear power, and other associated energy production risks, and then letting the market pick the lowest-cost supply and demand technologies. The nuclear industry rejects this approach. Its lobbyists seek additional federal subsidies so they can reap profits on what would otherwise be dubious investments. The likely outcome of this approach, exacerbated in this time of severe budget deficits, would be to displace cleaner, more competitive technologies while failing to reduce global warming pollution in any meaningful way. The fastest, cheapest, and cleanest solutions to global warming will come from providing energy efficiency and renewable energy a chance to compete on equal terms with other energy investments.

#### RESPONSES OF J. BARNIE BEASLEY JR. TO QUESTIONS FROM SENATOR DOMENICI

*Question 1.* Southern Company and its subsidiaries own both the Farley Nuclear plant in Alabama and the Vogtle Plant in Georgia.

I looked up in the DOE Acceptance Priority Ranking spent fuel booklet to see where Farley and Vogtle are in the acceptance queue for DOE to pick-up spent fuel at these sites. Farley is number 253 and Vogtle is number 757.

I find it interesting that according to the current plan, Farley as number 253 will have 21.2 metric tons of its spent fuel picked-up on the first visit by DOE.

I say first visit as the next visit is number 334 when they are scheduled to pick-up 24.2 metric tons. According to the Library of Congress in 2004, the Farley plant had 903.8 metric tons of spent fuel on site.

According to DOE's own estimates they wouldn't get to Farley until sometime in the sixth year, not until 2023 and then only take possession of 21.2 metric tons. DOE will not make [it] to Vogtle for several more years and then again only take a small fraction of what's currently on site.

If DOE is able to keep to the schedule they have proposed and begin to accept fuel in 2017, both your current plants will still have fuel on site for over a decade beyond 2017.

*Question:* Doesn't it make sense for the federal government to go ahead and meet its obligation to [your] company and your ratepayers and begin to accept fuel before Yucca Mountain opens at an interim storage facility?

*Answer.* Yes. It is important to the nuclear power industry as a whole that spent nuclear fuel be removed from reactor sites. The storage of this used fuel diverts resources and manpower from other productive uses at the nuclear power plants and exposes the federal government to growing liability for the continuing breach of contract. It also creates continuing litigation costs for both parties and utilizes court resources unnecessarily. The federal government should strive to meet its obligations and minimize the impact of this breach. Furthermore, the continued storage of used fuel at the reactor site also threatens to impact the decommissioning of the nuclear power plants, which could further increase costs for which the federal government will be liable. In fact, there are several utilities that have begun decommissioning but cannot at this time complete that process because of the presence of used fuel on the reactor site. This additional cost impacts utilities and their ratepayers even after the nuclear power plant has ceased to be productive. The industry strongly supports measures that require and enable DOE to fulfill its obligation as soon as possible and believe that some form of interim storage is the only option that can accomplish that objective.

Although my role in the hearing is to represent the industry as a member of the NEI Executive Committee, I am pleased to address the points you've raised with regard to Plants Farley and Vogtle. While there may be minor variations in the precise priority of acceptance of specific quantities of used fuel, depending on the document in question, The Acceptance Priority Ranking and Annual Capacity Report published by the Department of Energy (DOE) in 2004 indicates that the first delivery of used fuel to DOE from Plant Farley would occur in the fifth year of repository operations. Similarly, the first shipment from Plant Vogtle would occur in the ninth

year of repository operations, using the same APR/ACR Report. As a result, current inventories of used fuel, in addition to the discharges of additional used fuel from the reactors occurring after the commencement of repository operations, will likely continue to be stored at Southern Nuclear's reactor sites for several years after the commencement of repository operations regardless of when that occurs. Prompt commencement of interim storage by DOE would allow the process of removing this used fuel from the plant site to begin and be completed earlier than with the repository alone.

*Question 2.* Please explain why this is important and the contribution it could make toward reducing potential litigation in the license application process for new nuclear plants.

*Answer.* If DOE were to begin removal of used fuel from plant sites on an expedited basis—in advance of the schedule for the commencement of repository operations—the impact on plant operation and the growing federal liability for the costs of on-site storage could be mitigated. Further, the commencement of interim storage by DOE would provide the public with added confidence that the federal government will satisfy its obligations under the Nuclear Waste Policy Act in the context of new plants. In addition to interim storage, accelerating the annual rate of acceptance of used fuel by DOE from 3000 metric tons per year to a rate that reflects the need to overcome the effects of DOE's delay in performance, currently in its eighth year, would also benefit all of these areas. The potential for mitigation of the problems caused by extended on-site storage of used fuel, mitigation of the liability of the federal government, as well as the demonstration by the government that it is capable and willing to satisfy its legal and contractual obligations for both existing and new plants, all make expeditious transfer of used fuel from reactor sites to federal interim storage facilities a responsible course of action.

In order to accomplish these objectives, however, interim storage must be accomplished in a reasonable and efficient way that does not impair the schedule for the opening of the repository. Experience tells us that siting, licensing, and developing an interim storage facility for used fuel could be a controversial and contentious process. In order to commence operation of such facilities on a schedule that results in the delivery of used fuel to DOE significantly in advance of the schedule for repository operations, the siting and licensing process must be streamlined, and the number of such facilities must be manageable. DOE's resources, which ultimately come from our customers, should not be stretched thin by overly bureaucratic siting and licensing processes, or by trying to develop more sites than are needed to accomplish the job. Similarly, interim storage should not detract from the licensing and development of Yucca Mountain, which has been designated by the President and Congress as the principal used fuel storage and disposal facility for the United States.

Accordingly, the industry prefers locating interim storage facilities at or near the Yucca Mountain site. The siting of such facilities at the site of the repository would be efficient, cost-effective, and would simplify transportation of used fuel by eliminating an intermediate leg of the journey from plant site to Yucca Mountain. Moreover, Congress could authorize the Nuclear Regulatory Commission (NRC) to issue a general license, similar to those issued to licensed reactors, for interim storage at Yucca Mountain. The extensive site characterization work conducted at Yucca Mountain that led to the President's recommendation of Yucca Mountain as the repository site and Congress' affirmation of that recommendation justifies such a general license for interim storage. Absent designation of Yucca Mountain as the site of an interim storage facility, the designation of one or two existing federal sites provides the best chance of achieving the benefits of interim storage without diverting resources and attention from the repository.

*Question 3.* Do you believe Congress should clarify that Yucca maintain for a considerable period the ability to monitor and retrieve waste packages to help foster public confidence in the project and allow future generations the option of taking advantage of technological developments?

*Answer.* Yes. Yucca Mountain should maintain the ability to monitor and retrieve waste packages for an extended period. I believe that the Nuclear Waste Policy Act of 1982, as amended (NWPA), directs DOE to maintain this flexibility, but does not specify the period of time during which such capability should be maintained. It is my understanding that DOE intends to monitor used fuel placed in the repository for as long as 300 years. I believe that legislation that not only clarified DOE's obligation for future generations, but which also takes the extended period of monitored retrievability into consideration in connection with the licensing of the repository, would be a very positive step.

## RESPONSES OF J. BARNIE BEASLEY JR. TO QUESTIONS FROM SENATOR CRAIG

*Question 1.* Would you please explain the issue about the Standard Contract for Disposal of Spent Nuclear Fuel as mentioned in your testimony and what you think Congress should do to address this issue?

Answer. The NWPAs require applicants for licenses for the construction and operation of nuclear power plants to have executed, or be in the process of negotiating, a contract with DOE under the NWPAs for the removal of spent nuclear fuel. Although the NRC has not officially addressed the issue, at least one Commissioner has indicated that an executed contract will be a prerequisite to the issuance of a Combined Operating License (COL) for a new nuclear power plant. At a minimum, the NWPAs require that an applicant for a COL be engaged in good faith negotiations for such a contract. It would be desirable to have such contracts in place by the time the application for a COL is submitted to NRC. The Standard Contract, as set forth in 10 C.F.R. Part 961, codifies the terms of the contracts executed by DOE with the existing fleet of plants.

Unfortunately, the federal government is already in breach of the contracts executed with respect to the existing fleet of nuclear reactors because of, among other things, its failure to commence acceptance of used nuclear fuel. It is my understanding that DOE has not responded to requests by some utilities for information regarding the execution of contracts for new plants.

It is important for DOE to satisfy its existing obligations under the NWPAs by entering into contracts that cover new plants that may be built. Such contracts should satisfy the requirements of the NWPAs by including deadlines for the commencement of acceptance of used fuel from the new plants. The deadline for the commencement of acceptance should reflect DOE's obligation under the NWPAs, the date scheduled for the commencement of operation of the new plants, and the date such new plants are expected to have their first fuel ready for delivery to DOE. I want to emphasize that the contracts should not be amended simply because DOE has failed to perform or to relieve DOE of its obligation to remove used fuel on a firm schedule that is consistent with DOE's obligation under the NWPAs. DOE should undertake discussions through the Nuclear Energy Institute (NEI) with companies interested in applying for a COL with the objective of executing new contracts prior to the time COL applications begin to be filed in late 2007.

*Question 2.* Do you believe that the DOE should accept and transport fuel in NRC certified systems already purchased and loaded by utilities?

Answer. Yes. Utilities have expended millions of dollars loading used fuel into dry casks solely as a result of the federal government's breach of its obligations under the Nuclear Waste Policy Act and the contracts executed in accordance with the Act. These casks can be used for transportation and there is no practical reason why they should not be used. If utilities are required to remove used fuel from these containers in order to deliver that used fuel to DOE, those activities will further increase DOE's liability to the utilities under the contracts. It will also expose plant workers to additional dose for no practical reason. Additionally, for some utilities that have already begun decommissioning and demolished their spent fuel pools, such a transfer will be an even more expensive and time-consuming process.

DOE can limit that liability and exposure, and reduce the amount of wasteful spending by both the federal government and utilities in litigating these claims, by accepting used fuel from utilities in any NRC-certified container and/or transportation cask. Any transportation, storage and disposal scheme should include the acceptance of used fuel by DOE without forcing the utility to first remove the fuel from the system. Acceptance of the used fuel in utility storage containers could also potentially provide a mechanism for the resolution of claims by utilities for the cost of the containers without the necessity of additional litigation.

*Question 3.* What is the cost of litigation due to DOE not fulfilling its obligation (over 60 cases pending)?

Answer. The total cost of the litigation arising out of the federal government's failure to satisfy its obligations under the Act consists of the damages for dry cask facilities, modifications to plant structures and ongoing operation and maintenance of the facilities, among other costs. Without knowing when the Government's breach of contract will end, it is impossible to quantify the ultimate cost of DOE's breach with precision. Settlements with companies such as Exelon and South Carolina Electric and Gas, and judgments in favor of TVA and the Sacramento Municipal Utility District have been estimated by some to be valued in the hundreds of millions. Other utilities, including but not limited to Alabama Power Company and Georgia Power Company, have finished the trials of claims against the Government but the Court of Federal Claims has yet to render a judgment.

It is important to note that the claims that have been tried, such as TVA's and Georgia and Alabama Power's, only cover damages incurred by the utilities prior to the year of trial. Because of a ruling by the Court of Appeals for the Federal Circuit in 2005, additional claims will have to be filed by these utilities in future years to recover the additional costs that will be incurred in storing used fuel that should have been removed by the Government. The exact amount of the cost to the Government from such claims will have to await judicial determination. Most estimates of the Government's liability for these claims are measured in the tens of billions of dollars.

The damages for on-site storage costs referred to above do not include the litigation costs of both the utilities and the federal government. The litigation that utilities have been forced to pursue against the federal government is extremely expensive for both sides. In addition, the costs above do not include the millions of dollars each year paid by utilities to the Nuclear Waste Fund. In most cases, these costs are borne by customers, through rates or other charges for electricity. These ratepayers are paying for a service that is not being provided, as well as paying for the cost of the litigation and the on-site storage. Finally, the Department of Justice has fought attempts by utilities to recover the financing costs (i.e. cost of capital) associated with expanding used fuel storage capacity that have been claimed by utilities. If that challenge is successful, another large cost attributable to the Government's failure to perform would go uncompensated.

*Question 4.* Can you please discuss the potential impacts on ratepayers of interim storage?

Answer. The impact of interim storage on ratepayers depends on the funding mechanism selected by Congress to finance the construction and operation of interim storage. First of all, to the extent interim storage enhances the Government's ability to satisfy its obligations under the NWPA, it could reduce the cost of on-site storage of used nuclear fuel. On-site storage costs are ultimately borne by ratepayers, so interim storage would reduce ratepayer costs. If, however, the cost of interim storage were funded from the Nuclear Waste Fund, ratepayer contributions to that Fund would be redirected from repository development to interim storage, without a corresponding decrease in repository cost. This would potentially increase ratepayer payments to the Nuclear Waste Fund. If the cost of interim storage were paid from sources other than the Nuclear Waste Fund, it would provide a clear economic benefit to ratepayers. Regardless of the funding mechanism chosen, it is essential that the practice of diverting Nuclear Waste Fee revenue to purposes that have nothing whatsoever to do with the disposal or storage of used nuclear fuel be stopped. If the cost of interim storage were to be paid from the Nuclear Waste Fund, the ultimate impact on ratepayers would depend on whether the cost of centralized, federal interim storage can be provided in a more cost-effective way than on-site storage at individual reactor sites. The industry believes that interim storage at one or two federal facilities provides a clear economic advantage over either on-site storage at every reactor site in the nation, or the development of multiple interim storage sites across the country.

Finally, it is important to remember that, even to the extent the cost of at-reactor storage is recovered by utilities from the federal government through litigation, the time and expense involved in such litigation make it a very costly option for ratepayers. Performance by the Government of its obligations is obviously a far superior result from the standpoint of the ratepayer, even if every utility recovered on each of its claims in full. Interim storage is certainly more cost effective for the federal government than litigating and paying such claims.